

Symposia Abstracts of the 2025 SAA 90th Annual Meeting, Denver, Colorado

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[26] Opening Session: Symposium • Ethical Dilemmas in the Study and Care of Human Remains beyond North America

(Sponsored by Bioarchaeology Interest Group [BIG], Repatriation Committee, and the SAA President)

The Native American Graves Protection and Repatriation Act (NAGPRA) has transformed how archaeologists conceive of ethical research and curatorial practice involving human remains. For example, most US museums refrain from the display of human remains, and many academic journals, including the flagship journals of the SAA, restrict the publication of photographs of human remains. While these measures are supported by many North American Indigenous groups (and archaeologists), they do not fully account for perspectives outside of the USA and Canada, particularly those from Latin America where stakeholders have different relationships with the dead and attitudes toward the display of remains. How should archaeology proceed when descendant communities' wishes conflict with dominant attitudes in the Global North? Does the extension of a US-centered ethos onto research and engagement in the Global South risk reproducing forms of cultural imperialism? Alternatively, if the alienation of descendant communities from their ancestors is in part a consequence of colonialism, what are the implications of using this ambivalence to justify bioarchaeological research in Latin America? This session will grapple with the challenges and nuances of ethical praxis in countries where social attitudes toward the dead vary and legal guidelines for their protection are nonexistent or underdeveloped. ***This session will include images of human remains.

[31] General Session • Historical Archaeology in Europe

[32] General Session • Digital Archaeology and Modeling in the Southeastern United States

[33] General Session • Communicating and Curating Archaeology in the Southeastern United States

[34] Forum • Airlie House 2.0, Envisioning New Directions for CRM Archaeology: Results of the 2024 Workshop and Future Developments

(Sponsored by SAA President)

The passage of the National Historic Preservation Act of 1966 and both the culmination of a series of topical Airlie House seminars in 1974 and the culminating 1977 Airlie House Report set the course of cultural resource management (CRM) archaeology in the United States for the next 50 years. Now, 50 years later, the profession is transforming, guided by newer and amended laws and regulations, technological innovations, a curation crisis, and social issues such as climate change, environmental justice, and the rights of descendant communities. These changes are affecting how CRM archaeology is practiced, and, in recognition, a workshop sponsored by the Society for American Archaeology (SAA) and National Park Service was held in May 2024 in West Virginia. The workshop drew on the expertise of professionals nationwide and considered four major issues selected by SAA membership that will affect CRM archaeology in the coming decades. This SAA forum will summarize the major topics discussed and recommended action items proposed by the Airlie House 2.0 workshop, which, if implemented, will affect our profession in the coming decades. Membership participation in this SAA forum and implementing change is expected and welcomed.

[35] Forum • COSWA Mentoring Forum on Gender Equity

(Sponsored by Committee on the Status of Women in Archaeology [CoSWA])

Since its founding, COSWA has been concerned with barriers that lead to pay gaps and underrepresentation across sectors of archaeology. Women and nonbinary individuals are underrepresented in prestigious leadership and academic positions, in journals, and as PIs of high-value grants. As representation decreases in positions with prestige, so too does compensation, exacerbating salary compression. Sexism continues to be the root cause of many issues in the discipline, instances of which must continue to be called out and addressed. Identifying challenges and confronting barriers through collaboration, mentorship, and networking

to foster community can combat such inequity. In this forum, we will (1) dialogue about factors impacting inadequate representation in archaeology leadership and discuss how to move contemporary archaeology forward. (2) We will address the mentorship needs of women and nonbinary aspiring / early-career archaeologists by the organization and membership. Finally, (3) we will continue our discussion of parenting in archaeology due to the continued prejudice against working parents—in particular working mothers—both in professional settings and at conferences. While the SAA has recently begun offering childcare, we will discuss how to continue to support similar initiatives to ensure we stay on track.

[36] General Session • Mortuary Practices and Human Remains in Mesoamerica

[37] General Session • Peoples, Places, and Pots in the Midwestern United States

[38] Lightning Round • The Talking Dog: Archaeological Novelties in Memory of Michael E. Moseley

This session remembers a giant in the field of archaeology through one of his many iconic maxims: The Talking Dog. As Mike would say, “It’s not what the dog was saying, but that he was talking at all.” His friends and colleagues reflect on Mike Moseley’s contributions to archaeology in this series through revelations of archaeological novelties that changed our perspective on the past. Those rare, unexpected archaeological phenomena in the most unexpected places are things that make us reconsider our preconceptions and change the way we think. Mike was always challenging us to rethink our suppositions and acknowledge our biases, and the talking dog was that anomaly you could not ignore and forced you to reenvision the meaning of the world you thought you knew. Mike’s work espoused this perspective, from his Maritime Foundations of Andean Civilization hypotheses that challenged the Agricultural Revolution as the only economic mechanism to spur on complexity, to his revelations on the role of climate change on the course of Andean prehistory. Mike passed away in the field in Moquegua, Peru, in July 2024, and we remember his contributions to archaeology through the novel discoveries of his friends and colleagues. *****This session will include images of human remains.**

[39] Symposium • Fiber and Perishables in Archaeology and Beyond

(Sponsored by Fiber and Perishables Interest Group)

Most of the population lives in uninterrupted contact with fiber and perishable items, from status symbols like designer clothing and handbags to utilitarian objects like automobile seatbelts and household linen. Archaeological evidence indicates that the tightknit relationship between people and these items is ancient, with evidence of fiber processing dated over 100,000 years at Cueva Anton, Spain, and evidence that Neanderthals possessed yarn production technology. Yet, aside from hobbyists and textile specialists, few people understand fiber types and processing, yarn production, and textile structure. Even fewer people appreciate the complexity and variety of these techniques, particularly before and during mechanization when processes were performed entirely or partially by hand. As a result, researchers ignore or superficially address or sideline fiber and perishables as *miscellaneous items* alongside rosary beads, marbles, and clocks (Mackay et al. 2006). This session invites papers focused on detailed recordings and analysis of fiber and perishable items from archaeological, historical, or museum contexts that demonstrate the research value and potential of fiber and perishables and associated materials. Contributions might also include best practice for handling, recording, and storing fiber and perishable items and recognizing tools and indirect evidence for fiber processing.

[41] Symposium • Entre costas, ríos, lagos y manantiales: Arqueología subacuática en contextos prehispánicos en Latinoamérica y el Caribe

La arqueología subacuática ofrece información valiosa sobre la intrincada y duradera relación entre el agua y las sociedades humanas. En el caso específico de las comunidades precolombinas, las interacciones que se mantenían con los cuerpos de agua eran procesos recíprocos, activos y colectivos que contribuían a la construcción de significados, prácticas culturales y cotidianas, así como la creación de relaciones sociales, políticas y económicas. Este simposio explorará y discutirá las investigaciones recientes de contextos prehispánicos sumergidos en Latinoamérica y el Caribe, resaltando la diversidad de entornos acuáticos como

ríos, lagos, lagunas, manantiales y zonas costeras, y la variedad de formas en que las sociedades precolombinas interactuaban con estos paisajes. Debido al ambiente acuático en el que se localiza la evidencia arqueológica, esta sesión también abordará la necesidad de integrar diferentes métodos, disciplinas y perspectivas de diferentes actores que hagan frente a los desafíos propios del contexto y la evidencia material sumergida. *****Esta presentación incluirá imágenes de restos humanos.**

Between Coasts, Rivers, Lakes, and Springs: Underwater Archaeology in Precolumbian Contexts in Latin America and the Caribbean.

Underwater archaeology offers valuable insights into the intricate and long-standing relationship between bodies of water and human societies. In the specific cases of precolumbian communities, interactions with bodies of water were reciprocal, active, and collective processes that contributed to the construction of values and cultural practices as well as social, political, and economic relationships. This symposium will explore and discuss recent research in submerged prehispanic contexts in Latin America and the Caribbean, highlighting the diversity of aquatic environments such as rivers, lakes, lagoons, springs and coastal sites, and the variety of ways in which precolumbian societies interacted with these landscapes. Due to the aquatic environment in which the archaeological evidence is located, this session will also address the need to integrate different methods, disciplines, and perspectives from different sources to address the challenges inherent to contextualizing submerged material culture. *****This session will include images of human remains.**

[42] Symposium • Exploring the Intersection of Ethnography and Technology: Understanding the Evolution of Human Technologies through Ethnographic Research

Ethnographic research plays a significant role within the wider archaeological study of human cultural and technological evolution. Offering a level of detail largely unavailable in archaeological contexts, ethnographic data has yielded invaluable insights into various aspects of diverse cultural materials and technological practices; from raw material acquisition, to manufacture, use, and discard. Beyond mere documentation, this research avenue has been instrumental in fueling the formulation of hypotheses and the cultivation of innovative ideas, particularly with regard to the “missing majority” of past organic material culture. The aim of this session is to showcase studies that combine the archaeological study of technology with ethnographic data and perspectives, with a particular emphasis on the role that ethnographic data might play within cultural evolutionary frameworks of past technological change.

[43] Symposium • Tribal Engagement Best Practices: Lessons from Arizona and New Mexico

For a variety of structural and traditional reasons, Tribes have historically been situated on the margins of meaningful involvement in the myriad levels of archaeological study from identification to mitigation. With increased awareness by agencies and private project proponents on their cultural heritage obligations, combined with increased capacity by Tribal cultural departments, the involvement of Tribes in all phases of cultural resources planning and permitting is steadily increasing. This symposium explores the methods that Tribal Historic Preservation Offices (THPOs), tribal advisory teams, State Historic Preservation Offices (SHPOs), other agencies, project proponents, and CRM companies are taking to increase meaningful, transparent, and honest discussions on cultural resources in the American Southwest. The individual presentations will explore a variety of topics related to Tribal engagement best practices that are pertinent to agencies, Tribes, and consulting archaeology companies in 2025.

[44] Symposium • Technology, Production, and Social Changes in Chinese Archaeology

This session explores the profound impacts of technological advancements and production techniques on societal transformations within Chinese archaeology. By examining key prehistorical/historical periods, we will explore how technology in a wide array of natural resources, such as plants, animals, soils, minerals, metals, water, labor, etc., not only enhanced production capabilities but also triggered profound social changes. This session aims to expand discussions through the examination of diverse cultural materials to highlight the intricate connections between technological progress and social structures. Participants will gain insights into how these advancements influenced economic-political systems, social differentiations, and ritual practices. Featuring a discussion on how integrating archaeological data with diverse approaches can offer a

more nuanced understanding of the development of ancient Chinese civilization, this session underscores the pivotal role of technology and production in driving social changes, in order to provide a comprehensive perspective on the dynamic interactions between humans and nonhuman factors. *****This session will include images of human remains.**

[45] Symposium • Landscapes of Death: Placemaking and Postmortem Agencies

(Sponsored by Bioarchaeology Interest Group [BIG] and the Archaeology Division [AD] of the American Anthropological Association [AAA])

While the dead do not bury themselves, they enter and exit out of relationships with the living. The natural decomposition process and physical manipulations of the dead bodies afford opportunities for the dead to transform into new entities. Therefore, the deceased shift into new social roles and meanings through temporally and spatially contingent processes subject to contestation. Archaeological studies often treat burial contexts as static places. But places are always in process, gathering and holding within them people, things, memories, and other nonmaterial phenomena (Rivera Prince and Brock Morales 2024). The living and the dead are “not only in places, but of them” (Casey 1995:24). Considering that the dead have capacity to engage with other human and nonhuman entities, they play key roles in placemaking, political interactions, and identity construction. Broadly, papers in this session cover a global and temporal range, contributing to a theory of mortuary politics and placemaking. *****This session will include images of human remains.**

[46] Symposium • Reflections and Ripples of the Caiman: Papers in the Spirit of Don Lathrap

Some 35 years after his sudden passing, the research of Donald Lathrap continues to affect the development of archaeology throughout the Western Hemisphere and especially in the area of his greatest interest, South America. In recent decades, as the curtain has lifted for archaeologists regarding the antiquity, diversity, and complexity of precolumbian Amazonian societies, Lathrap’s perspective, considered unorthodox at the time, has been largely (though imperfectly) vindicated. This session is arranged along two themes. The first is reflective, with several papers considering the impacts Lathrap had on their research and development as scholars. This includes discussions of Lathrap’s pedagogy from former students and celebrations of notable milestones in Andean archaeology like the 50th anniversary of the UIUC excavation at Real Alto. Recent archival research on Lathrap’s archival material currently housed in multiple institutions throughout the United States and Peru and the publication of his dissertation are also “new” revelations on Lathrap’s contribution to South American archaeology. The second theme of this symposium tests and confronts Lathrap’s ideas with new datasets coming out of the Andes, Amazonia, and the Caribbean. New ripples are made by investigators who grapple with questions he could only imagine would be asked in South American archaeology.

[48] Symposium • Disentangling Puebla/Tlaxcala: Recent Advances in Archaeology, Ethnohistory, and Visual Culture

Although prominently located in central Mexico between the Basin of Mexico, the Gulf Coast, and Oaxaca, Puebla/Tlaxcala has nevertheless been underrepresented in regional syntheses. This despite the fact that archaeological research in the region has been ongoing for well over 100 years with several major projects, the ethnohistorical record is replete with numerous colonial sources, visual culture (such as murals and polychrome ceramics) from precontact sources tie into prominent pan-regional themes, and extensive ethnographic research connects living descendants with their Indigenous ancestors. This session brings together scholars working at such sites as Cholula, Tlalancaleca, Cantona, Tehuacan el Viejo, and Valsequillo, as well as ethnohistorians and art historians investigating precontact and early colonial themes. The objective is to explore the interrelationships between sites and time periods while integrating them into larger regional dialogues. *****This session will include images of human remains.**

[49] Symposium • Archaeometallurgy, Eurasia, and Beyond: Papers in Honor of Vince Pigott

A session honoring the scholarship, mentorship, and career of Prof. Vincent Pigott. Papers will be presented by colleagues and scholars on archaeology and archaeometallurgical research centered in regions where Prof. Pigott has made scholarly contributions. Presentations will span a range of topics, from recent advancements in the field of archaeometallurgy to historical insights that build on Dr. Pigott’s foundational contributions.

[50] Symposium • Building a Better Chronology for Fifteenth- to Eighteenth-Century Eastern North America through Radiocarbon Dating and Collaborative Research Agendas

Participants in this session recognize the need to emancipate sites and events dating to the later fifteenth through early eighteenth centuries from outdated culture-historical taxa. Terms such as Mississippian, Woodland, and protohistoric and periodization based on ceramic types and European-manufactured objects have little relevance to contemporary descendant communities and collaborative research agendas focused on this crucial period in Indigenous and early colonial history. Advances in radiocarbon dating, including sampling strategies; laboratory methods; and statistical modelling incorporating informative priors are allowing researchers to overcome previous challenges associated with the calibration curve. Enhanced chronologies are transforming understandings of settlement patterns, population movement, and the circulation of material goods and permitting the articulation of historical and traditional knowledge in ways that are providing new insights about Indigenous agency, the timing and pace of cultural transformations, and processes of accommodation and resistance to colonial incursions. The aims of this session are to highlight research involving contact-era chronology building in the eastern Woodlands of North America, collectively evaluate the current coverage of radiocarbon dated sites and components, and take steps toward developing collaborative research agendas that consider continental- to local-scale questions about Indigenous and early colonial transformations in eastern North America.

[51] Symposium • Cooperative and Noncooperative Transitions in the Archaeological Record

Selfishness and despotism were once considered the prime drivers of social complexity in premodern societies, and democracy was imagined as a modern and “Western” invention. However, recent theory driven by Richard Blanton, Gary Feinman, and others has revealed that these notions are couched in Orientalism and ethnocentrism—many ancient societies were more cooperative from the onset. Governance changes through time. In the past, as today, tensions exist between good governance (with a focus on the greater good) and despotism (with a focus on the ruling elite). Of course, societies are not one or the other but exist along a continuum. Some societies are more cooperative, and others are more despotic. For various reasons, the organization can change over time. At some times in history, such as in nineteenth-century France, such shifts can be sudden and extreme. At other times, they can be gradual or even approach a near stasis. The papers of this session consider archaeological evidence of the tension between despotism and cooperation (or lack thereof) in various parts of the world. *****This session will include images of human remains.**

[52] Symposium • Sessions in Honor of Dr. Fred Valdez Jr. and His Contributions to Archaeology Part I

Professor Fred Valdez Jr. has had a long, important career in terms of his own contributions to Maya archaeology and through his direction of projects and institutions. As director of the Center for Archaeological and Tropical Studies (CATS) at the University of Texas at Austin and the Programme for Belize Archaeological Project (PfBAP) he has mentored scores of students at all levels. He has also advised a remarkable number of doctorate and master’s degrees as a professor at UT Austin over the past several decades. Fred has also taken on the heavy mantle of directing the Texas Archeological Research Laboratory (TARL) at the University of Texas at Austin. This session brings together papers on the considerable contributions of Fred Valdez Jr. to Maya archaeology and to archaeology in general. This session brings together papers focused on the following topics: novel research presentations on Maya archaeology that Fred has supported and contributed to over many decades, discussions on his pedagogy and mentorship, and complementary special topics on bioarchaeology, geoarchaeology, geophysics, and paleoecology that have been supported by Fred through his leadership at CATS, PfBAP, and TARL. *****This session will include images of human remains.**

[53] Symposium • Geoarchaeology in First Americans Research Part I

(Sponsored by The Center for the Study of the First Americans Symposium and SAA's Geoarchaeology Interest Group)
There are unresolved fundamental questions regarding the origin of the first people to enter the Americas at the end of the Pleistocene, the route(s) they took to get south of the North American continental ice sheets, the timing of their arrival, and the process of their dispersal across the Americas. Historically,

geoarchaeologists have played a key role addressing these issues by conducting stratigraphic studies at key sites and estimating the age of those sites (e.g., Clovis and Folsom). Today, with many new tools at their disposal, geoarchaeologists are uniquely qualified to address key site specific and regional questions. At the site level, a geoarchaeologist can use visual macroscopic, microscopic, and chemical analyses to define the site and adjacent regional stratigraphy, reconstruct the physical landscape, determine site formation processes, use methods to accurately date the site, evaluate the archaeological evidence, and evaluate site integrity. Geoarchaeologists can also collect regional data to determine the timing and viability of routes taken by the First Americans. This first of two sessions, cosponsored by the Center for the Study of the First Americans Symposium and the SAA's Geoarchaeology Interest Group, highlights important contributions geoarchaeologists are making to fundamental questions about First Americans research.

[54] Symposium • Unfinished Business and Untold Stories: Digging into the Complexity of “Animal Domestication”

(Sponsored by Zooarchaeology Interest Group)

Traditional discourse describes domestication as a complex and transformative process, widely recognized as one of the most significant shifts in human-animal relational dynamics. However, as with many foundational concepts, precise definitions of “domestication” are complicated by multilayered and multigenerational insights and expectations (e.g., domestication as a state of being, as a biological process, as a lived/social experience). This “palimpsest” of definitions can make it difficult to investigate and interpret human-animal interactions like domestication, particularly when the nature of these relationships is uncertain and multifaceted, as is often the case in the archaeological record. There is also understandable dissatisfaction about how domestication is often still conceptualized, as some “traditional” models propose “universal” (human-dominated) domestication narratives, which draw on intuition or expectations grounded in Western scientific ontologies. While some domestication cases align with these traditional narratives, there are many “atypical” species and relationships that do not follow “expected” domestication trajectories but still provide needed insights into the variability of human-animal interactions. The purpose of this symposium is to showcase a range of theoretical perspectives, approaches, and case studies that challenge the universality of human-dominated domestication narratives and exemplify the variety of interactions that can and should be incorporated into “domestication research.” *****This session will include images of human remains.**

[55] Symposium • *MW Lidar Research in the US Southwest

From the depths of the ocean to the far reaches of space, lidar has come a long way since its inception in the 1960s. As one of the most transformative and versatile technologies, lidar has revolutionized the way we conceptualize our shared humanity. Lidar’s ability to penetrate dense vegetation and tree canopies reveals hidden topography making it an invaluable tool for identifying and researching previously unknown features including ancient irrigation systems, agricultural terraces, settlements, road networks, and much more. These data greatly expand our ability to reconstruct how peoples managed resources and organized social, economic, ritual, and political systems through time and across space. This symposium explores current lidar research in the present-day northern US Southwest to provide current insights on methodological applications, data sovereignty, cultural heritage preservation, land management, social networks, community formation and dissolution, agricultural production, and how past peoples manifested cosmological ideologies within their built environments.

[56] Symposium • Fishing Technologies: Exploring Manufacturing Techniques and Styles, Traditions, Exchange, Migration, and More

Fishing has been a central subsistence activity for maritime adapted societies around the world. A variety of fishing-related implements have been documented in archaeological contexts including stand-alone tackle and composite tools. Different types of fishing tackle and sizes of hooks, gorges, barbs, and points likely represent technologies adapted to specific habitats and fish prey types, with some continuing in use after “newer” technologies are invented indicating preference and continuity. Manufacture marks and use-wear can reveal technological gestures, innovations, transformations, and uses. In addition, the nature of animal raw material used for manufacturing fishing tools can tell us about artisanal traditions, traditional ecological knowledge, and movements of people and natural resources. In this context, the proposed session seeks to assemble a group

of researchers from around the world to share and compare their studies on fishing technologies. Discussions about manufacturing techniques, context of use, changes through time in tool characteristics, and the social and economic context of fishing practices, among others, are welcome. The session will be an opportunity to share case studies and methodological and theoretical approaches toward the study of fishing tool production and use within coastal- and maritime-focused societies.

[57] Symposium • Papers in Celebration of Bruce B. Huckell Part I

In April 2024 we lost Bruce Huckell, an excellent archaeologist and a truly good person and friend. Dr. Huckell's career spanned the archaeological record of the Southwest from Clovis through early agriculture, bringing his expertise as a field archaeologist, geoarchaeologist, and expert lithic analyst and flintknapper to bear on its interpretation. The symposium will consist of a series of research papers in honor of Bruce presented by his collaborators, colleagues, and students, as well as discussions that reflect on his life and career. This is Part I of a two-part symposium, emphasizing Late Pleistocene archaeology; Part 2 (a separate symposium) emphasizes Holocene archaeology and methodological contributions.

[58] General Session • Foodways in the Southeastern United States

[59] Symposium • Maritimity in the Indo-Pacific World

The Indo-Pacific region has long been characterized by dynamic maritime interactions that shaped cultural, economic, and political landscapes. This symposium explores the concept of “maritimity”—the cultural and economic connections communities have with the sea—within the Indo-Pacific World, focusing on archaeological evidence that reveals the depth of these relationships. Drawing from diverse case studies across Southeast Asia, East Africa, South Asia, and Oceania, the panel investigates how maritime practices, technologies, and networks contributed to the development of coastal societies and their integration into broader regional and global systems. Themes include the role of seafaring and boat-building traditions in expanding trade routes, the development of coastal settlements as hubs of interaction, and the exploitation of marine resources that underpinned regional economies. The symposium also considers how environmental factors like monsoons and sea-level changes influenced maritime lifeways and how archaeological findings from ports, shipwrecks, and coastal landscapes shed light on the intertwined histories of communities across the Indo-Pacific. By highlighting the interplay between local adaptations and broader maritime networks, this session offers new perspectives on how maritimity shaped cultural identities and social dynamics in the Indo-Pacific over millennia, contributing to the region's distinctive maritime heritage.

[60] General Session • Global Coastal and Island Archaeology

[61] Symposium • The Current State of Archaeological Research across Southeast Asia

(Sponsored by Southeast Asian Archaeology Interest Group)

From Myanmar to the Philippines, Southeast Asia encompasses a deep history with a wide set of cultures. Over the last few decades, archaeological research in this area has experienced significant advancements in terms of theoretical approaches, methodological developments, and archaeological discoveries. New and continuing scholars and field projects have been substantially contributing to an evolving archaeological dataset. In an endeavor to present the rapidly changing state of archaeological discourse, a collection of scholars will discuss the progression and findings of research within their areas of interest. In this fashion, a diversity of topics will be presented from recent archaeological fieldwork throughout Southeast Asia. This will also assist in a continued effort to encourage a flourishing community of developing and established scholars.

[63] General Poster Session • Ceramics Analysis and Craft Production

[64] General Poster Session • Digital Archaeology Part I: Photogrammetry and 3D Modeling

[65] General Poster Session • From Teapots to Monuments: Ceremony, Ritual, and Symbolism

[66] Poster Symposium • Ceramic Petrographers in the Americas: Production Practices and Social Networks from Multilevel Angles

The focus of this poster session is on ceramic materials (*sensu largo*), production practices, and social networks approached from a multilevel angle, including ceramic petrography coupled (or not) to other analysis techniques, grounded in conceptual frameworks leading to a better understanding of social interactions, knowledge construction, and the building of communities at large.

[67] Poster Symposium • From the Agricultural to the AI Revolution: Analytical Advances in Paleoethnobotany

Microbotanical approaches have transformed our understanding of past human relationships with the environment. Recent discoveries have been driven by methodological advances and encompassing novel theories, technologies, computational methods, and statistical approaches. Fine-grained environmental data analyzed at microscopic scales—such as pollen, phytoliths, starch grains, and microcharcoal—are essential to build a more-complete narrative about past, present and future human impacts on the world around us. Innovation in sample collection, extraction, detection, identification, and interpretation push the boundaries of what is possible; increased efficiencies counterbalance the time and resource constraints associated with microbotanical studies, while new data sources and analytical scales and approaches can transform how we interpret the past. Posters in this session showcase methodological creativity that thinks outside the box, embracing new technologies and analytical perspectives to highlight novel approaches to overcome universal challenges in archaeological and paleobotanical research. These include but are not limited to the development and refinement of laboratory protocols, multiscale perspectives incorporating microbotanical remains, innovative approaches to build larger datasets, and the use of machine learning and artificial intelligence to develop fully automated sample-to-data pipelines.

[68] Poster Symposium • Recent Archaeological Work by Chronicle Heritage Staff

Cultural resource management is the primary employer of archaeologists in the United States and has seen an increase in the number and scale of projects conducted in the past several years. Growth in the CRM field has been spurred by many factors, including integration of technology that allows for more robust and proficient work. This poster session highlights recent work by Chronicle Heritage staff that reflects innovation, growth, and preservation in the field, as well as international expansion. Posters in the session will include Chronicle Heritage staff based across the United States and internationally, and cover survey, excavation, artifact analyses, ethnography, and considerations of ethical issues in CRM archaeology. These posters illustrate the scope of work being conducted by CRM archaeologists and its research potential.

[69] General Session • Archaeometry in Africa**[70] General Session • Historical Archaeology in North America****[71] Forum • A Forum on Media Outreach for Archaeologists**

Archaeologists are working more frequently with public audiences and across the media landscape to persuade, to advocate, and to tell impactful stories. As experts in our fields, we are called on to take a leading role in shaping the ways in which cultural heritage data are perceived as the outcomes for stakeholders, preservation, and policy grow more urgent. We need better tools to manage multimodal channels for science communication and to foster partnerships with descendant communities, funders, clients, and lawmakers. This forum, brought to you by members of the SAA Committee for Media Outreach, will focus on developing approaches to amplifying your work in the public eye and managing media engagement. Moderators and presenters will discuss how to handle media inquiries, do interviews, and manage your personal profile. The forum is intended to offer insight into how the changing media landscape connects with archaeological news stories and to improve the quality of information reaching the public. Key takeaways include developing useful tools for media planning, creating effective social media content, navigating media partnerships, addressing pseudoscience and anti-science critiques, and managing harassment and trolling.

[72] Forum • A Community Discussion of the January 21, 2025, Executive Order “Ending Illegal Discrimination” and its Impacts on Archaeology

Archaeologists in all sectors, at all career stages, and working throughout the Western Hemisphere face many challenges as the US government rolls out new guidelines for “ending illegal discrimination.” Federal grants and contracts have been cancelled, federally employed archaeologists fired, financial support eliminated for projects outside the United States, university professors advised to avoid using representative terminology, financial aid to students curtailed, and much more. This forum creates space for SAA members to support one another by sharing how a new US political landscape impacts their archaeological practice, as well as how they are charting new paths forward to navigate both these new challenges and long-standing ones. The panel, which includes members of the SAA Board of Directors, also expressly seeks member ideas for how the Society can best support them as they chart these new paths together in the SAA and in their home institutions.

[73] Forum • Possibilities and Pitfalls in Teaching and Learning Digital Archaeology

(Sponsored by North American Chapter of Computer Applications and Quantitative Methods in Archaeology [CAA-NA])

Digital skills are now an essential part of archaeological practice. Some of these skills are well-established parts of an archaeologist’s toolkit (e.g., databases and GIS), while others have only come to prominence in the last decade or even more recently (e.g., drones, 3D scanning, agent-based modeling, and machine learning / AI). In this forum, discussants with different areas of technical expertise and from different spheres of archaeology will examine how both students and practicing archaeologists are learning new digital tools. How can we overcome barriers such as time, money, and bureaucracy? What skills will be considered essential in five or 10 years? How can we build relationships with colleagues in fields like math and computer science? How should we incorporate new technologies into the undergraduate and graduate curriculum, and what resources exist for learning when no formal instruction is available? We look forward to the opportunity of discussing these issues with the wider archaeological community and hope to use this session as a catalyst to create new connections, find more ways to share resources, and strengthen digital archaeology communities of practice. This session is sponsored by the North American chapter of Computer Applications and Quantitative Methods in Archaeology (caa-international.org).

[74] General Session • Zooarchaeology from the Midwest to the Northeast

[75] General Session • Mortuary Archaeology and Bioarchaeology in the Southeastern United States

[76] General Session • New Discoveries and Interpretations at Pompeii

[79] General Session • Bioarchaeology in East Asia

[80] General Session • Metallurgy around the World

[81] General Session • Recent Advances in Mediterranean Archaeology

[82] General Session • Upper Paleolithic in SW Asia and the Levant

[83] Symposium • Nuevos datos de la dinastía Kaanu’l en el Clásico Temprano de la tierras bajas mayas: Proyecto Promeza Dzibanche/Kaanu’l 2023-2024

La zona arqueológica hoy conocida como Dzibanche corresponde a la antigua ciudad maya de Kaanu’l, sede de la dinastía del mismo nombre durante el Clásico Temprano desde aproximadamente el 300 al 630 dC. Durante la temporada 2023-2024 del Proyecto Promeza Dzibanche/Kaanu’l se realizaron trabajos de excavación y conservación de arquitectura monumental en los complejos ceremoniales de Tutil, Lamay y

Grupo Principal en Dzibanche. En la plaza Tutil y en el complejo Lamay se comprobó la teoría ya planteada por el Dr. Enrique Nalda de acuerdo a la cual el estilo arquitectónico monumental propio de la dinastía Kaanu'l se componía de templos con crestería y paredes exteriores decoradas por pilastras pareadas sobre basamentos piramidales decorados con talud-tableros. Este último rasgo arquitectónico, conocido inicialmente en los edificios de los Dinteles y Cormoranes ahora está documentado en seis templos adicionales, sugiriendo una más fuerte relación entre los reyes Kaanu'l y Teotihuacan. Además, se registran entierros masivos, nuevos textos y relieves modelados en estuco que revelan más detalles de la narrativa ideológica de la dinastía Kaanu'l en su periodo de auge en las tierras bajas mayas del sur. *****Esta presentación incluirá imágenes de restos humanos.**

[84] Forum • Avocational Archaeology in the Twenty-First Century: Volunteers as Lifelong Learners and Researchers

(Sponsored by Council of Allied Societies)

Avocational archaeology has changed significantly since the founding of most archaeological societies in the United States. At the organizations' inceptions, volunteers were tasked with significant excavation opportunities with less of a focus on the associated lab work. However, in the modern age, avocational archaeologists are encouraged to participate in research projects and engage in larger community outreach. With varied interests and experiences, avocational archaeologists are valuable assets, whether for their expertise in interdisciplinary research or for their specialized skill sets in the lab and in the field. In this forum, discussants will explore the varied histories of state archaeological societies, current volunteer programs and initiatives, and how societies and their members are active participants in meaningful archaeological research.

[85] General Poster Session • Art, Aesthetics, and Iconography

[86] General Poster Session • Zooarchaeology Part 1: Domestication

[87] General Poster Session • Zooarchaeology Part 2: Foodways and the Human Diet

[88] General Poster Session • Zooarchaeology Part 3: Taphonomy and Site Formation

[89] General Session • Colonial Entanglements in Latin America

[90] Poster Symposium • A Global Perspective on Fiber and Perishable Craftways in Ancient Cultures

(Sponsored by Fibers Perishable Interest Group)

Fiber and perishable items have been a part of life on Earth for at least 40,000 years, and fiber processing techniques and tools reflect local ecology and resource availability resulting in a plethora of archaeological materials related to or resulting from these techniques. This poster session will be a global perspective on fiber and perishables including basketry, cordage, textiles, fiber processing tools, raw materials, and the design and semiotics of these artifacts. Submissions are encouraged to consider the socioeconomic and ritual aspects of fiber and perishable items, their practical applications in households and as trade goods, and what these artifacts can reveal about local resource exploitation.

[91] Poster Symposium • Innovation and Population Dynamics in Drylands

Do dryland environments experience similar trajectories of innovation and population change over time, or do these environments display unique trajectories of change? This is a basic question that our session explores. We present case studies and comparative papers of dryland systems that attempt to explain variability in social-technological and population change over time. We draw on formal models, large datasets of archaeological radiocarbon, and data on changes in technology and social organization over time to help explain culture change in dryland environments.

[92] Poster Symposium • Military Cultural Resource Management*(Sponsored by Military Archaeological Resources Stewardship Group)*

The Department of Defense's responsibility of cultural resource management and stewardship is a constantly changing and expanding challenge. As a federal agency, regulatory compliance, particularly the stewardship of archaeological resources, is a primary concern for DoD cultural resource management within a changing military environment of mission directives, goals, and challenges. Researchers within and outside of the DoD offer expertise and interest that can significantly assist the agency achieve its CRM responsibilities while maintaining military readiness.

[94] Symposium • Working toward a More Inclusive Picture of the Past: Archaeology, Archives, and Historically Underrepresented Communities in Cultural Resources Management

Despite often facing schedule and budget constraints, cultural resources management (CRM) provides a unique opportunity to identify sites and landscapes linked to groups who have historically been underrepresented in both the archaeological and archival record. These resources, found in diverse geographic contexts, reveal the stories of ethnic and racial minorities and the economically disenfranchised in both urban and rural America during periods of significant change. This symposium will present several case studies focused on the identification and association of archaeological resources with underrepresented groups, highlighting the challenges faced and demonstrating how linking the archaeology with archival research can uncover the forgotten stories of marginalized communities. Panelists will also explore how CRM, an often-overlooked component of large-scale engineering, energy, and infrastructure improvement projects, can allow for significant and impactful research into these communities, individuals, and broad narratives—sometimes challenging our overall definition(s) of significance.

[95] Symposium • *MW Managing Water, Protecting Heritage: Bureau of Reclamation Undertakings in the American West

Cultural resources program staff of the Bureau of Reclamation are dedicated to the agency's mission of managing, developing, and protecting water and related resources in an environmentally and economically sound manner. As the largest wholesaler of water and the second largest producer of hydroelectric power in the USA, Reclamation has built, acquired, or otherwise become responsible for numerous historic properties in its 123-year history. These include buildings and structures such as dams, canals, and power plants; it also includes archaeological sites, both precontact and historic, on the lands acquired or withdrawn for project purposes. Management of these properties includes investigations into a diverse range of issues related to archaeology, history, architecture, engineering, museum property, and culture. Reclamation has a robust cultural resources program to manage these resources according to the dictates of federal laws such as the NHPA, ARPA, and NAGPRA. Staying in compliance with these laws includes maintaining working relationships with Tribes and other stakeholders for successful collaboration. This session highlights projects and experiences conducted or overseen by Reclamation, reflecting important issues in the American West.

[96] Symposium • Geoarchaeology in First Americans Research Part 2*(Sponsored by Geoarchaeology Interest Group and Center for the Study of the First Americans Symposium)*

There are unresolved fundamental questions regarding the origin of the first people to enter the Americas at the end of the Pleistocene, the route(s) they took to get south of the North American continental ice sheets, the timing of their arrival, and the process of their dispersal across the Americas. Historically, geoarchaeologists have played a key role in addressing these issues by conducting stratigraphic studies at key sites and estimating the age of those sites (e.g., Clovis and Folsom). Today, with many new tools at their disposal, geoarchaeologists are uniquely qualified to address key site specific and regional questions. At the site level, a geoarchaeologist can use visual macroscopic, microscopic, and chemical analyses to define the site and adjacent regional stratigraphy, reconstruct the physical landscape, determine site formation processes, use methods to accurately date the site, evaluate the archaeological evidence, and evaluate site integrity. Geoarchaeologists can also collect regional data to determine the timing and viability of routes taken by the first Americans. This is the second of two sessions, cosponsored by the Center for the Study of the First Americans Symposium and the SAA's Geoarchaeology Interest Group, that highlight important contributions geoarchaeologists are making to fundamental questions about First Americans research.

[97] Symposium • The Mexica Royal Court: A Symposium in Honor of Alfredo López Austin

This session is intended to provide a forum for new scholarship on all aspects of the Mexica royal court across and integrating the disciplines of archaeology, art history, and ethnohistory. Potential subjects encompassed by the scope of this panel include the ideology, ritual, and regalia of Mexica rulership, association, and identification of the tlatoani with deities, the royal administration of justice, the role of music in royal activities, Toltec antecedents of Aztec royal offices and imagery, and interactions between Aztec royalty and their descendants and the Spanish during and after the conquest.

[98] Symposium • Papers in Celebration of Bruce B. Huckell Part 2

In April 2024, we lost Bruce Huckell, an excellent archaeologist and a truly good person and friend. Dr. Huckell's career spanned the archaeological record of the Southwest from Clovis through early agriculture, bringing his expertise as a field archaeologist, geoarchaeologist, and expert lithic analyst and flintknapper to bear on its interpretation. The symposium will consist of a series of research papers in honor of Bruce presented by his collaborators, colleagues, and students, as well as discussions that reflect on his life and career. This is Part 2 of a two-part symposium, emphasizing Holocene archaeology as well as methodological contributions; Part 1 (a separate symposium) emphasizes Late Pleistocene archaeology.

[99] Symposium • Bridging Science and Service: How Archaeologists Address Climate Change

(Sponsored by Committee on Climate Change Strategies and Archaeological Resources)

In 2014, climate change took on a new dimension at the SAA Annual Meeting to include reporting on contemporary impacts on tangible and intangible cultural heritage, alongside more traditional research on human responses to past climate change. Since then, climate change discussions have featured the demands of immediate response, prioritization, and communication on our practice. This session focuses on the practicalities of bridging science and service in climate change-related work. In addition to conventional research responsibilities, archaeologists must familiarize themselves with the impediments and opportunities of legislation and funding streams, reframe teaching content to prepare students for a rapidly changing field, communicate with the public and other scientists, and consider how all of this will shape future responses to the on-going climate crisis. Presenters will emphasize the integration of science and service, demonstrating how archaeologists advance the discipline by bringing knowledge and practice to address the realities of climate change.

[100] Symposium • For Conquest or Defense? The Fortresses and Fortified Centers of Mesoamerica

Fortified centers, fortresses, and citadels are found throughout Mesoamerica from the Preclassic period into the conquest. The form of these sites varies greatly. Some are protected by walls, moats, and towers, others by steep natural topographic and geological features of the environment. These sites are sometimes interconnected with auxiliary surveillance systems that could carry information to other towns or cities. Teasing out the history of such places can be difficult, particularly when most locations contain few, to no, written words. Were they defensive? Or were they instruments of domination? Who did they protect? The local population? Colonizers? Were these places refuges? In this session participants explore a range of sites from Mesoamerican cultures including the Maya, Nahuatl, Teotihuacanos, and Zapotecs. Scholars will discuss the archaeological evidence from these sites, employing a range of analyses including lidar, lithics, ceramics, and codices, to determine the role each of these fortified sites likely played in the machinations of rulers, commoners, and invaders. *****This presentation will include images of human remains.**

[101] Symposium • Culture, Climate, and Connections: Eventful Histories of Human-Environment Relations

(Sponsored by SAA Geoarchaeology Interest Group)

Over the last 30 years, archaeologists in North America have been increasingly attuned to the complex connections between Indigenous peoples and their environments. Shifting away from deterministic thinking, this environmentally conscious archaeology has explored how people and their environment are co-constituting while deteriorating the nature-culture dichotomy. Landscapes, waterscapes, and climate are all actants in historical processes, variably contributing to culture change and the decisions employed by ancient

communities. Environmental actors have important social, political, and cosmological significance in Indigenous histories. In the current era, archaeologists are oriented toward novel methodologies and anthropological frameworks that permit investigations of the cultural factors entangled in the interactions between humans and both the environment and changing paleo-landscapes through time. This session brings together scholars from across the discipline to consider new ways of thinking and expand narratives of the Native deep history of the continent. Participants build on a variety of theoretical corpuses, cross-disciplinary methods, and reframed historical narratives to develop a compelling environmental anthropology of antiquity. Our aim is to articulate anthropological approaches and new possibilities in environmental archaeology.

[102] Symposium • Method, Theory, and History in the Mississippian World: Papers in Honor of Timothy R. Pauketat

In this symposium, we celebrate the career of Timothy R. Pauketat and reflect on his many contributions to archaeological theory in Mississippian and North American archaeology. Tim's stellar career of more than 40 years culminates in his role as the State of Illinois archaeologist and the director of the Illinois State Archaeological Survey at the University of Illinois. While his contributions are many, perhaps his most far-reaching has been the development and furthering of theoretical innovations impacting scholars outside of the Mississippian Midwest. Tim's scholarship highlights his ability to connect big datasets, drawn from extensive excavations at Cahokia and Cahokia-related sites, with cutting-edge theory. His broad historical connections between Indigenous and historic period groups throughout the Americas force us to think about larger theoretical issues including history, agency, materiality, and more recently New Materialisms. Participants in this symposium should engage with how Tim's research and theoretical developments impact your work while also reflecting on "Tim through the ages." In honoring Tim, we celebrate his career, legacy, friendship, and contributions to anthropological archaeology.

[103] Symposium • Modeling Human Behavior through Ethnoarchaeology: Ethnoarchaeology as Long-Term Traditional Knowledge (L-TeK)

Recent scholarly works have consistently highlighted the potential of archaeology and deep historical insights to contribute to the attainment of the United Nations Sustainable Development Goals (UN SDGs). The incorporation of Traditional (TK), Local (LK), and Indigenous People's Knowledge (IPK) into the framework of sustainable development has recently gained traction. While these forms of non-Western (nonacademic) knowledge encapsulate millennia of experiential wisdom, the insights derived from Long-Term Knowledge (L-TeK) have yet to be fully harnessed. Designing solutions to today's challenges based on the analysis of short-term data can lead to negative results, and multifaceted approaches are needed, involving mapping present-day traditional practices and investigating how past societies responded to the challenge of sustainably managing resources. This posits ethnoarchaeological data as the most potent proxies for L-TeK. We invite contributions highlighting how ethnoarchaeological or experimental data can help in building frameworks to address current challenges. We specifically target works that use quantitative and or modeling data that can help in building models that can be applied widely, overcoming the particularity of single case studies. Contributions can be both theoretical or practical examples and applications. We also welcome critical contributions that favor more traditional ethnoarchaeological approaches to stimulate discussion.

[104] Symposium • Black as Night, Dark as Death: Bioarchaeology of the Mesoamerican Subterranean

Subterranean features across Mesoamerica are particularly important given their status as ritual spaces that carried strong ideological significance. As such, human skeletal remains deposited in caves, cenotes, chultuns, and other natural and artificial subterranean chambers provide some of the best contexts to investigate ritual behavior among ancient Mesoamericans. In focusing on these specialized contexts, it is not surprising that bioarchaeologists encounter human remains that extend our understanding of the life and death of ancient Mesoamericans beyond what is provided in traditional mortuary contexts. The goal of this session is to contribute to the theoretical and methodological development of the study of human skeletal remains from Mesoamerican subterranean contexts. *****This session will include images of human remains.**

[105] Symposium • Celebrating the Contributions of Volcanologists Minard Hall and Patricia Mothes to Ecuadorian Archaeology

Ecuador is one of the most volcanically active regions in the world and Minard “Pete” Hall and Patricia “Patty” Mothes are giants of Ecuadorian volcanism. Their work has been tremendously influential in understanding volcanic dynamics and human-volcano interactions throughout time in Ecuador. Pete began publishing on volcanism in the 1970s and was one of the most influential figures in early Ecuadorian volcanism, producing research that was foundational for the field. Patty brought a human perspective to their research, connecting it to communities both past and present. She is exceptionally collaborative and has authored and coauthored almost 300 articles and chapters. Together, Pete and Patty helped lead the volcanism program at the Instituto Geofísico de la Escuela Politécnica Nacional monitoring Ecuadorian volcanoes, communicating potential hazards to the public, and training new generations of Ecuadorian volcanologists. This session brings together their students, colleagues, and friends to discuss the influence their research has had on the field of archaeology and how they have shaped our understanding of the relationships between human societies and dynamic volcanism in Ecuador and around the world. Topics cover a broad range of subjects from volcanic impacts on agroecosystems, influence on warfare and depopulation, and beliefs and ritual practices.

[106] Symposium • Crafting a Legacy in Archaeology: Papers Celebrating the Career of Ken Hirth

For over 50 years, Ken Hirth has crafted a legacy in the field of archaeology, driving new and innovative perspectives in cross-cultural ancient economy and spatial pattern research across Mesoamerica. During Ken Hirth’s extensive career, he (co)directed over a dozen landmark projects, most notably at the sites of Xochicalco, Tepeaca, Teotihuacan, and San Lorenzo in Mexico, El Cajon in Honduras, and Jicamarca-Cajamarquilla in Peru. His pioneering studies in preindustrial Mesoamerican marketplaces, obsidian craft production, and lithic blade technology have shaped generations of archaeological approaches to ancient economy, and he has produced nearly 30 authored, edited, or coedited books on these topics. In addition to these accomplishments, one of Ken Hirth’s greatest achievements is his commitment to mentoring students, many of whom pursue diverse research throughout Mesoamerica today. This symposium celebrates Ken Hirth’s outstanding career in archaeology, his numerous contributions to this field, and the many people he impacted along the way.

[107] Symposium • Interdisciplinary Approaches to Landscape Archaeology Part I

(Sponsored by North American Chapter of Computer Applications and Quantitative Methods in Archaeology [CAA-NA])

This session explores past human-environment interactions through the lens of landscape archaeology. We examine how combining archaeological data with environmental studies, computational tools, and ethnographic insights can enrich our understanding of ancient landscapes. Paleoenvironmental reconstructions, based on the analysis of soil samples, plant remains, and fauna, shed light on ancient landscapes and human-environment interactions. This approach can be integrated with remote sensing techniques such as geophysical surveys, aerial photography, lidar, and satellite imagery to aid in mapping and interpreting complex archaeological sites. Similarly, computational modeling and simulations provide an additional layer of analysis, helping us understand the dynamics of past landscapes, human-environment interactions, and the impact of environmental changes on past societies. Complementing these more quantitative approaches, ethnographic and ethnohistorical studies offer essential insights into how past landscapes were used, or how they continue to be used in contemporary contexts. Throughout this session, we seek to explore these methods through multidisciplinary perspectives. Case studies that demonstrate the power of integrating multiple datasets and methodological approaches are particularly encouraged. By sharing diverse methodologies and theoretical perspectives, this session aims to advance the field of landscape archaeology and develop a more comprehensive understanding of humanity’s impact on the land.

[108] Symposium • US Archaeology at Crossroads Part I: The Obstacles, the Failures, and the Victories

(Sponsored by Government Affairs Committee)

In 2021, members of the SAA's Government Affairs Committee (GAC) began hearing concerns about the current state of archaeology in the USA from the SAA membership. It became apparent that archaeology was at a crossroads as a profession. Stagnant pay, colonial legacies, high tuition, lack of upward mobility, and poor training have led to people leaving the field or choosing not to enter it. Fewer students are enrolling in archaeology classes and majoring in archaeology, and some anthropology departments and archaeology programs have been and may be eliminated. Speakers will discuss the current direction and future potential of archaeological education, employment, the incorporation of descendant community voices, and recent legislative and regulatory decisions/proposals and court rulings at state and federal levels that impact the state of cultural resource management and historic preservation. We will examine ways to transform the current dynamic toward a more ethical, meaningful, and sustainable profession and practice.

[109] Symposium • Sessions in Honor of Dr. Fred Valdez Jr. and His Contributions to Archaeology Part 2

Professor Fred Valdez Jr. has had a long, important career in terms of his own contributions to Maya archaeology and through his direction of projects and institutions. As director of the Center for Archaeological and Tropical Studies (CATS) at the University of Texas at Austin and the Programme for Belize Archaeological Project (PFBAP) he has mentored scores of students at all levels. He has also advised a remarkable number of doctorate and master's degrees as a professor at UT Austin over the past several decades. Fred has also taken on the heavy mantle of directing the Texas Archeological Research Laboratory (TARL) at the University of Texas at Austin. This session brings together papers on the considerable contributions of Fred Valdez Jr. to Maya archaeology and to archaeology in general. This session brings together papers focused on the following topics: novel research presentations on Maya archaeology that Fred has supported and contributed to over many decades, discussions on his pedagogy and mentorship, and complementary special topics on bioarchaeology, geoarchaeology, geophysics, and paleoecology that have been supported by Fred through his leadership at CATS, PFBAP, and TARL. *****This session will include images of human remains.**

[110] Symposium • Retelling Time in Indigenous-Colonial Interactions across North America

In colonial North America, time is often viewed from a top-down perspective that categorizes history into discrete periods, such as the "Spanish" and "American" eras. This approach can suggest a predictable unfolding of events across space, ignoring individual agency and collective action. This session aims to challenge such rigid conceptualizations of time by exploring Indigenous-colonial interactions through three themes: "Blurring the Lines" seeks to challenge temporal distinctions by examining successive waves of colonialism as a palimpsest; "Breaking the Bounds" reconsiders the objective understanding of material culture by providing an emic perspective and exploring diverse meanings that objects have over time; and "Flipping the Script" shifts the traditional narrative from top-down colonial understandings of time to Indigenous experiences at specific moments, including concerns for Indigenous futurity. By addressing these themes, we aim to present a more nuanced understanding of Indigenous-colonial interactions that challenge traditional narratives, highlight the complexity of distinct historical processes, and better account for enduring Indigenous presence across North America.

[111] Symposium • Thinking of Acronyms: A Kohler Obsession? Papers in Honor of Timothy A. Kohler (TAKO)

This symposium celebrates Timothy (Tim) A. Kohler's (TAKO's) archaeological career. His roots were laid in Florida where he studied at McKeithen Village on Weeden Island. His research at WSU refocused on the southwestern United States (SWUS) with the Dolores Archaeological Program (DAP) and at Bandelier National Monument (BAND). Tim's collaboration with the Santa Fe Institute (SFI) highlighted his research on an international and interdisciplinary stage. His modeling research with the Village Ecodynamics Project (VEPI, VEPII-N and -S) explained changes in settlement systems in the Upland US Southwest (UUSS) between AD 600 and 1760. He led the Synthesizing Knowledge of Past Environments (SKOPE) project to improve

accessibility for paleoenvironmental data. He continued to highlight archaeology's importance through his contributions to the Intergovernmental Panel on Climate Change (IPCC) Sixth Assessment Report. In 2022, Tim was elected to the National Academy of Sciences (NAS) in recognition of his outstanding original research achievements. Tim is currently a co-PI on the Global Dynamics of Inequality (GINI) project which studies the development of social inequality. Scholars in this symposium will discuss the significance of Tim's career and how Tim influenced their own, including presenting new research inspired by or building on Tim's work.

[I 12] Symposium • What's Going On in Texas? Current Topics in Texas Archaeology

I envision this symposium as highlighting researchers who are engaging in exciting and new scholarship in the state of Texas, at the graduate, faculty, and contract level. The temporal range and subject matter for this session is left intentionally broad to reflect the diversity of work being conducted in the state.

[I 13] Symposium • Acquiring Status and Power in Transegalitarian and Chiefdom Societies

In this session, we explore the archaeological, ethnographic, and ethnohistoric evidence of the multiple strategies that ambitious leaders in transegalitarian and chiefdom societies employ in order to attain and maintain social status, authority, wealth, and power. Such strategies may include various ways by which political actors accumulate wealth, acquire or create inalienable or prized gifts and sacra, amass and garner surpluses for feasts, create and conduct ritual performances, facilitate collective action, orchestrate warfare, judiciously use force/coercion, and promote privileged access to supernatural powers by way of ancestor cults, secret societies, or other ritual organizations. We argue that aggrandizing leaders in transegalitarian and chiefly societies use diverse and overlapping means to garner opportunities for creating and bending social rules, as well as manipulating accepted political protocols for their own advantage and benefit. The goal is to shed light on the various means that permitted individuals to attain and maintain elevated social status in transegalitarian societies and to secure political power in middle range societies prior to the origin of the state.

[I 14] Symposium • Practice, Theory, and Ethics of Machine Learning in Archaeology

Technological advances have catalyzed scientific innovation and societal change for centuries, but the recent precipitous rise in computing power has introduced powerful new tools at a rapid pace, which can be overwhelming to parse. In particular, the increasing popularity of machine-learning (ML) methods in archaeology has occurred so quickly that many scholars are left with questions regarding how, why, and with what datasets these methods should be used. This symposium explores the practices, theories, and ethics linked to emerging ML methods in archaeology. We showcase new and innovative approaches to the topic; explore the practical applications of ML that emphasize enhancing data quality, site preservation, and synthesis; discuss publishing and code sharing; and provide a forum to discuss the ethical use of ML in archaeology.

[I 15] General Session • Urbanism and Social Complexity in East Asia

[I 17] General Session • New Research in South American Bioarchaeology

[I 18] General Session • Archaeology of the Gulf Coast in Mesoamerica

[I 19] General Session • Textiles and Feathers around the World

[I 20] Forum • Archaeology of Food and Foodways: New Aims, Directions, and Methodologies

This forum explores a cross-section of emerging trends and new perspectives on the archaeology of food and foodways. Ancient food studies comprise a field of inquiry that touches on all specializations in archaeology, including artifacts, biochemical and microbotanical residue analysis, archaeobotany, zooarchaeology, isotope analysis, studies of features and activity areas, experimental archaeology, and ethnographic research. Significant advances in environmental archaeology and archaeological science have enabled us to view and study human relationships with food in more depth and detail than ever before. Meanwhile, novel interpretive

approaches have rendered new foodways visible and changed our understandings of food, a substance deeply imbued with cultural, economic, spiritual, and political significance. Scaffolding from this work, scholars and culinary specialists alike have applied archaeological findings to such domains as public policy (e.g., agricultural sustainability), culinary arts (e.g., the revitalization of food traditions), and dietary regimes (e.g., the decolonization of diets). In this forum, we explore diverse perspectives on ancient foodways, from a number of geographical regions, material analyses, and interpretive approaches.

[121] General Session • Migration, Settlements, and Technological Exchange around the World

[122] General Poster Session • Digital Archaeology Part 2: Landscapes and Spatial Analysis

[123] General Poster Session • Digital Archaeology Part 3: Remote Sensing and Geophysics

[124] General Poster Session • Home Sweet Home: Household Archaeology

[125] General Poster Session • Not-So-Ancient History: Ethnography and Historical Archaeology

[126] Poster Symposium • *MW Behavioral Ecology in the Mountain West

The application of behavioral ecology to archaeological research problems was pioneered in the Mountain West. While the approach began with a focus on accounting for variation in subsistence behaviors, it has since expanded to a wide range of topics including habitat modification, territoriality, inequality, and peace. Here we convene current scholars working in this area to report their recent findings on a broad range of topics representing the latest advances in the field.

[127] Poster Symposium • Digitizing the Past: Studying Ancient Ground Stone Tool Kits Using Modern Technology

Ground stone tools (GST) provide unique insight into cultural behaviors, activities, and changes in technological traditions through time. GST research has the added potential to highlight behaviors spanning from individual manufacturers to regional insights into tool use. Our research highlights the importance of GST in everyday toolkits of the earliest North Americans from the Hell Gap National Historical Landmark, Guernsey, Wyoming, through the use of close-range photogrammetry (CRP), 3D modeling, and microscopy techniques. Utilizing these methods, our research results in the development of digital archaeological data that can be shared with others and contribute to long-term conservation and preservation in the archaeological record. This digital archaeological data can be used in the future to facilitate the interpretation and reconstruction of past lifeways and human interactions with stone tools.

[128] Poster Symposium • The Future of Geoarchaeology: Student Research and Insights

(Sponsored by Geoarchaeology Interest Group)

Students of geoarchaeology are the future of the discipline. These emerging professionals are at the forefront of developing new research questions, utilizing cutting-edge methodologies, and implementing innovative analytical approaches to answering archaeological questions about human activity and human-environmental interaction in the past. It is only fair to provide a space to showcase these rising professionals. This poster session will do just that and bring together students from across the country to highlight recent advances in geoarchaeological research in all aspects of the field, including geophysics, geomorphology, geochronology, geochemistry, GIS and soil science. Students in all aspects of geoarchaeology are encouraged to submit, including development of archaeological site sensitivity models based on geomorphologic assessments, near-surface geophysical prospection, deep subsurface testing techniques below the depth of traditional shovel testing, detailed stratigraphic analysis of archaeological excavations, geochemical and petrographic approaches to raw material sourcing, paleoenvironmental reconstruction, and human-environmental interaction. In addition to traditional geoarchaeological approaches, interdisciplinary and multiproxy research are highly encouraged. Both undergraduate and graduate students are welcome and encouraged to submit.

[129] Poster Symposium • The Housepit 54 Project at Bridge River, British Columbia: Multidisciplinary Contributions to Household Archaeology

Excavations since 2012 at Housepit 54, Bridge River site, south-central British Columbia, have revealed a sequence of 16 intact stratified anthropogenic floors and seven roof deposits. Each floor is characterized by intact and minimally disturbed distributions of lithic artifacts, bone tools, faunal and floral remains, and features. With funding from the National Endowment for the Humanities and the National Science Foundation, the project has developed multidisciplinary research into lithic technology, zooarchaeology, paleoethnobotany, sediment micromorphology and chemistry, and ancient DNA. These studies address a wide range of topics with common themes of formation processes, household histories, subsistence ecology, technological strategies, canid management, and sociopolitical relationships. This poster symposium provides a broad overview of research at Housepit 54 offering new insights into Indigenous history and cultural variation in the context of a large Interior Pacific Northwest village.

[155] General Session • Educating the Public and Professionals in Archaeology

[156] General Session • Paleo- and Neolithic in Europe and the Mediterranean

[157] General Session • South American Landscapes and Human-Environment Relationships

[159] General Session • Community-Engaged Archaeology in Latin America

[160] General Session • Investigating Paleoclimate around the World

[161] Forum • Protecting Archaeologists: Safety at Work, School, and Beyond

(Sponsored by Women in Archaeology Interest Group)

Safe working conditions are often on the minds of archaeologists active in the field, but what of our safety in other archaeology-adjacent settings? At work, at school, at meetings, and in the field, archaeologists may encounter a number of risks to their physical, personal, or even emotional wellbeing. The purpose of this forum is to provide discussants and members of the audience a safe space to share the types of threats experienced in archaeological and archaeology-adjacent settings and to discuss best practices for preventing potential issues and managing existing safety concerns. We welcome participation from members of all identities and backgrounds, especially those from marginalized sectors within the field. In this forum we will discuss these topics and identify ways to work actively toward solutions.

[162] Forum • Remembering Patty Jo Watson: Our Recollections

(Sponsored by HAIG)

Professor Patty Jo Watson, who died August 1, 2024, was renowned for an integration of archaeological field evidence, ethnographic data, and thoughtful theoretical analysis. She was also well-known for collaborating with multidisciplinary scholars and mentoring many students and colleagues in both Old World and New World archaeology. Several colleagues will present their recollections of her professional accomplishments and stories of her energy, intelligence, and collegiality (with photos, we hope). These will be followed by an opportunity for attendees to share their memories of Pat as a field excavator, mentor, teacher, and friend. These comments and photos will be recorded by a member of the SAA History of Archaeology Interest Group for inclusion in the SAA YouTube “Archiving the Archaeologists” video project. This session will be an informal celebration of the life of one of the profession’s most remarkable and influential scholars. All are invited to share their memories and photos to honor her legacy.

[163] Lightning Round • Commemorating the B’uluk tun of His Road-Entering: Papers in Honor of George Stuart

This session celebrates the legacy of George Stuart, who was born more than four *k’atuns* ago and who “entered the road” *b’uluk tun* ago. Those who knew George remember his kindness, his particular perception of the world, and his passion for maps. George’s career in the Maya area began in the 1970s with his participation in the early stages of archaeological work at Coba with William Folan, as well as the first

explorations of Balankanche Cave, and excavations at Dzibilchaltun with E. Wyllys Andrews IV. As associate editor of *National Geographic Magazine* (1960–1998), George was instrumental in supporting several important projects in the Maya area and in Mesoamerica more generally. Following his retirement, he devoted his time to teaching and public education by offering courses in lifelong learning institutes and prisons and created the Boundary End Archaeology Research Center in Barnardsville, NC. This session brings together George's colleagues and those impacted by his legacy to discuss the outcomes of his work in Yucatán and the seeds he sowed beginning over a half century ago.

[165] Symposium • Beyond Pre-Clovis: Human Occupations in the Americas during the Last Glacial Maximum and the Perpetual Debate

The peopling of the Americas is an ongoing debate that has been stuck for decades in the “*Clovis-first*” stigma. It is now predominantly accepted by archaeologists that humans were on the continent before 13,000 years ago. However, the timing of the first human migrations into the Americas is still debated, particularly whether it happened during or before the Last Glacial Maximum (LGM), as well as their migration routes and chronologies (single or multiple waves of human dispersal). Evidence for early human migration (< 18,000 years ago) comes from archaeology, anthropology, linguistics, paleogenomics, and paleontology. Besides piquing the curiosity of academics and the nonacademic audience, this topic can easily provoke disagreements within the archaeological community. Therefore, we believe it is important to communicate the evidence for LGM human occupation of the Americas more effectively among archaeologists, since it persists neglected despite the increase in evidence from North to South America. This symposium aims to bring together researchers to present their work on the early peopling of the Americas (LGM or pre-LGM) and to provide a platform for discussion and networking among different specialists, which can lead to new collaborations and multidisciplinary studies on this topic.

[166] Symposium • Repositioning Altar de Sacrificios on the Ancient Maya Landscape

This session details the results of recent investigations conducted by the Proyecto Arqueológico Altar de Sacrificios (PAALS). Located at the confluence of the Salinas and Pasión Rivers along the modern-day border of Guatemala and Mexico, the ancient Maya site of Altar de Sacrificios is uniquely situated with strategic access to points far beyond its sandy shores. Despite its geographical and historical importance, this site has not featured prominently in recent narratives about the ancient Maya. After more than 60 years since the Peabody Museum's initial excavations at Altar de Sacrificios, a new program of archaeological research is bringing this site out of the shadows to reevaluate its role and contributions as a place of interregional exchange, local innovation, and social interaction within the greater Maya world. PAALS research primarily focuses on questions of inequality and human wellbeing as they pertain to domestic lifeways, environmental change, and power dynamics throughout the Late Preclassic and Classic periods (ca. 300 BCE–900 CE). Papers in this session address the settlement history, epigraphy, and geomorphology of this riparian landscape, and include recent studies of recovered plant and animal remains, ceramic and lithic artifacts, and osteological and isotopic analyses of human bone.

[167] Symposium • Stable Isotope Analysis in Global History

Stable isotope studies are at the forefront of archaeological research, engaging with a broad array of materials, from seeds, human and animal remains, ceramic residues, to soils. These data are used to address engaging questions, such as the spread of animal and plant domestication, migration, foodways, disease transmission, and environmental pollution and toxicity. This session aims to bring together scholars who are utilizing stable isotopes in novel ways, whether that is bringing the method to new regions or time periods, exploring interdisciplinary applications, or developing isotopic methods. The topic is purposefully broad as we hope to bring together scholars working on diverse geographic, temporal, material, and theoretical questions. By showcasing the global and diachronic applications of stable isotope research, this session will provide fruitful conversations that can help spark the next creative and novel isotopic paradigm in archaeology.

[168] Symposium • On Both Sides of the Atlantic: Historical Archaeology of Rural Modernization from the American and European Traditions

This session aims to bring together different archaeological perspectives on the effects, direction, and

meaning of the modernization process in rural areas on both sides of the Atlantic (sixteenth–twentieth centuries). This collaboration is a direct consequence of the historical nature of this process, inserted in global capitalist dynamics of “back and forth” throughout the Atlantic Ocean, which have shaped the contemporary rural areas on both sides. To this end, we propose a journey through a relevant selection of case studies of different scales and chronological ranges that contribute to the exchange of ideas and experiences on the archaeology of these spaces. The so-called modernization has diverse translations in rural areas, which very often have been elusive from the historical and archaeological narratives defining modern and contemporary history. Archaeology can help qualify this variability and rescue aspects largely ignored by the great historical narratives while examining the effects on current local communities. Rural areas are also particularly productive spaces for recovering the material memory of social and economic transformations of cultural landscapes. From the intense processes of abandonment to alternative uses of natural resources or social and political experimentation, the rural area preserves the traces of changes and its possible responses.

[169] Symposium • Recent Investigations in Maya Archaeology, Epigraphy, Bioarchaeology, and Zooarchaeology by the Holmul Archaeological Project in Northeastern Peten, Guatemala

Over the last 24 years, the Holmul Archaeological Project has contributed to our understanding of the Preclassic and Classic period Maya sites of Cival, Holmul, and La Sufricaya. These sites lie in the Holmul region, located in northeastern Petén, Guatemala, and were occupied between 1000 BC and AD 1040. Throughout the region’s occupation the center of power shifted between these three sites, demonstrating how political regimes changed locally in response to major political changes in the Maya Lowlands. While major centers like Tikal often garner the most attention, the centers of the Holmul region played an integral part in several major *conjunctures* in the long-term history of the Maya Lowlands, including the Teotihuacan entrada of 378 CE and the rise of the Kaanu’l hegemony, around 520 CE. This symposium will present recent and ongoing work in the Holmul region of Guatemala. Topics will include architectural and political history, epigraphy, ceramics and lithics studies, bioarchaeology, and zooarchaeology. *****This session will include images of human remains.**

[170] Symposium • Rising Up against Authority: Archaeological Approaches to Rebellion

Rebellions, either against external powers or internal authorities, represent a recurring phenomenon from antiquity to the present. Famous examples include, among others, the ancient slave revolt led by Spartacus, the Batavian rebellion against the Roman Empire, the Pueblo Revolt against Spanish colonial authorities, or the American Revolution against the British. While archaeology has a long tradition of studying rebellions in their various manifestations, particularly in contexts with written sources, it has only been relatively recently that more explicitly theoretical approaches to the topic have been developed. In this session, we aim to bring together papers that approach the materiality of rebellions in multiple ways: from broader theoretical and methodological reflections to an analysis of specific case studies, and from violent uprisings to more veiled strategies of resistance. The session has a markedly comparative spirit; thus, we welcome presentations from any time period and region across the globe. The aim is to rethink the ways in which archaeologists can contribute to the study of a theme that continues to be as topical as ever in our current world.

[171] Symposium • Ceramics and Archaeological Sciences

(Sponsored by Society for Archaeological Science)

This session aims to foster interdisciplinary and international interactions among scholars and practicing potters alike to push the boundaries of what can be understood about ceramics, the humans that make and use them, and their many material/ecological/social/aesthetic/cosmological/political interactions. As such, our session welcomes a wide variety of papers, particularly those that (1) focus on the presentation of new or improved archaeological, archaeometric, experimental, art historical, or ethnographic methods and techniques for the analysis of ceramic materials. We are particularly interested in the application of AI methodologies in the analysis of ceramic data; (2) seek to evaluate data derived from the application of these methods in archaeological, ethnoarchaeological, art historical, ethnographic, and experimental settings *from around the world*, using diverse theoretical approaches, to answer a wide variety of questions, ranging from exchange and provenance to the economic organization of production and consumption, communities/constellations of practice, landscape perceptions and utilization, processes of identification,

ritual, social and political organization, etc.; or (3) focus on the theory and practice of ceramic analysis and interpretation, especially in collaboration with Indigenous, descendant, and local communities, as well as in the context of heritage, museum, or public archaeology projects.

[172] Symposium • Emplacement and Relational Approaches to the Ancient Americas

This symposium sets out to analyze the emplacement of past peoples and their artistic and material creations across the ancient Americas (Abya Yala). Emplacement, as the sensuous interrelationship of body-mind-environment, provides a critical lens through which to consider how humans alongside a complex ecology beings and things together created the archaeological traces of past places. Spanning multiple regions of Mesoamerica and South America, this intercontinental dialogue seeks to compare placemaking practices among a range of precolumbian civilizations. In light of animist worldviews in Native American societies, this session emphasizes the agencies of diverse kinds of beings in the formation of past places, such as plants, animals, minerals, landforms, waterways, weather, and celestial bodies. Given the increasing awareness of interregional mobility in the Indigenous Americas (like the deep-time movement of corn and cacao), this session adopts expansive, translocal perspectives to illuminate ancient networks of emplaced knowledge around the continent.

[173] Symposium • Evolutionary and Ecological Perspectives on Oceanic Archaeology: Papers to Honor the Contributions of Melinda Allen

How humans change and are changed by their environments are foundational questions of archaeology, especially in the archaeology of Oceania. While these questions are simple, providing better, more historically and empirically grounded answers to these questions has involved considerable theoretical and methodological innovation. Melinda Allen has been at the forefront of these innovations for over three decades, a career that has ranged from the Bishop Museum to the University of Auckland. Dr. Allen is widely recognized for her unparalleled empiricism and detail, which have resulted in substantial contributions to chronology building, the process and drivers of East Polynesia voyaging, the development of anthropogenic landscapes, and the evolution of political systems. This session aims to highlight the contributions of Dr. Allen on the field and the ways her work continues to be instrumental in directing the future of diverse ecological and evolutionary frameworks in Oceania. The papers in this session speak to Dr. Allen's broad contributions to the field, ranging from analyses of regional agricultural adaptations to environmental drivers of large-scale social processes.

[174] Symposium • New Approaches to the Intractable Problem of Dating Rock Art

This session will feature recent advances being made around the world in direct, indirect, and contextual dating of pictographs, petroglyphs, and other forms of human rock markings. Pictographs in caves or on rockshelter walls and petroglyphs in various outdoor settings have the potential to provide remarkable insights into the visual worlds of early human cultures globally. Extraordinary developments in various scientific fields have enabled researchers to progress age estimations for the earliest human art-making. The ability to understand nondestructive pigment use in symbolic behaviors also engages contemporary community interest. Scientific innovation necessitates collaborative approaches to ensure these highly technical methods are deployed in culturally appropriate and methodologically rigorous ways. Advances in scientific methods are often presented in the absence of theory: meaning that these new—especially old—dates create debate in the public domain rather than through scientific due process. This session highlights the scientific advances being made in understanding deep-time and more recent symbolic behaviors across the planet and provides a forum for debating how science must align itself with theoretically grounded archaeological interpretations as well as Indigenous perspectives.

[175] Symposium • The Far-Reaching Influence of Steven L. Kuhn

Steven L. Kuhn is not one to brag, so participants in this session aim to make up for it, discussing the wide-ranging influence of Kuhn's oeuvre and mentorship. Steve's legacy is particularly felt in the domains of lithic technology, hunter-gatherer studies, human evolution, and Paleolithic archaeology. Throughout his career, Steve has maintained an active field and research program, in countries such as Italy, Israel, Turkey, Serbia, China, and Morocco. Due to this extensive experience in many regions of Africa and Eurasia, combined with

an otherworldly ability to accrue, retain, and remix knowledge, his work has touched on many of the “big” questions at the heart of human evolutionary studies. This work rests on a solid foundation; Kuhn is a master at bridging the theory-data divide, a skill to which the majority of his students and contemporaries can only aspire. However, guided by Steve’s mentorship, and bolstered by his humor and compassion, many of us have endeavored to build upon the far-reaching, and quite varied, legacy of Steven L. Kuhn. This session will exemplify that legacy and his influence among his students and collaborators.

[178] General Session • Historical Archaeology in the Southeastern United States

[179] Symposium • *MW A New Look at the Southern Rocky Mountains: Crossroads of Western North America

The Southern Rocky Mountains, stretching across the length of Colorado and into bordering states, form an impressive wall across the continent. Yet, the region contains resource-rich, high-altitude basins and massive snowcapped mountain ranges, made accessible by dozens of passes and divides. Once conceptualized as a cultural barrier and a marginal environment, we now know that Indigenous peoples intensively occupied these basins and peaks since at least the late Pleistocene. The Southern Rockies contain a diversity of cultures and lifeways, with groups occupying the mountains on a seasonal basis, in some cases living there year-round, and others migrating into the region from every direction. Given our meeting’s presence in Denver, we aim to honor this region’s ancient Native peoples and their descendants by bringing together scholars conceptualizing the Southern Rockies in new ways. This includes new narratives of early Paleoindian occupations, discussions of rock-walled game drives found above the clouds, stories of cultures migrating across the Rockies during the Holocene, arguments for longtime connections between the mountains and surrounding lowlands, and collaborative scholarship with the many stakeholders and descendant communities found here today.

[180] Symposium • From the Underworld to the Heavens: Expanding the Study of Central Jalisco’s Past

The last major synthesis on the archaeology of the Tequila valleys in Central Jalisco took place over 15 years ago and was heavily focused on the Late Formative / Classic period public architecture. Research has since diversified with studies of residential areas, labor organization, art and visual culture, tools, cuisine, and human and animal remains. This session brings together established and emerging scholars to present results on recent excavation, survey, and laboratory studies that advance our understanding of the region beyond the Late Formative and Classic periods. *****This session will include images of human remains.**

[182] Symposium • Scaling New Heights: Recent Advances in Andean Zooarchaeology

(Sponsored by Zooarchaeology Interest Group [ZIG])

Zooarchaeology in the Andes investigates the relationship between ecozones that crisscross extreme elevation differences of the region. The subfield of Andean zooarchaeology has been steadily increasing in recent decades, strengthening understanding of human-animal interactions, animal domestication, environmental adaptations, and sociocultural developments in diverse ecological zones with rich cultural history. This session seeks to highlight the substantial contributions of Andean zooarchaeology, illustrating how studies from this region have advanced not only broader zooarchaeological methodologies but archaeological practice as a whole. The session aims to foster a dialogue between senior and junior researchers specializing in Andean zooarchaeology. By bringing together recent findings and ongoing research projects, we hope to underscore the pivotal role of Andean zooarchaeology in shaping contemporary zooarchaeological practice. Participants are invited to present case studies, theoretical discussions, and methodological advancements. This session will not only summarize the achievements of past and current research but also explore future directions for integrating Andean zooarchaeological data into the global framework. *****This session will include images of human remains.**

[183] Symposium • Geoarchaeology within the Context of Cultural Resource Management (CRM) Today Part I

(Sponsored by Geoarchaeology Interest Group)

Part I: In the United States, professional geoarchaeologists have conducted investigations in cultural resource management (CRM) for more than 40 years. Some work as independent subcontractors, others as part of CRM, environmental, or engineering firms. In recent years, requirements for geoarchaeological analyses and fieldwork (e.g., buried archaeological site sensitive modeling, deep testing) have increased significantly although demands and regulatory standards and practices still vary widely across the country. The trend and momentum continue to accelerate indicating trained geoarchaeologists will continue to be in demand. This session highlights the work of contemporary CRM geoarchaeologists who are actively practicing research and fieldwork. Their papers illustrate the many challenges and archaeological research questions that can be addressed by the integration of the geosciences and archaeology and the benefits of this integration for any archaeological investigation and successful project management and completion.

[184] Symposium • Theorizing Warfare: Global Perspectives on Defense and Fortification

The archaeological study of warfare remains contentious despite decades of expanding our methods and models. While prominent scholars such as the late Larry Keeley have pushed this vital area of study into the spotlight, conflict remains undertheorized in many places. In addition, warfare in the past is under-recognized and often treated in isolation as an apex of historical and cultural contingency rather than a fundamentally problem-oriented activity. Identifying fortified sites and defensive landscapes of the archaeological past remains controversial and often elicits skepticism. Fortunately, a path forward has endured the cycles of contention. A global, comparative perspective of defense and fortification is fundamental to understanding the dynamic and universal cultural expression of warfare. Indeed, the clearest road toward a cohesive theory of warfare is a multidisciplinary approach incorporating diverse perspectives from ethnography, historical records, artwork, military science, and more. War is life, death, extremity; a totalizing phenomenon demanding our full engagement. With the presentations and discussions in this session, we aim to advance global comparisons of defense and fortification in the archaeological record, assess the methods and approaches currently utilized in this area of study, and progress in our search for a cohesive archaeological theory of warfare. *****This session will include images of human remains.**

[185] Symposium • Behind the Scenes and on the Stage: The Women Who Shaped Archaeology

(Sponsored by WAIG - Women in Archaeology Interest Group)

This session aims to reflect on the overlooked contributions of women to archaeology from the early nineteenth to late twentieth century. From art collectors to illustrators to professors, women have played a forgotten role in the development of archaeology, shaping the discipline through various activities beyond writing about new discoveries, fieldwork, and novel theories. The session will address two key issues: the intersectionality of women's experiences in archaeology, considering how gender, sexual identity, class, ethnicity, and other factors influenced their roles; and the multifaceted nature of archaeological practice, where women's contributions extended to behind-the-scenes work in archaeological societies, fieldwork documentation, and public dissemination of knowledge. Additionally, the session will explore women's professional presence in museums, universities, and heritage offices, examining whether they worked in the spotlight or behind the scenes. Ultimately, the goal is to bring visibility to female archaeologists' significant, yet often unacknowledged, impact on the discipline. Sponsored by WAIG and the Herstory project, this session seeks to broaden the understanding of archaeology as a diverse and inclusive practice.

[186] Symposium • Four Decades of NAGPRA Part I: Accomplishments and Challenges

Now in its fourth decade, the Native American Graves Protection and Repatriation Act (NAGPRA) remains one of the most important legislative acts shaping the discipline of archaeology today. To adequately discuss the range of topics and provide examples and case studies incorporating shifting discourses of repatriation, policies, and collections management concerning Ancestors and their belongings subject to NAGPRA, the organizers have developed a three-part series for this year's meeting. This session, Part I, focuses primarily on the accomplishments made by practitioners and tribal partners as well as discussing the challenges faced in

implementing NAGPRA. Topics range from compliance-focused efforts, especially in light of the recently updated NAGPRA regulations, to the rights of tribal nations in making the best decisions for their Ancestors and cultural heritage materials. The session will feature a Q&A period in order to discuss these efforts with session attendees.

[188] General Poster Session • Boots on the Ground: Surveys and Preliminary Investigations

[189] General Poster Session • Landscape Archaeology and Settlement Patterns

[190] General Poster Session • Mobility, Migration, and Movement

[191] General Poster Session • Rock and Roll! Stone Technology and Lithics Analysis

[192] General Poster Session • What's on the Menu? Part 1: Paleoethnobotany and Materials Analysis

[193] General Poster Session • What's on the Menu? Part 2: Zooarchaeology, DNA, and Stable Isotope Analysis

[194] General Poster Session • Where We All Started: Childhood

[195] General Session • Recent Research in Coastal Peru

[196] Poster Symposium • Machine-Learning Approaches to Studying Ancient Human-Environmental Interactions

(Sponsored by Co-sponsored between Zooarchaeology Interest Group and the Quantitative Methods & Statistical Computing in Archaeology Interest Group [QUANTARCH])

Archaeologists have long used quantitative statistical analyses to understand past human-environmental interactions on a wide range of topics, including past foodways, landscape use, and social organization. Zooarchaeology and environmental archaeology, in particular, are well positioned to tackle these issues as analyses of faunal remains, climatic variability, and landscape dynamics, among other things, provide critical insights into past peoples and societies. Moreover, many of these analysts have begun using cutting-edge machine-learning statistical techniques to answer research questions on these same topics. The goal of this session is to highlight the applicability and analytical power of machine-learning statistical approaches to answering questions about long-term human-environmental interactions. These new tools have the power to significantly contribute to and help answer a diverse array of theoretically informed research questions.

[198] General Session • Education in the Field and in the Classroom

[199] General Session • Latin American Archaeology . . . Now with Lasers!

[200] General Session • Ritual Space and Practice throughout Latin America

[201] Symposium • Exercising Freedoms: Historical Archaeology of the African Diaspora in Latin America

Historical archaeology in Latin America is in the midst of a reassessment of African descendant presences, modes of life, and experiences. In this session contributors offer case studies of African diaspora populations living under diverse degrees of control or dependency, ranging from enslavement under direct royal control to majority African descendant populations engaged in self-organization. Incorporating experiences sometimes described as “marronage” and in other sources as societies of “Free Blacks,” and exploring the degrees of autonomy available to enslaved people under Spanish law and variable colonial conditions, papers in this session illustrate the diversity of experiences within African diaspora populations in Latin America. Participants encourage archaeologists to reconsider the intertwined histories of African descendant and

other subaltern groups, such as Indigenous peoples. The session emphasizes the continuing connections between these histories and descendant populations today, who are often excluded from heritage discussions under national policies, and considers ways to connect archaeological research with contemporary people.

[202] Symposium • Images of the Uinta Fremont (AD 0–1300)

The Uinta Fremont resided in what is now the northeastern corner of Utah between AD 300 and 1300. They participated in the corn lifeway of Pueblo cousins to the south, but unlike peoples in the Four Corners, less is understood about the ideology, identities, and social history of these people. Research in this session centers on the rock imagery (aka rock art) of the Uinta Fremont as a lens through which to focus archaeological attention on these subjects.

[203] Forum • Cultural Heritage vs. the State in El Salvador

Seldom does a modern authoritarian politician resort to institutional attacks on the nation's cultural heritage as a means of elevating his own power, but we live in strange times. On 1 June 2024, Nayib Bukele was inaugurated as the president of the Republic of El Salvador for a second five-year term. Bukele imposed several changes immediately. On 26 June, the presidency of the Republic announced a reform of the Special Law for the Protection of Cultural Heritage (originally passed in 1993). Cultural impact fieldwork and research would now be managed by the newly created Directorate of Construction Procedures, attached to the presidency. The next day, 27 June, Bukele ordered the Minister of Culture to dismiss more than 300 employees. The Department of Archaeology lost nine employees, leaving only five Salvadoran archaeologists to continue their difficult work. The problem is exacerbated by the presidency's hostile attitude toward foreign archaeologists who apply to conduct research in the country. The panelists represent the interests of the national and international community of Salvadoran archaeologists. The purposes of the forum are to provide clear information to SAA colleagues on this deplorable situation and to elicit comments and support regarding possible courses of action.

[204] Forum • Personal Perspectives on the Contributions of Kathleen Bragdon to the Historical Anthropology and Archaeology of the Northeast

Kathleen J. Bragdon's scholarship will remain a vital body of work for all of those who study the history and culture of the Indigenous peoples of New England. As an historical anthropologist and ethnohistorian who combined archaeological, linguistic, ethnographic, and historical evidence to re-create colonial-era Native American societies, Bragdon's work is a testament to the cross-disciplinary approach and to the importance of recognizing the priorities of contemporary communities. Colleagues and former students will provide their perspectives on the importance of her career and her contributions to the historical anthropology and archaeology of the Indigenous Northeast.

[205] Forum • The Future of Greater Nicoya: What Questions Should We Be Asking?

In spite of decades of archaeological research, scholars working in the archaeological subarea known as Greater Nicoya seem unable to achieve consensus on a variety of fundamental questions relevant to the region. Questions that were being asked a half century ago remain unanswered, in no small part because many modern researchers seem unable to escape the shadow of inconsistent ethnohistoric accounts emphasizing migration from Mesoamerica—to say nothing of speculative-but-influential readings of these accounts—that seem to demand culture-historical explanations. As a consequence, interesting but ultimately unanswerable questions seem to distract researchers from asking other, potentially more productive questions that might be more easily answered based on archaeological evidence, such as questions focusing on the effects of environmental change in a very tectonically active region, or material evidence of social change and networks both within and beyond the boundaries of Greater Nicoya, or even questions about basic chronology. Is the concept of Greater Nicoya even meaningful in the twenty-first century? This forum will attempt to identify priorities for future work in Pacific Nicaragua, northwestern Costa Rica, and neighboring areas.

[206] General Session • Indigenous Archaeology in the Pacific Northwest

[207] Symposium • Beyond Academia: Zooarchaeological Case Studies from CRM and Other Nonacademic Spaces

(Sponsored by Zooarchaeology Interest Group)

Modern zooarchaeology straddles the line between the academic and nonacademic worlds with significant work being done by professionals working in both areas. Despite increased interest in the specialty from both academic and nonacademic archaeologists, there still exists a gap between the two worlds. By highlighting work completed in nonacademic spaces alongside work that is strictly academic, we can begin to close this gap by building working relationships between academic and nonacademic zooarchaeologists. A companion to the “Beyond Academia” forum from the 2024 annual meeting, this symposium highlights zooarchaeological work that is completed in CRM and other nonacademic spaces. Through case studies and data analytics, the goal of this symposium is to illustrate the significance of zooarchaeological data outside of the academic institution.

[211] Symposium • Footprints and Footwear

Worldwide, fossil human footprint site discoveries are accelerating, with new discoveries in Europe, on the Cape Coast of Africa, and the Americas. Footprint evidence is improving our knowledge of human presence, behavioral interactions with extinct megafauna, and human migration. This is particularly true of the Americas where recent dating of human footprints to the Last Glacial Maximum has fueled controversy about the peopling of the Americas. This session will take a broad perspective on this new field of ichno-archaeology and will invite participants from Europe, Africa, and the Americas to share knowledge of footprints. We invite contributions from the fields of biomechanics, experimental footprint studies, and dating of footprint sites and combine them with experts in perishable materials and ancient footwear. We will adopt an innovative meeting style, accepting not just Western science-based abstracts but also Indigenous knowledge and viewpoints on the footprint record so that they can share their perspective on this type of evidence, its interpretation, and cultural importance. Funds will be available to support some participation of European experts and those from nonacademic Indigenous backgrounds. We plan an open-access book based on contributions in due course.

[212] Symposium • Archaeology in Color: Undergraduate Voices on Their Time in the Discipline

Despite the talent, passion, or interest of undergraduates of color in archaeology, each of our speakers—and many students like them—have still had to meticulously pick through class rosters to find even one other person of color in their courses. The lack of diverse perspectives in the classroom can reinforce stereotypes and stifle cultural understanding. Every perspective is invaluable, yet in archaeology our perspective is often limited to White, even as we study people and identities from across the globe. From the practices of accessibility, ceramic analysis, and Indigenous archaeology to the politics of representation, undergraduate mentorship, and knowledge production, these students of color critically examine their lived experiences as undergraduates. In doing so, they share how they hope to see the field change—and change it themselves—with the help of working archaeologists.

[213] Symposium • The Social and Environmental Context for Early Metalworking in Central Thailand

In recent decades, archaeological research in central Thailand has played a prominent role in revealing the prehistory of Southeast Asia. Thai and foreign teams have collaborated in its study, including the Thailand Archaeometallurgy Project (TAP), a joint project between the Thai Fine Arts Department and the University of Pennsylvania Museum. While excavations concluded some time ago, research has continued on materials from three TAP sites ranging in date from Neolithic to Iron Age in the Khao Wong Prachan Valley, Lopburi Province: Non Pa Wai (NPW), Nil Kham Haeng (NKH), and Non Mak La (NML). The sites all contain evidence of copper production exploiting local copper reserves. This session presents research that further our understanding of the sites and the region. Presentations include results of a dating program of the complex stratigraphy of deep sondages at NPW, providing chronological context for other analyses; a possible copper commodity “currency”; human bioarchaeology and stable isotopy; and charcoal analysis, exploring fuel usage and forest management practices. An examination of Lopburi Plain settlement patterns

provides a regional overview. Taken as a whole, these presentations contribute to understanding of the social and environmental context for copper smelting and utilization in central Thailand and mainland Southeast Asia.

[214] General Session • Arctic Archaeology

[215] General Session • Bioarchaeology in Europe

[216] General Session • Historical Archaeology in the Midwestern and Northeastern United States

[217] General Session • New Discoveries and Interpretations in the Northeast and Mid-Atlantic United States

[218] General Session • Recent Advances in California Archaeology

[219] General Session • Southwest Asia and the Levant in the Last 5,000 Years

[220] General Session • The American Southwest from 1500 through Today

[221] Forum • (Re)Queering Heritage Futures

This forum is born from the multiple intersectional positionalities we inhabit as archaeologists. From interpretations of the past to contemporary discussions of heritage and identity, questions of gender and queerness are still treated as separate or simply neglected from mainstream archaeological discourse. This is why we would like to start the conversation by asking ourselves: Why are we afraid of gender? Why does identity and heritage matter in archaeology and queer studies? Thus, by exploring the intersections of queerness, heritage, and archaeology, this forum embraces the discipline's inseparability from identity and its political capacity to dialogue with past and prospective futures. This forum brings together multiple perspectives to explore how interpretations and depictions of queer identities have evolved, highlighting both the resistance to and the necessity for more reevaluations. It also delves into the lived experiences of marginalized identities in fieldwork, emphasizing the importance of intersectionality, queer approaches to understanding the past, queer discourses of heritage-futures, auto-ethnography, and solidarity in transforming archaeological practices. By fostering dialogues on reclaiming queer heritage, the forum aims to continue a conversation leading to dismantling dehumanizing forces within academic and fieldwork settings and advocating for more equitable and representative approaches.

[222] Forum • Repatriation, Restitution, Return: Navigating the Ownership, Stewardship, and Ethics of Cultural Heritage Collections

During the past two decades, attitudes regarding the ownership and stewardship of international archaeological and ethnographic objects have changed drastically. Institutions as well as individuals are now acknowledging the violent history of war and colonialism attached to many collections. Museums and universities are actively responding to the need to implement NAGPRA policies, address international objects with problematic histories, and to decolonize curatorial practice. In this evolving context, what are the emerging solutions for both short- and long-term stewardship of cultural objects? How are new approaches and ethics being taught and applied? How do efforts to repatriate or voluntarily return cultural heritage affect our relationships with nations and communities, and how are these efforts perceived by those seeking the return of their heritage? What is the relevance of these issues for the archaeological community? This forum will explore these questions through examples and case studies, examining the shifting discourses of ownership and stewardship, repatriation and voluntary return, professional ethics, diverse definitions and practices for decolonization, and other new directions for archaeology.

[223] General Poster Session • Archaeometry and XRF/pXRF Analysis

[224] General Poster Session • Climate and the Environment

[225] General Poster Session • Education and Pedagogy

[226] General Poster Session • Ethics and Repatriation

[227] General Poster Session • Museums and Collections Management

[228] General Poster Session • The Original Networking Opportunities: Trade and Exchange

[229] General Session • African Archaeology from Coast to Coast

[230] General Session • Archaeology of the Rocky Mountains

[231] General Session • Communities of Practice in Mesoamerica

[232] General Session • CRM and Heritage Consulting in the United States

[233] General Session • Cruising Right Along: Recent Advances in the Archaeology of the Caribbean

[234] General Session • Experimental Archaeology from around the World

[235] General Session • Foodways from around the World

[236] General Session • Lithics in Latin America

[237] General Session • The Future of Archaeology: Ethical Conversations and Concerns from around the World

[238] Poster Symposium • *MW Living and Dying in Nineteenth-Century Farming Communities during Westward Expansion, from New England to the Mountain West

This poster session brings together faculty, graduate students, and undergraduate students who have been contributing to the Settlement Ecology of Early Rural America (SEERA) project over the last seven years. This is a community-based research project that seeks to understand the transition to commercial farming in the USA during the late 1800s and how it related to farmstead and community socioeconomics, landscapes, demography, and memorializing of the dead in Madison and Onondaga Counties in NY and Boulder County, CO. Previous work has established the timing of commercialization in Madison County and the impacts it had on gendered labor patterns, relationships between farming and labor, household consumption practices, and mortality patterns. Posters in this session delve into changes in socioeconomic disparities, landscapes, health, and cemeteries during the transition in NY. In addition, several posters come from work that is beginning to explore the conditions for those moving west to Colorado at this time, including the relationship between socioeconomics and immigration and the landscapes of entertainment and vice that sprang up in the west around these newly settled farmers, ranchers, and miners.

[239] Symposium • Ancient Forest Management and Landscape Transformation: Anthropological Perspectives from the Americas

This session brings together scholars researching ancient forests as socioecological systems in the Americas. It aims to highlight how the study of ancient forest resource management, when guided by anthropological questions, has the potential to contribute to an understanding of human-environment relations that is contextualized in knowledge of changing social and political structures. What have been the guiding questions for this part of the world and the remaining gaps? How does an understanding of forest resource use that contemplates the broader dynamics of diverse food production systems (e.g., agroforestry) and foodways help

to transcend a focus on narrowly conceived ecological systems? How can anthropologically framed knowledge on ancient and changing long-term forest resource management help inform current-day forest or land-use models and policies? The presenters in this symposium illustrate the ways in which research oriented by anthropological questions, whether supported by paleoethnobotany, land-use studies, environmental DNA, and other approaches, helps to realize the full potential of historical ecology and related research programs.

[240] Symposium • Ancient Seashore Sites and Environments in Geoarchaeology

(Sponsored by Geoarchaeology Interest Group [GIG])

Geoarchaeology has been instrumental for understanding how our ancient seashores have changed through time, revealing deep records of the landforms, ecological habitats and transitional ecotones, and actions of people within these dynamic places over long time scales. Examples of research have spanned from the tropics nearly to the poles, from the Pleistocene throughout the Holocene, and through diverse natural and cultural lines of evidence. Given the variety of processes that have shaped these records, this symposium embraces diverse case studies, technical procedures, methodological approaches, and theoretical frameworks. We encourage contributors to share about their innovative approaches through geoarchaeology, broadly defined, toward improving our understanding of human-environment relations within these special places of seashore sites and environments.

[241] Symposium • Communities of Engagement: Incorporating Deep Time and Slow Science into Community-Based Research Projects

In recent decades, archaeology and other social sciences have been navigating a divergent path between (1) the accelerated pace at which research projects are commissioned to meet career advancement goals and funder's deadlines and (2) the rate at which communities are willing or able to be involved in research conducted in their communities. This session's case studies will argue for "slow science" approaches to archaeological research that "forefront ethically driven and collaborative research" (Cunningham and MacEachern 2016). This session will introduce a diverse group of interrelated presentations highlighting heritage management, contemporary interest in deep-time perspectives, the incorporation of recent archaeological knowledge by local actors, and community engagement initiatives. Two North American projects will examine the incorporation of Indigenous knowledge and slow science in the northeastern USA, and an additional project explores the relationship between local communities and the well-known Hamann-Todd Osteological Collection, Cleveland, Ohio. In southern Europe, three papers will look at local environmental values through the interpretation of animal figures, community-based research on historical ecology, and the contemporary interest in premodern viticulture technology in modern Tuscany, and a final paper explores efforts to affiliate local identity with an ancient Greek colonial site, Apollonia Pontica, in Sozopol, Bulgaria.

[242] Symposium • La Cueva de las Manitas, Cuicatlán, Oaxaca: Estudios arqueológicos e impacto social

El Proyecto Arqueológico Cueva de las Manitas en la Cañada Cuicateca de Oaxaca reinicia, después de casi 50 años, las investigaciones que habían ubicado a esta importante región en una amplia secuencia cultural ininterrumpida, abarcando desde el Formativo Medio hasta la época Colonial, para continuar con un complejo desarrollo etnográfico que se mantiene hasta el presente. Los resultados parciales obtenidos por medio de excavación arqueológica en este sitio entre 2022-2023, muestran una diversidad de materiales orgánicos e inorgánicos ubicados en contextos excepcionales de arte rupestre, que nos permiten acercarnos a visualizar la dinámica cotidiana en la transición del nomadismo a la vida sedentaria. Con un enfoque interdisciplinario, se interpretan y aprovechan los datos del pasado y se proponen dinámicas que benefician a las poblaciones del presente mediante la reapropiación de rasgos culturales que habían permanecido ocultos. Así mismo se explora, conjuntamente con la comunidad, las maneras de integrar el patrimonio cultural a dinámicas económicas que permitan su divulgación y su adecuada conservación.

[243] Symposium • Nondestructive Alternatives: Canine Remote Sensing (Scenting)

For many years Historic Human Remains Detection (HHRD) dogs, specifically trained to locate ancient burials, have been involved in noninvasive surveys where unmarked burials are suspected. Their ability to identify the scent of historic and precontact human remains adds vital information that can help protect burial

areas. The role of archaeology has changed greatly in the last 20 years. CRM firms, archaeologists, and Native communities must adapt techniques to meet new needs (for example, additions to AB 52-CEQA and global climate change). Requests to review museum and academic collections to locate human remains and associated funerary items are more common. Burials that are in danger of eroding or flooding need to be located so they can be protected. This symposium includes experts from different fields who have combined their specialty with the information provided by HHRD dogs. This multidisciplinary approach allows all parties involved to reach a common goal: to preserve and protect sensitive cultural material or areas.

[245] General Session • Great Basin Archaeology: From Rats to Casinos and Everything In-Between

[246] Forum • *MW Plenary Session–The Future of Careers in Archaeology

(Sponsored by SAA Board of Directors)

For decades, archaeological careers have focused on three main areas: Academia, Cultural Resource Management, and Government. Today, *the SAA is asking for more from American archaeology.* The course of archaeological careers has shifted in many different directions, such as working for tribal organizations, repositories/museums, local governments, and community outreach organizations, as well as specializing in GIS, lidar, and other technologies. These career shifts have been influenced by newer laws and regulations; a more diverse workforce; technological innovations; a curation crisis, including the ascendancy and reliance on the digital environment; and social issues such as climate change, environmental justice, the rights of Indigenous and descendant communities, traditional knowledge, and intellectual property. *In addition to these trends, today's students and early career professionals are asking for careers that provide a livable wage, have benefits, and lead to personal growth.* This forum will offer thoughts on the future of careers in archaeology, how careers are developing and where they may be heading, and what is at stake. Membership participation is expected and welcomed. *We especially want to hear from students and young professionals about their concerns and vision for the future of American archaeology.*

[268] General Session • Working with Museums, Collections, and the Government in the Midwestern United States

[269] Symposium • Moving the Needle: Expanding the Discourse on Modern Archaeology in Oaxaca Part I

The past two symposia, dedicated to “checking the pulse” of current research in Oaxaca, confirmed that archaeology in Oaxaca is as vibrant, collaborative, and cutting-edge as ever. Building on the growing momentum of the “Diálogos en Oaxaca Archaeology” collective, we seek this year to “move the needle” by further expanding the discourse on contemporary archaeological research in Oaxaca. In this symposium we present a group of Canadian, Mexican, and American archaeologists from across academic levels to discuss their ongoing research, upcoming projects, and persisting research questions and curiosities. Presenters from the field of archaeology and related disciplines will discuss their research from different regions, time periods, and academic interests in Oaxaca. By continuing to dialogue with each other on a regular basis, we further advance toward our common goal of recording and preserving Oaxaca’s history for future generations, while collaborating and supporting each other in the process.

[270] General Session • Managing Landscapes in the American Southwest

[271] Forum • Kindling for Cooking: Fuel in Archaeobotanical Assemblages

(Sponsored by Archaeobotany Interest Group)

Scholarship on both human-plant relationships and food often focuses on the food and its ingredients, leaving the cooking and its fuel largely underexplored. Fuel, however, is essential to sustaining human lives, as a regular prerequisite to heated homes and cooked meals. This forum presents perspectives on and methods for the identification and analysis of fuel in archaeobotanical research. We will discuss methodological, analytic, and interpretive approaches to firewood, grass, dung, and other fuel sources, and their interpretation in studies of cooking, heating, and burning.

[272] Lightning Round • Off the Map: Spatial Thinking beyond Geospatial Technologies

Geographic information systems and related geospatial technologies have long promised archaeologists a rigorous means of uncovering past landscapes and their relationships to people. Critical cartographers, however, have criticized GIS as positivistic, reductive, and modernistic; features that are incompatible with many non-Western forms of spatial thinking. In this lightning round, we ask participants to consider whether geospatial tools and methods can capture senses and experiences of place that have traditionally been left “off the map” or rendered unmappable. This session seeks to generate productive discussion about the potential for a critical cartography that leverages, rather than eschews, GIS and other geospatial technologies. To that end, we invite participants to present an example of spatial thinking that defies easy representation using traditional digital geospatial approaches. Participants are encouraged to discuss questions, challenges, and concrete examples they have encountered where it was necessary to push the limits of traditional spatial technologies. Participants may also bring partial or working attempts at overcoming such challenges. We encourage examples from all stages of the research process, including data collection, analysis, visualization, and publication.

[273] Symposium • Life on the Edge: Investigations in the Department of Piura, the “Extreme North” of the Central Andes, Peru

In the Central Andes, the extreme northern department of Piura remains one of the least-known archaeologically. Until the 1990s, the unresolved conflict between the modern nations of Peru and Ecuador made research in the borderland departments difficult. This further encouraged interpretation of the area as a zone of cultural differentiation with roots deep into prehistory. Due to the general lack of projects in the region, scholars have characterized Piura as an “artificial buffer zone of ignorance” and “[un espacio] aún desconocido.” Fortunately, with the implementation of a peace treaty between Peru and Ecuador, Peruvian and international archaeologists have started new projects in the past decade, covering a wide variety of temporal and spatial zones within the department. This symposium aims to reevaluate our understanding of prehistoric Piuran societies in light of this new data. By bringing together active researchers in this borderland region, this symposium will assess the spatial and temporal (dis)continuities in cultural materials and lifeways necessary for the creation of relative chronologies and deep history of the “edge” of the Central Andes while emphasizing the understanding of Piura as a region of study in its own right. *****This presentation will include images of human remains.**

[274] Symposium • Field Houses and Traditional Agricultural Landscapes of the Northern US Southwest

Field houses, water and soil control features, and other horticultural features are often identified and recorded as isolated elements dotting expansive landscapes during archaeological surveys in the northern US Southwest. This suite of agricultural features typically receive far less investigative attention than civic-ceremonial or residential structures, as they exist in spaces perceived as “empty” and disconnected from loci of intensive occupation. Understanding the breadth of extensive landscape engineering and agricultural investment is further limited by subjective project and survey boundaries, exaggerating the perceived isolation of field houses and other horticultural features. Interpreting these features, however, within the context of larger lived landscapes is not only more aligned with Indigenous perspectives of space but also yields valuable information on traditional cultural practices and values, ecological knowledge systems, stewardship, sustainability, and resilience. This symposium highlights recent research on agrarian landscapes in the Ancestral Pueblo Southwest, including perspectives from archaeology, landscape architecture, and descendant communities.

[275] Symposium • Many Voices in the Repository: Community-Based Collections Work

(Sponsored by Community Engaged Heritage Practice Interest Group)

As archaeology evolves into a more open and community-focused field, one area with significant potential to bridge gaps between professionals and the broader public is collections-based work. Many problems faced in collections management have been part of larger conversations for decades, including how to partner with communities, how best to revitalize the potential of “orphaned” and legacy collections, how to meet the needs of a diverse array of stakeholders, and how to ethically protect and provide access to material culture. Moreover, with increased recognition that responsible archaeology must prioritize a long-term plan for collections and data generated by fieldwork, archaeologists and their community partners are developing

creative approaches that both improve long-term care and lower barriers to accessing archaeological work and its products. This session addresses many of these issues with concrete examples of how those working in repositories, agencies, academic, CRM, and avocational settings continue to work toward the preservation of our past for future generations. The goal of this session is to bring together those interested in community and collections relationships to discuss successes and failures in a collaborative setting to build a more inclusive future in our field.

[276] Symposium • *MW In the Shadow of the Rockies: Historical Bioarchaeology and Mortuary Archaeology in Colorado

Historical archaeology offers unique insight into the history of Colorado in the nineteenth and early twentieth centuries. This session gathers interdisciplinary research in bioarchaeology and mortuary archaeology from across the state. Papers bring into conversation skeletal remains, grave markers, landscapes, and archival traces to illuminate forgotten or understudied aspects of Colorado's recent past. These projects, rooted in communities and with active local involvement, demonstrate the value of various forms of descendant, stakeholder, and local collaborations, as well as the enduring and widespread interest in Colorado history. Indeed, the research presented here contributes to a more expansive and inclusive history of the region, centering the experiences and contributions of people with less traditional archival footprints: from miners and migrants to frontier educators and those institutionalized in state facilities. Other contributions highlight methodological challenges and innovations encountered while conducting historical archaeology in the cemeteries of the Mountain West. Together, these papers offer a glimpse into the vibrant state of historical archaeology and bioarchaeology in Colorado, through exciting ongoing and collaborative research. *****This session will include images of human remains.**

[277] Symposium • Hunting for Hunters Underwater: Results and Future Directions for Submerged Ancient Sites

(Sponsored by the Island and Coastal Archaeology Interest Group)

Since 2008, interdisciplinary investigations in Lake Huron (Great Lakes, USA) have systematically approached the archaeology of a submerged landscape. This multiscalar research has identified a cultural occupation which dates to ~9500–8900 cal yr BP and methods have included geophysical survey, remotely operated vehicle mapping, excavation in 30+ m of water, predictive modeling, and virtual world simulations. With a unique cold, far offshore, and deep, freshwater setting, archaeological sites ($n = 33$) and materials, including stone hunting architecture and lithic artifacts, are preserved within their original spatial and paleoenvironmental contexts. Research below the lake fundamentally transforms our understanding of early Holocene hunter-gatherers and our approaches to underwater archaeology more generally. Papers within this session will present the various embedded components of the project as well as compare the Lake Huron finds with those from elsewhere in the global north including Canada, the Baltic, and the North Sea.

[278] Symposium • Divergent Paths, Shared Histories: Examining Archaeological Trends from the Caucasus to Mongolia

Two decades ago, archaeologists conducting research in the sphere of influence of the former Soviet Union faced similar challenges and were often united(ish) in their approaches to the region. More recently, as we have faced a variety of natural, social, and historical environments, our paths have seemingly diverged. This session concentrates on current research from the archaeology of the Caucasus and Mongolia, two opposite sides of the region often defined as Eurasia. These research areas, while historically linked in many ways, are also very distinct. In this session, we compare and contrast current research from the Caucasus and Mongolia, highlighting the ongoing similarities and differences in an effort to understand a broader vision of archaeological research in Eurasia. Papers in this session will present new data and ask in which ways our various theories and data can inform research taking place on the steppe, broadly exploring if Eurasian archaeology is still a meaningful designation

[279] Symposium • Elephant Archaeology

Elephants and related Proboscidea are the quintessential charismatic megafauna and have interacted in various ways with humans throughout the history of our evolving species across Eurasia, Africa, and the

Americas. Archaeological research on elephant remains and elephant iconography reflects a wide range of critical topics concerning human/nonhuman animal interactions including (but not limited to) cooperative human collective action, raw material acquisition, meat acquisition strategies, folk taxonomy and classification, environmental change and anthropogenic niche construction, domestication and animal management, the roles of nonhuman animals in human conflict, religious animal iconography, processes of regional political integration, nonhuman animals in historical globalization processes and entertainment, and more. Thinking about how humans and nonhuman animals are variously interconnected through the lens of one particularly evocative taxon allows us to examine questions related to how nonhuman animals play critical roles in defining humanity and understanding critical aspects of human history.

[280] Symposium • 2025 Fryxell Award Symposium: Papers in Honor of David J. Meltzer Part I
(Sponsored by Fryxell Award Committee)

Dr. David J. Meltzer, the Henderson-Morrison Professor of Prehistory in the Department of Anthropology at Southern Methodist University, is the 2025 recipient of the Fryxell Award for Interdisciplinary Research. This award is presented in recognition of interdisciplinary excellence of a scientist whose research has contributed significantly to American archaeology. It is made possible by the generous support of the family of the late geologist Roald Fryxell, whose career exemplified the crucial role of multidisciplinary cooperation in research. Over five decades, Meltzer has become a not only a leading figure in Pleistocene archaeology in the Americas, but also an interdisciplinarian who has contributed significantly to Quaternary science, archaeogenetics, and the history of anthropology. The papers in this symposium reflect these three important themes. Presenters in this session include former students; colleagues; and peers from archaeology, anthropology, genetics, and the history of science.

[281] Symposium • Early Human Adaptation on the African Coasts: Comparing Northwest Morocco and the Cape of South Africa

The cultural evolution and early survival of our species are major research subjects in paleoanthropology. For over two decades two regions of Africa have been at the forefront of this research: northwest Morocco and the Cape of South Africa. Both of them have rich stratified deposits spanning the Middle and the Later Stone Ages, with abundant faunal, paleoenvironmental, and marine shell records; remains of plants; advanced lithic and bone technologies; well-preserved combustion features; and traces of symbolic behavior. Despite their robust absolute age models, and the excavations largely based on the same state-of-the-art excavation protocol, up to now these regions and their data have never really been compared and integrated into higher-resolution cross-regional studies. Building on the continuous work in the Cape and the renewed excavations of Rabat-Temara caves in Morocco, in this session we bring together researchers involved in these projects. The primary goals of this session is to advance our understanding of early human cultural evolution within the context of these coastal landscapes, establish future interregional collaborations, and work on further standards of acquisition of data used to address the character and importance of coastal resources for human evolution.

[282] Symposium • Social Dynamics in the North Highlands of Peru during the Formative Period: The Pacopampa Project's Contribution to Understanding the Early Complex Societies in the Andes

Since the late 1970s, Japanese teams have been investigating early ceremonial centers in the Peruvian North Highlands, with an intensive focus on the Cajamarca region. The importance of the region in the formation of Andean civilization is becoming clear based on long-term investigations carried out at the sites of Huacaloma, Kuntur Wasi, and Pacopampa. In particular, recent data from Pacopampa provide new perspectives on important issues in Andean archaeology, such as the emergence of monumental architecture and social complexity in relation to the acceleration of interregional interactions and transformations in subsistence economy which includes the development of animal domestication in the region. In addition, the data obtained from early highland centers in the Central Andes made it possible to carry out productive comparative studies between Pacopampa and other centers. Therefore, this session aims to discuss the Early Andean societies based on the data from the North Highlands, represented by those from Pacopampa, and thus focuses on three topics: (1) ongoing research results of the Pacopampa Archaeological Project, (2) the

nature of the socioeconomic process during the Formative period in the North Highlands, and (3) comparisons between the North Highlands and other regions such as the North Coast and Central Highlands. ***This session will include images of human remains.

[283] Symposium • The Maritime Maya: Current Archaeology of Coastal Yucatán, Mexico, and Belize

“Recognition of the centrality of the sea in the Maya worldview has been slow to emerge.” In the 15 years since those words were written in *Fiery Pool: The Maya and the Mythic Sea*, this recognition has continued to more fully develop and mature through the work of numerous researchers interested in studying the dynamics of precolumbian Maya coastal life. That publication helped to promote further exploration of the powerful connections that existed between the Maya and the watery world that surrounded them. This symposium presents an updated view from archaeologists, bioarchaeologists, and other related scientists working to reveal the nature of Maya coastal adaptations over time. In the past decade and a half the majority of this research has taken place along the Gulf and Caribbean coasts of Mexico and Belize, and many of the symposium papers center on the ancient Maya. But the sea facilitated the development of sociocultural, economic, political, and biological ties between different Maya peoples and other Mesoamericans and beyond. The papers in this symposium also explore the myriad relationships the coastal Maya developed with other coastal and inland Maya groups, as well as groups outside the Maya world. ***This session will include images of human remains.

[284] Symposium • Toolstone and Mineral Geography across Time and Space

(Sponsored by Lithic Technology, Prehistoric Quarries, and Early Mines Interest Group)

The geographic distribution of toolstone and human-modified minerals is a fundamental element of modern archaeological analysis. Documenting and defining both natural and manuport distributions of these materials can address questions about settlement/mobility, economy, exchange, kinship, gender, ethnogenesis, and other areas of anthropological inquiry. For example, what does the distribution of chemically sourced obsidian or a distinctive regional chert tell us about the lifeways, networks, and social hierarchies of past peoples. This symposium explores case studies from a variety of global contexts and eras to elucidate the geological, geographical, and human relational contexts of toolstones and/or minerals and to generate a more holistic view of the geological landscape.

[287] General Session • Engaging with Archaeological Theory

[288] Symposium • Global Perspectives on Biomolecular Approaches to Human-Animal Interactions Past and Present

Applications of biomolecular approaches in archaeology are becoming increasingly ubiquitous in the field and encompass a wide range of methods, including stable isotope analysis, Zooarchaeology by Mass Spectrometry (ZooMS), and ancient DNA (aDNA) analysis. These methods provide previously unattainable long-term data that informs our understanding of past and present environments. Increasingly, we see these methodologies being implemented into the study of human-animal interactions. Integrating biomolecular methods into archaeological research increases our understanding of dietary patterns, domestication and animal husbandry, human migration patterns through the trade and exchange of animals and their byproducts, the study of health and disease transmission between humans and animals, and impacts of long-term human mediated change on faunal populations. This symposium highlights how biomolecular approaches are being implemented into archaeological studies around the world to increase our knowledge of human-animal interactions, both in the past and present.

[289] Symposium • Papers in Honor of Deborah L. Nichols

Our colleague and friend Deborah L. Nichols left behind an impressive body of scholarship and of service to archaeology. She worked primarily in central Mexico, although early in her career, she worked in the American Southwest, serving as field director of the Black Mesa Archaeological project for four years. She is one of few archaeologists who has done research on nearly all time periods in central Mexico, from the Formative period all the way to the early colonial period. She worked at a variety of sites, including Altica,

the earliest known small village in the Teotihuacan valley, the Postclassic atepetl of Otumba, and the gigantic city of Teotihuacan. Her scholarship touched on a broad range of topics of anthropological interest, including city-states, empires, agricultural and craft production, exchange, markets, and others. She also did synthetic work that brought together years of research at Teotihuacan, the Mexica empire, and all of Mesoamerica. And she collaborated with many of us on a variety of projects ranging from fieldwork to laboratory work, to publication projects, and to service to our profession. In this session, we honor Deborah Nichols's legacy and contributions to archaeology. *****This session will include images of human remains.**

[290] Symposium • The Classic-Postclassic Transition in Oaxaca

This session discusses preliminary results of an ongoing five-year interdisciplinary project addressing the Classic–Postclassic transition along the Río Verde drainage basin of Oaxaca, Mexico. The research focuses on two interrelated but contrasting ecological regions: the lower Río Verde Valley in the semitropical lowlands and the Nochixtlán Valley in the temperate highlands. As discussed in the session, preliminary paleoecological research in Oaxaca and beyond suggests a period of climatic drying at this time, which may have negatively impacted agriculture. Archaeological papers in the session examine changes in the lives of commoners with a focus on shifts in domestic economy, diet, and the health of people potentially linked to climate change. We focus on commoners because they were the vast majority of the population, the primary food producers and would have been most directly affected by a decline in agricultural productivity. The interregional comparison also contributes to evaluating the impact of climate change because in Nochixtlán agriculture is highly susceptible to drought, while in the lower Verde higher mean annual rainfall and non-agricultural resources likely buffered domestic economies. Session papers also consider changes in ritual, political organization, long-distance trade, and the use of space. *****This session will include images of human remains.**

[291] Symposium • The Value of Rock Art: Interdisciplinary Approaches to Current Rock Art Documentation, Research, and Analysis Part I

(Sponsored by Rock Art Interest Group)

Rock art is enigmatic and iconic, its visual aesthetic used across academia to promote everything from book covers to merchandise, but beyond this, rock art is undervalued for the contributions it can make and the knowledge it can provide. Current rock art research is interdisciplinary, drawing methods from various fields and knowledge from multiple lines of evidence. These approaches augment and enhance rock art documentation, offer new strategies for evidence and site management, and facilitate new interpretive insights for rock art provinces around the world. With continuing, innovative, and progressive methods of analysis, documentation, and study, rock art is moving into a new era of research, enabling it to not just support endeavors but lead in them. The Rock Art Interest Group–sponsored session provides a forum to share rock art research and pedagogy, highlighting and showcasing current research to promote the value of rock art to the wider academic community.

[292] Symposium • Interdisciplinary Perspectives on Late Pleistocene Archaeology of the Northern Pacific Rim

Paleogenetic evidence indicates that ancient North American populations emerged from a mix of East Eurasian and Ancient North Eurasian groups around 25,000 years ago, followed by a period of isolation and subsequent migration to the Americas after approximately 21,000 years ago. However, the precise locations and mechanisms of these formative events remain unclear due to limited data. Similarities in cultural patterns between Asia and North America, alongside emerging genetic data, highlight the Pacific Rim as a critical region for understanding the Late Pleistocene peopling of the Americas. This session presents cutting-edge research on Late Pleistocene archaeology, paleogenetics, and paleoenvironmental studies to explore new insights into shared ancient human history along the northern Pacific Rim.

[293] Symposium • Reckoning with Legacy Exhibits, Data, and Collections

(Sponsored by Committee on Museums, Collections, and Curation)

In 2024, updates to the Native American Graves Protection and Repatriation Act (NAGPRA) strengthened the legal and ethical responsibilities of US museum staff regarding Indigenous North American collections. This has inspired many museums to rethink and enhance their exhibits, leading to meaningful discussions on

better ways to manage and present these collections. The new regulations have also fostered a more inclusive and collaborative approach to exhibits beyond NAGPRA's scope. Within this context, archaeologists and museum professionals are embracing the opportunity to rethink their research, bringing forward new perspectives and voices through increased collaboration. With NAGPRA now requiring informed consent for research and exhibitions of existing collections, there is a renewed emphasis on responsible stewardship that applies not only to Indigenous North American collections but also to all cultural collections. We share case studies that highlight the challenges faced, the strategies developed to overcome them, and the successes achieved, along with areas that need further improvement. This examination underscores the ethical stewardship required in our work, balancing research goals, Tribal rights, the desires of living communities both within and beyond NAGPRA, and public expectations as we navigate the complexities of managing legacy collections.

[294] Symposium • Interdisciplinary Approaches to Basque Archaeology: Current Research and Future Directions

Straddling both sides of the western Pyrenees mountains, the Basque Country is home to a rich archaeological history, well-defined identity, and diverse cultural traditions that have been successfully maintained even in modern times. Outside its borders, the Basque diaspora spans multiple countries, with the western United States in particular home to thriving Basque communities. Despite a strong tradition of archaeological investigation, Basque archaeological research has received comparatively little attention in the English-speaking world, with new discoveries often lacking in international scope. Though early investigations focused extensively on the monumental prehistoric landscape and the determination of Basque origins, the world of Basque archaeology is today wide-ranging, with investigations carried out in multiple continents and spanning diverse geographical and temporal scopes. This session brings together researchers from across the globe to spark discussion around a diverse array of topics related to the Basque Country, from the latest archaeological discoveries and ongoing investigations to the application of innovative methods of site detection and chemical analyses to reconstruct past diet and migration patterns. The session aims to strengthen links between researchers in varied branches of Basque archaeology and anthropology and to promote broader engagement of these topics both in the Basque Country and beyond. ***This session will include images of human remains.

[295] Symposium • Celebrating Alice: Recognizing the Many Contributions of Alice Beck Kehoe

(Sponsored by Women in Archaeology Interest Group)

Alice Beck Kehoe has been a multidimensional scholar throughout her amazing career in anthropology and archaeology. She has authored and/or edited over 20 books, the newest boldly titled *Truth and Power in American Archaeology*. Her interests are truly diverse, covering Native American nations (Blackfoot, Cree, Osage), Mississippian, and Mesoamerican archaeologies; precolumbian voyaging and contacts; shamanism; and not least of all engendering archaeology. Alice has been an icebreaker through the frozen tundra of the "Old Boys Network" from the 1950s through to the current day. She has been a strong model for women in anthropology and archaeology, and it is high time that Alice Beck Kehoe be honored for all her struggles and successes in academia. She is an omnipresent participant in conferences where she consistently challenges other scholars to think critically and creatively. In this SAA session we hope to highlight the many facets and influences of her illustrious career by hosting a conference session in her honor.

[296] General Session • Power and Social Organization in Mesoamerica

[297] General Poster Session • Ancient DNA Analysis in the Americas

[298] General Poster Session • CRM and Heritage Management

[299] General Poster Session • Experimental Archaeology

[300] General Poster Session • Foraging Cultures in North America

[301] General Poster Session • Not on Tinder: Dating Methods and Chronology**[302] General Session • Modern Methods in the American Southwest****[303] General Session • Stelae, Iconography, and Glyphs in Central America****[305] Symposium • Ancient Pedestrians: Current Research in GIS-Based Movement Modeling for Archaeology**

This session presents recent work on archaeological applications of GIS-based pedestrian models that moves the field forward in both methods and theoretical framing. Archaeological studies of past movement are often complex tools applied to complex questions with non-trivial computational requirements, theoretical questions about reconstructing movement and the status of models as evidence, and the potential to speak to topics like power, identity, and economy. This session seeks papers that ask “how and why do people move” from individual bodies to continental landscapes, deep time to modern day, and diverse global perspectives. What factors influence how people move? How can we use movement models to understand larger political, social, and economic relations? Papers that develop new methods or refine established ones to approach questions of movement, the definition of appropriate and interesting research questions about movement and mobility approachable with this suite of methods, and case studies that model ancient movement are welcome.

[306] Forum • Imperial Transitions: Diet, Health, and Daily Life at Purun Llaqta del Maino, Peru, from the Late Intermediate to the Early Seventeenth Century AD

Early modern imperial expansions continue to have substantial legacy effects on the global distribution of wealth, political power, and health outcomes in the early twenty-first century. Archaeologists have made vital contributions to the study of empires in both the ancient and early modern worlds, but we have focused primarily on their acute impacts and understand far less about the mechanisms through which their effects persist from one regime to the next. This forum discusses new research on imperial transitions—moments and means by which imperial reorganizations of infrastructure, ecology, population, and social affiliation, along with local strategies of resilience, are passed down and rearticulated across moments of major sociopolitical change. We concentrate on studies at the site of Purun Llaqta del Maino, Peru, with particular attention to household economy, diet, and health among Indigenous communities between 1100 and 1700 CE, during the Late Intermediate period and then under Inka and Spanish rule. Following short presentations focusing on architecture, agricultural landscapes, zooarchaeology, bioarchaeology, paleoethnobotany, and ceramic analysis, we invite comment, discussion, and critique from colleagues working in the same geographic region, as well as colleagues working on similar cases and concepts in other areas of the world. *****This session will include images of human remains.**

[307] Lightning Round • Honoring Barbara J. Mills and T. J. Ferguson

Since, nearly, the day that Barbara Mills stepped out of the Volkswagen bus and met T. J. Ferguson at the Ancestral site of Nas Chuggee (Grasshopper Pueblo) on White Mountain Apache Tribe trust lands, this pair has transformed archaeological research in the United States and beyond. Together and separately, they conduct research and support cultural resources management and collaboration primarily in the Southwest United States. They develop and hone theories of identity, leadership, frontiers, social memory, social networks, gender, and craft production for better understanding the lives of past peoples, and they engage directly with the interests and understandings of Tribal communities across the Southwest United States to underscore the complexities of history and culture. They push for better, more inclusive, and more complete research and act toward solutions with a spirit of service and collegiality. In this lightning round forum we invite students, colleagues, and friends to come together and celebrate the work and wisdom of Barbara J. Mills and T. J. Ferguson.

[308] General Session • Adventures in Archaeometry from around the World

[309] Symposium • The Atlantic Frontier: Foodways and the Materialities of Transatlantic Interactions

Over the past 500 years, the Atlantic Ocean has played a pivotal role in facilitating cultural, political, and economic exchange. Rather than serving as a dividing phenomenon, the Atlantic connects communities. Focusing on the cultural interactions that pillared the economics and politics of the period, this session will explore foodways and their material manifestations as a lens for understanding the quotidian relationships and their power dynamics. Through an examination of food wares, glass, faunal and floral remains, smoking pipes, and other food-related materials, we will discuss how coastal communities, forts, and hinterlands on both sides of the Atlantic navigated contacts during the Atlantic trade period, colonial era, and postcolonial age. This session will address whether these groups dominated, survived, actively resisted, or became entangled in these interactions, and detail the implications for gender roles, class differentiation, and other cultural issues within these transcontinental interfaces. This interdisciplinary exploration will shed light on cultural exchange's complex and multifaceted nature across the Atlantic.

[313] General Session • Gender and Childhood around the World

[314] General Session • From Texas to Georgia: Advances in Southeastern Archaeology

[315] General Session • Indigenous Ideologies and Archaeology

[316] General Session • aDNA: Recent Findings and Methodological Advancements

[317] General Session • The Pleistocene in North America

[318] Forum • Four Decades of NAGPRA Part 2: Adapting to Changing Regulations

(Sponsored by Repatriation Committee)

New regulations for complying with the Native American Graves Protection and Repatriation Act (NAGPRA) took effect on January 12, 2024. One year later, we have witnessed exhibit closures and research moratoria, increased invitations for Tribes to consult, development of responsive institutional policy, and accelerated progress toward notice publication, among other significant effects. This forum connects NAGPRA professionals from federal and state agencies, Tribes, museums, universities, and cultural resource management to discuss how the Final Rule has impacted our work, from quotidian routines to broad-scale change across diverse archaeological sectors.

[319] Forum • United States Archaeology at Crossroads Part 2: Recognizing Failures and Addressing Obstacles

(Sponsored by Government Affairs Committee)

Today's archaeology is not that of the twentieth century. Archaeology is not solely an academic pursuit; Euro-Americans are not the sole owners of the past. Outside forces are shaping, and have always shaped, today's practice of archaeology, whether those shifts be academic (e.g., pressures in higher education funding, student debt, curriculum), economic (e.g., consumer demand for green energy, transportation needs, cultural resource management), or political. Archaeology is in a paradigm shift, where transformation is needed to bring value to Indigenous and descendant communities, the public, and our current and future professionals. Without change, our profession faces irrelevancy and further loss of historic and sacred sites. This forum is Part 2 of the United States Archaeology at Crossroads Part 1: The Obstacles, the Failures, and the Victories session, where the Government Affairs Committee invites attendees to discuss the obstacles at our discipline's crossroads.

[320] General Poster Session • Bioarchaeology Part 1: Stable Isotope Analysis

[321] General Poster Session • Bioarchaeology Part 2: Skeletal Analysis

[322] General Poster Session • Community Archaeology and Public Engagement

[323] General Poster Session • Power, Conflict, and Political Organization**[324] General Poster Session • Water Management and Irrigation****[325] General Session • Food, Water, and Environment in Mesoamerica****[326] General Session • Material Analysis in the American Southwest****[327] General Session • Preserving Archaeological Resources: Museums and Looting around the World****[328] Lightning Round • From the Med to the Midwest and Stones to World-Systems: In Honor of P. Nick Kardulias**

Over the last four decades Nick Kardulias has had a significant impact on the archaeology of Greece, Cyprus, and the US Midwest, while also training generations of students at Youngstown State University, Kenyon College, as director of the archaeology program at the College of Wooster, field director of the Ohio State University Excavations at Isthmia in Greece, and associate director of the Athienou Archaeological Project in Cyprus. With his wide variety of interests, including lithic analysis, surface and geophysical survey, and world-systems theory, Nick has provided an excellent example of the all-around archaeologist who can successfully combine field methods and archaeological theory to develop nuanced understandings of past communities. This session is devoted to all things Kardulias, with short presentations covering topics related to Nick's research and teaching, followed by a forum discussion of Nick's many contributions to the field of archaeology and the lives of the session participants.

[330] Symposium • Michoacán and West Mexico: New Research in Interaction, Exchange, and Mobility

This session will address interaction, exchange, and the dynamics of mobility in different areas located in Michoacán and Western Mexico broadly. It is also open to the presentation of other topics related to recent research in this area. Papers presented will cover many different forms of interaction operating at inter- and intrasite, regional, and long-distance scales. As different forms of interaction leave different traces in the archaeological record, they can be studied from different theoretical perspectives or lines of evidence. This session will examine new research on how these movements of people and objects across the landscape developed in Michoacán and West Mexico more broadly. ***This presentation will include images of human remains.

[331] Symposium • A Movable Feast: Mobility and Commensalism in the Andes

Movement and feasting are key themes in the modern study of archaeology. While the theoretical and methodological underpinnings of these two have received considerable attention, they have mostly been tackled individually. Here we focus on the role of movement (caravans, pilgrimages, trade networking) in creating the social, economic, and political setting for feasting to occur. As such we understand feasting as a political mechanism by which society negotiates inter- and intra-community commensality, peer-to-peer and peer-to-commoner conspicuous consumption, and wider elite and community interactions with the sacred. Here we welcome papers that focus on unraveling the methodological and material correlates that link movement and feasting across the spectrum in the prehispanic Andes. These approaches can include, among others, stable isotope analysis of faunal and human remains; genetics; and chemical, geological, and stylistic study of archaeological material including spatial analysis and circuit theory research.

[332] Symposium • Advances in Stone Age Archaeology of Central Asia

Central Asia is a crucial region for understanding human history. In recent years, considerable archaeological research has provided important new insights into the complex story of Stone Age occupation in this region. Through the identification of new archaeological sites, the reevaluation of old collections, and the application of novel analytical techniques, archaeologists are documenting this region's significance in shaping technological and cultural evolution from the Pleistocene to the Holocene. This session will highlight new

research that advances our understanding of the Stone Age period of Central Asia and its broader implications for the study of prehistory and human behavioral-cultural evolution. *****This session will include images of human remains.**

[333] Symposium • The Archaeology of Care and Power

The care concept in archaeology is often used to identify life-sustaining practices and behaviors in the past. However, practices of care are not necessarily always benevolent and inclusionary. By introducing the analytical framework “Ecologies of Support,” anthropologists Vincent Duclos and Tomás Sánchez Criado provide a pathway to “trouble” the use of the care concept, and urge scholars to treat care “as is” without being burdened by the moral and ethical standards often associated with the concept. This seminar invites archaeologists to look at practitioners, structures, and sites of care as convoluted systems entrenched in power dynamics. Beyond just identifying care practices in the past, this session aims to ask: Who had access to care, and who did not? How did care include and exclude certain groups of people? And lastly, how was care entangled in economic processes, power structures, and both the natural and built environment? By mapping out the often-discontinuous distribution of care, archaeologists can get at how care was instituted across the landscape and the material conditions that enabled care in the past. *****This session will include images of human remains.**

[334] Symposium • The Value of Rock Art: Interdisciplinary Approaches to Current Rock Art Documentation, Research, and Analysis Part 2

(Sponsored by Rock Art Interest Group)

Rock art is enigmatic and iconic, its visual aesthetic being used across academia to promote everything from book covers to merchandise, but beyond this, rock art is undervalued for the contributions it can make and the knowledge it can provide. Current rock art research is interdisciplinary, drawing methods from various fields and knowledge from multiple lines of evidence. These approaches augment and enhance rock art documentation, offer new strategies for evidence site management, and facilitate new interpretive insights for rock art provinces around the world. With continuing, innovative, and progressive methods of analysis, documentation, and study, rock art is moving into a new era of research, enabling it to not just support archaeological endeavors but lead in them. The Rock Art Interest Group– sponsored session provides a forum to share recent rock art research and pedagogy from a wide range of topics that help us to better understand and contextualize rock art, highlighting and showcasing current research to promote the value of rock art to the wider academic community.

[335] Symposium • Ashes to Ashes, Dust to Dust: The Archaeology of El Salvador

Volcanism has been the primary force driving change in El Salvador throughout the Holocene. Hundreds of volcanoes have shaped the landscape, enriching the soils and creating fertile ground that provided the foundation for human groups to settle and evolve into complex societies over millennia. This session seeks to explore the latest research on the archaeology of El Salvador, a land defined by its volcanic activity and the enduring resilience and adaptability of its societies since prehispanic times. *****This session will include images of human remains.**

[336] Symposium • *MW City and Country in the American West: Post-1848 Historical Archaeologies of Denver and Los Angeles

The western United States following the 1848 Treaty of Guadalupe-Hidalgo represents a distinctive opportunity for historical archaeology. Rapidly transforming social, political, and economic conditions, shaped by variation in climate and resources, produced radically different regional circumstances. Over time, however, these “differences” evolved under the influences of processes working at a national and international scale. Although comparative analysis is increasingly unfashionable in historical archaeology, there remains value in looking at contemporary processes playing out in different (but related) places. This session presents current research from two regional centers of the post-1848 American West—Denver and Los Angeles—to highlight opportunities and challenges in tracing common “themes” via archaeological evidence. Topics include gender, identity, health, and infrastructure. Collectively, these papers also signal interconnection between city and country to these topics, highlighting the importance of scale in studying

human lives in such distinctive historical circumstances.

[337] Symposium • Advances in Macrobotanical and Microbotanical Archaeobotany

(Sponsored by Archaeobotany Interest Group)

This symposium, sponsored by the Archaeobotany Interest Group, provides a forum for the dissemination of recent methodological and theoretical innovations in both macrobotanical and microbotanical archaeobotany. Papers in this symposium span time and world regions, and address the full range of research questions explored in archaeobotany, in order to display the current state of the field. The symposium welcomes the work of early-career scholars and established researchers alike, and invites presentations from academic, public, community, and compliance archaeology. The goal of this session is to explore recent developments in the study of human-plant interactions, and we welcome papers that highlight new archaeological case studies or new analytical techniques.

[338] Symposium • New Thoughts on Current Archaeological Research in Neolithic and Bronze Age China

This session brings together scholars actively engaged in research on the archaeology of Neolithic and Bronze Age China and cultural heritage management. The participants, who have primarily conducted their fieldwork and analyses in the upper and middle Yellow River valley, are reevaluating the assumptions and frameworks used to interpret their collected data. In this session, the participants will present findings from surveys, excavations, settlement pattern studies, ceramic analyses, zooarchaeology, and other related fields. The ongoing archaeological fieldwork and multidisciplinary research have generated significant new insights and deepened our understanding of the various economic, social, and political developments in early China.

[339] Symposium • 2025 Fryxell Award Symposium: Papers in Honor of David J. Meltzer Part 2

(Sponsored by Fryxell Award Committee)

Dr. David J. Meltzer, the Henderson-Morrison Professor of Prehistory in the Department of Anthropology at Southern Methodist University, is the 2025 recipient of the Fryxell Award for Interdisciplinary Research. This award is presented in recognition of interdisciplinary excellence of a scientist whose research has contributed significantly to American archaeology. It is made possible by the generous support of the family of the late geologist Roald Fryxell, whose career exemplified the crucial role of multidisciplinary cooperation in research. Over five decades, Meltzer has become a not only a leading figure in Pleistocene archaeology in the Americas but also an interdisciplinarian who has contributed significantly to Quaternary science (Part 1), archaeogenetics (Part 2), and the history of anthropology (Part 2). The papers in this symposium reflect these three important themes. Presenters in this session include former students; colleagues; and peers from archaeology, anthropology, genetics, and the history of science.

[340] Symposium • Collaborative and Community Archaeology

(Sponsored by Public Archaeology Interest Group (PAIG) and Colorado Council of Professional Archaeologists [CCPA])

Collaborative and Community-Engaged Scholarship (CES) is an important topic in our profession, encompassing a growing diversity of activities. We continue eight years discussing issues and best CES practices in archaeology. This session displays a commitment to conducting research and historic preservation in effective partnership with multiple stakeholders as a matter of fairness, ethics, and as a way to create and co-create robust and useful final products. Archaeological projects affect Indigenous peoples, local residents, and descendant communities in many ways. These groups often have relatively little input into what “others” say about, or do with, their heritage. We advance inclusive, community-engaged scholarship that is co-created with relevant communities. The goal of this session and many of the projects discussed is to use community involvement and participation as a way not only to give a voice to groups that have been essentially voiceless but to empower all stakeholders—especially on projects that involve “multiple pasts.” We discuss the various types of CES as defined by Doberneck, Glass, and Schweitzer (2010) including Research and Creative Activities, Teaching and Learning, Service and Practice, and Commercialized Activities. We also discuss trajectories of developing relationships and projects that can become respectful, useful, and productive CES.

[341] Symposium • Interdisciplinary Approaches to Landscape Archaeology Part 2

(Sponsored by North American Chapter of Computer Applications and Quantitative Methods in Archaeology [CAA-NA])

This session explores past human-environment interactions through the lens of landscape archaeology. We examine how combining archaeological data with environmental studies, computational tools, and ethnographic insights can enrich our understanding of ancient landscapes. Paleoenvironmental reconstructions, based on the analysis of soil samples, plant remains, and fauna, shed light on ancient landscapes and human-environment interactions. This approach can be integrated with remote sensing techniques such as geophysical surveys, aerial photography, lidar, and satellite imagery to aid in mapping and interpreting complex archaeological sites. Similarly, computational modeling and simulations provide an additional layer of analysis, helping us understand the dynamics of past landscapes, human-environment interactions, and the impact of environmental changes on past societies. Complementing these more quantitative approaches, ethnographic and ethnohistorical studies offer essential insights into how past landscapes were used, or how they continue to be used in contemporary contexts. Throughout this session, we seek to explore these methods through multidisciplinary perspectives. Case studies that demonstrate the power of integrating multiple datasets and methodological approaches are particularly encouraged. By sharing diverse methodologies and theoretical perspectives, this session aims to advance the field of landscape archaeology and develop a more comprehensive understanding of humanity's impact on the land.

[342] Symposium • Praxis Makes Perfect: Celebrating the Academic Life and Times of Randy McGuire

Beginning in the 1970s, Randy McGuire's career has spanned an impressive spectrum of methodological, regional, and theoretical contributions in archaeology. Trained in the US Southwest and Northwest Mexico with an emphasis on the Hohokam and Trincheras traditions, his pursuits have evolved into directions that encompass but are not limited to Marxism and archaeological theory, historical and contemporary archaeologies, borderlands studies, and decolonizing Americanist archaeology. McGuire's dedication to praxis underlies these engagements: the use of archaeology to gain knowledge of the world, to critique it, and to take action toward a more humane future. His activist stance has inspired projects ranging from the Colorado Coalfield Wars of the early 1900s to the current migration and humanitarian crisis on the US and Mexican border. This eclectic session is a testament to the wide-ranging impact of McGuire's ideas and collaborations in North America, Latin America and Europe.

[343] Symposium • (De)Pathologizing the Past: New Perspectives on Intervention and Modification as Care in the Americas

(Sponsored by Bioarchaeology Interest Group [BIG])

Considering over a decade of research on the bioarchaeology of care and disability, and a half century of paleopathology, the prevalence of healing and care in past societies is well-established. However, (bio)archaeology has yet to reckon with the cultural assumptions that underpin the study of care, and the difficulties that these assumptions present for researchers embedded in our own historical contexts. These issues are particularly urgent for investigators in the Americas, where anthropological and medical concepts of disease were built through the colonial study of marginalized groups, whose perspectives on their own experiences of health were often misrepresented or omitted altogether. We explore these themes with a focus on bodily intervention and modification that are, could be, or have been erroneously construed as healing and care, including cranial and dental modification (head-shaping; dental-filing, drilling, adornment, ablation), trepanation, amputation, bone-setting, psychoactive substance use, and tattooing. Specifically, we ask: What constitutes care? What is (paleo)pathological? Who and what needs to be healed? What has historically been considered pathological but was actually considered "healthy" in context—and vice versa? How might we measure care, particularly if the treated condition does not align with modern criteria of disability, and can we compare different forms of care? *****This presentation will include images of human remains.**

[344] Symposium • Understanding the Mexican Gulf Coast Postclassic

The Gulf Coast Postclassic period is something of an enigma, eclipsed by synchronic focus on the imperial Aztecs and diachronic studies of earlier Olmec and Classic Veracruz civilizations. Tacked on as an addendum

to narratives perpetuated by the Spanish, our knowledge of indigenous Gulf Coast cultures (ca. 1100–1521) is a patchwork, shedding little light on the region. In his *Archaeological Synthesis of Southern Veracruz and Tabasco* (1965) Michael Coe laments, “So scanty is our information on the period as a whole that hardly one example of architectural construction can be ascribed to it.” And yet exploring the coastal lowlands from the Huasteca to the northwestern boundaries of southern Veracruz, Postclassic sites are abundantly in evidence. Drawing on ethnohistory, archaeology, and art, this session examines the Mexican Gulf from the Classic collapse to the onset of the Spanish invasion, with special attention to key players, groups, locations, cultural symbols and remains. From interdisciplinary perspectives of its varied subregions, we hope to begin compiling a new archaeological synthesis of this oft-neglected place in time.

[345] Symposium • Twenty Thousand Leagues (and Years!) under the Sea: Exploring the Place of Seashores in Prehistoric Socioeconomic Systems

In today's coastal regions, our socioeconomic models often fail to integrate the place of maritime environments. Numerous ethnographic examples often show specificities of these environments in terms of mobility and social organization. Depending on the period studied / specific features of the continental shelf, prehistoric coastlines may have been located a few hundred miles from the present-day coastline, which limits our thinking. Should we give up and dismiss the role played by these submerged environments and sites? While it is imperative to be aware of this bias, it also seems possible today to feed this thinking. Indirectly it is possible to discuss the place of these environments through the study of diffusion of marine resources or by studying graphic depictions of these environments in continental sites. Directly, development of new geophysical and deep-sea exploration methods and tools is a great opportunity to look for the sites. This session looks at how we can better integrate the role of maritime environments in our overall understanding of prehistoric systems. It is open to hunter-gatherers' contexts for all periods/regions of the world and focuses as much on the detailed study of archaeological material as on methodological developments for the investigation of submerged sites.

[346] Symposium • From the Lab to the Field: Pioneering Approaches to Undergraduate Mentoring in Archaeology

(Sponsored by Archaeological Centers Coalition)

There is a growing recognition in the field of archaeology of the need to center diverse voices in research. However, the recruitment and retention of diverse scholars at every level, from undergraduate enrollment to the tenure track, remains a challenge. Access to mentoring is crucial to the success of marginalized and underrepresented students in academia. Within archaeology, mentoring is an important pathway for undergraduates into research and ultimately into graduate school and beyond. The mentoring of undergraduates occurs on many scales, from individual labs or research projects to department-wide programs or field schools. However, these efforts are often invisible to the people outside these projects. The opacity of the process of student mentorship at many levels is a barrier to entry for others and limits our collective growth in mentoring best practices in archaeology. The purpose of this session is to highlight the impact of mentoring on undergraduates in archaeology by showcasing a variety of mentoring efforts, particularly those by early career archaeologists and by historically marginalized scholars who currently are disproportionately responsible for mentoring underprivileged students. This discussion will generate conversation both about the importance of mentoring and how to successfully mentor the next generation of archaeologists.

[347] Symposium • Moving the Needle: Expanding the Discourse on Modern Archaeology in Oaxaca Part 2

The past two symposia, dedicated to “checking the pulse” of current research in Oaxaca, confirmed that archaeology in Oaxaca is as vibrant, collaborative, and cutting-edge as ever. Building on the growing momentum of the “Diálogos en Oaxaca Archaeology” collective, we seek this year to “move the needle” by further expanding the discourse on contemporary archaeological research in Oaxaca. In this symposium we present a group of Canadian, Mexican, and American archaeologists from across academic levels to discuss their ongoing research, upcoming projects, and persisting research questions and curiosities. Presenters from the field of archaeology and related disciplines will discuss their research from different regions, time periods,

and academic interests in Oaxaca. By continuing to dialogue with each other on a regular basis, we further advance towards our common goal of recording and preserving Oaxaca's history for future generations, while collaborating and supporting each other in the process.

[348] General Session • East Asian Technological Advances in Metal, Ceramic, and Bone

[349] General Session • New Discoveries and Interpretations in Mesoamerican Archaeology

[350] General Session • Global Landscape Archaeology

[351] Forum • (Wilshusen et al.): 40 Years of Anthropological Archaeology in the Northern US Southwest

The last 40 years in American archaeology have seen many changes in how we do archaeology and how we think about the past. In Southwest archaeology, Rich Wilshusen has been a core contributor to that change. Throughout his decades in contract archaeology, the academy, not-for-profit research organizations, and state and federal agencies, Rich steadily transformed our understanding of critical topics, ranging from the household to the region in scale and scope. Moreover, Rich has influenced three generations of Southwest archaeologists as a researcher, colleague, and mentor through his scholarship, service, and caring, good-hearted nature. This forum explores changes in the discipline through the lens of Rich's publications and collaborations, reflecting on what we've learned, how we've changed, and where we might be going in the future.

[352] Forum • Four Decades of NAGPRA Part 3: Where It All Began: Celebrating Six Years of North American NAGPRA Communities of Practice

Six years ago, at the University of Denver, the first NAGPRA Community of Practice was established with the mission to provide a space for NAGPRA practitioners to share experiences, information, concerns, and successes among institutions and Tribal/Native Nations involved in repatriation of ancestral remains and belongings. This original effort became the role model for the formation of 10 regional Communities of Practice across North America. Each regional Community of Practice focuses on the unique historical and archaeological context for collections within their area. This forum brings together representatives from multiple regional groups to share information on group priorities, and to discuss best practices when working collaboratively with archaeologists, museum and governmental agencies, and Indigenous communities, tribes, and nations.

[353] General Session • Iconography in the American Southwest

[354] General Session • New Investigations of the Inka

[361] Symposium • Multidisciplinary Investigations of a Transitional Early Classic Period Hohokam Trash Mound at AZ U:9:319(ASM), Mesa, Arizona

This symposium presents the results of investigations of a transitional early Classic period Hohokam trash mound at the site of AZ U:9:319(ASM) employing a variety of approaches. This site is located on a small plot of undeveloped land in the Mesa Cemetery in north-central Mesa, Arizona. In antiquity this context was situated on the far northeastern margins of the large residential community associated with the Mesa Grande platform mound complex. Although the upper layers of the trash mound that encompasses much of this site were disturbed by modern activities, the lower ~40–70 cm were intact. Excavations of these intact deposits yielded a rich artifact assemblage allowing our research team to make insights about domestic life in an early Classic period community. The papers in this symposium report on the analyses of artifact distribution patterns, ceramic pastes, red-on-buff pottery painted design elements, projectile point morphology, environmental DNA (eDNA), and macrobotanical remains. The results of these analyses allow us to estimate the time period associated with the deposition of refuse in this trash mound and make interpretations about activities that led to the formation of the feature, plant use at the site, and the natural environment of the context in antiquity.

[362] Symposium • Reemerging from the Ancient and Current Pasts: Recent Archaeological and Ethnographic Research in Southeastern Utah

Over the last decade the state of archaeological and ethnographic research has changed dramatically with the realignment of research priorities resulting from the creation of the Bears Ears National Monument, other changes in federal land management strategies and goals, and the isolation and disruptions caused by the global pandemic. Throughout this tumultuous time scholars conducting academic, contract, and conservation-based research have made herculean efforts to maintain, develop, and report on new and ongoing research on public lands. While adapting to these adverse conditions has been challenging, many researchers in the area have developed new and innovative ways of documenting and interpreting the past with the use of ethnographic landscape studies, collaborative research with descendant communities, large-scale radiocarbon dating projects, dendrochronology, landscape and object photogrammetry, and virtual reality tours, to name a few. This session brings together researchers and stakeholders to discuss recent archaeological, anthropological, and ethnographic research in southeastern Utah. The goal of the session is to bring researchers together to reforge collaborative partnerships and working relationships and to see what new patterns are emerging (and reemerging) in the archaeological and ethnographic fields in the area.

[363] Forum • Creating Opportunities: A Conversation on the Impacts, Needs, and Future Directions of the SAA Native American Scholarships and the Student Excellence in Archaeology Award

This forum is both a celebration and an honest discussion on the impact, continued needs, and future directions of two key initiatives within the SAA to promote then equitable access and support of a diverse body of archaeology students and young scholars: the Native American Scholarships endowment, first established in 1988, and the Student Excellence in Archaeology Scholarship (formerly the Historically Underrepresented Groups Scholarship), established in 2010. Both of these programs have gone through successes and challenges and expanded to create more opportunities to support Indigenous and minoritized students within our discipline. We bring together current leadership, former awardees, and stakeholders in the program in order to highlight that, even if an imperfect solution to structural problems, these programs have had an impact on the new generations of archaeologists they have supported. In doing so, we celebrate our awardees and hope to establish a broader conversation with the SAA's membership to guarantee the continued support and growth of both programs.

[364] General Session • Archaeology of the Great Plains

[365] General Session • The Colonial Period in the (North)eastern United States

[366] Lightning Round • Indigenous Roads and Nodes of the Americas: Urban Processes, Peoples, Places, and Traditions

How did prehispanic American peoples construct, maintain, and engage with the roads and nodes that they built? Infrastructures of movement (e.g., roads) and of locations (e.g., nodes) analyzed in this session provide a framework for broad syntheses of urbanized peoples, places, and traditions from various times and regions, while employing both *head* and *stomach* perspectives. The *head* perspective provides an analytical lens for focusing on ideology, beliefs, politics, and the social dynamics of roads and nodes, while the *stomach* perspective provides an analytical lens for focusing on food, production, trade, exchange, and the energy systems of those same roads and nodes. Taken together, these two perspectives help provide a way of viewing ancient cities through their peoples, their built environments, and the actions of their residents. Regional examples from throughout Mesoamerica, South America, the US Southwest, and the US Southeast are augmented by the contrasting perspectives of researchers from outside of American contexts to provide a more holistic view of urbanism. The roads and nodes of these indigenous cities—and the *stomach* and *head* perspectives employed in this research—provide new insights into essential aspects of urbanized processes, forms, structures, and peoples.

[367] Symposium • Indigenous Practices and Material Culture: 70 Years of Mission Life

Mission San Antonio de Valero was established at its third and final site in 1724. Through its presence, the

offer of an abstract vision of the afterlife, the invitation of soldiers, and perhaps a stable food supply, it attracted hundreds of indigenous occupants from as many as 104 named indigenous groups. The mission was secularized in 1793. Today, it is assumed that descendants of the Indigenous population still occupy the neighborhoods surrounding the missions. In this symposium, we focus on Mission San Antonio de Valero to examine the influence of the mission's religious practices, vocational training, and daily life practices on the Indigenous population. We contrast the pre-mission practices of Indigenous groups to the practices they continued to follow while in the missions to determine what influence, if any, the missionaries had on the Indigenous populations in their care. The participants in the symposium will examine aspects of the indigenous material culture recovered from archaeological investigations to determine continuities and breaks in traditional practices. The participants will also examine the archival record of this mission and others in the Upper San Antonio River basin to forge behavioral correlates of traditional practices and material expressions of those practices in mission contexts.

[368] Symposium • (Re)Imagining Rock Art Research

Rock art researchers have historically been interested in the meaning expressed by images on rock surfaces, focusing their analyses on panels of geometric, abstract, and figurative forms. This approach often leads to the separation of rock art images from their relationships with ancestral creators and viewers, ecological and cultural landscapes, and other human and nonhuman beings. In other words, by contextualizing these features in strictly archaeological ontologies, we divorce them from the ontology(ies) of their creators. In this session, we ask ourselves to reconsider the many forms of relationships that rock art images may have within their social and cultural contexts. This approach encourages us to reorient our research questions from “what does rock art *mean*?” to “how do rock art images *relate* to the larger social world of the past?” In doing so, we seek to illuminate ways in which rock art has agency and impact within that world. We invite archaeologists working with rock “art” images of any form to explore their relationships with people, places, and other aspects of the past as a means to better discern what the images are doing, and why that may be.

[369] Symposium • Geoarchaeology within the Context of Cultural Resource Management (CRM) Today Part 2

(Sponsored by Geoarchaeology Interest Group)

Part 2: In the United States, professional geoarchaeologists have conducted investigations in cultural resource management (CRM) for more than 40 years. Some work as independent subcontractors, others as part of CRM, environmental, or engineering firms. In recent years, requirements for geoarchaeological analyses and fieldwork (e.g., buried archaeological site sensitive modeling, deep testing) have increased significantly although demands and regulatory standards and practices still vary widely across the country. The trend and momentum continue to accelerate, indicating trained geoarchaeologists will continue to be in demand. This session highlights the work of contemporary CRM geoarchaeologists who are actively practicing research and fieldwork. Their papers illustrate the many challenges and archaeological research questions that can be addressed by the integration of the geosciences and archaeology and the benefits of this integration for any archaeological investigation and successful project management and completion.

[370] Symposium • Issues in Regional Journal Publishing in the Americas

In this session we consider the role of regional journals in archaeological and scholarly publishing. Archaeological work is traditionally published in technical reports, academic monograph series, edited and authored books, and in journals. Regional journals play a communications role between the international journals that prioritize publishing transformative method and theory and new discoveries and their high-distribution, high-rejection rates, and low-distribution data-rich technical reports. Regional journals may be venues for authors who work in the academy and those working in cultural/heritage resource management, nonprofit settings, museums, and in other disciplines. In this session we invite the editors and managers of regional journals to introduce their publications describing their missions, their authors and readers, peer review models, funding sources, and distribution platforms. We ask them to consider how regional journals address issues of respectful publishing, open access and article processing charges, language barriers, diversity in authorship, citation and indexing, archiving, or sustainability.

[371] Symposium • Many New Worlds: Alternative Global Histories through Material Stories

Popular understanding of global histories continue to be dominated by historical text-based narratives of a modern world. This session seeks to highlight how narratives based on high-resolution and often hyperlocal material analyses provide alternative, and often antithetical, narratives surrounding the actions and agencies of individuals and communities during times of global “encounter.” Building out of an AHRC project of the same name that tracks how within days of arrival in the Caribbean, Europeans are eating indigenous foods, wearing indigenous clothing, and sleeping in indigenous hammocks, this session opens out such material dialogues to archaeologists working around the world on themes of alternative pasts and futures related to colonial trajectories. We welcome conversations revisiting the early modern world through alternative lenses, seeking in particular to consider how these material stories can be most effectively shared and communicated out to broader audiences to help rewrite popular understandings of global history. Contributors at the frontline of material science provide their alternative starting points to help imagine different realities. This session seeks to position such work as central to understanding the many new worlds that exist, rather than the literary one on which so much of global history is understood.

[372] Symposium • *MW From Channel Flakes to Bison Jumps: Current Investigations of the Terminal Pleistocene / Early Holocene Archaeological Record in Southern Idaho

As early as the Younger Dryas, southern Idaho’s archaeological record has reflected the importance of bison in subsistence. Recent investigations of the Layer 18 assemblage from Owl Cave provide compelling evidence for a Folsom/bison association. These studies also resolve decades-old misinterpretations of the cave’s depositional environment and identify conditions that likely resulted in artifact contamination. Although Owl Cave is the only site in the region to produce fluted points in a buried context, Folsom points have been recovered from nearly 50 surface localities, including a Folsom production site. These localities are concentrated in the wetlands of the Lake Terreton Basin (LTB), which also contains a very high density of Haskett points. XRF analyses suggest disparity in the mobility and land-use patterns associated with these technologies. The mass kill in Owl Cave (Layer 16) indicates that, during the early Holocene, the cave continued to be utilized for the purpose of dispatching/processing bison, with XRF results supporting the possibility of an organized, communal hunt. As bison populations declined in the region during the middle Holocene, communal hunts were no longer effective. However, a surge in bison numbers during the Little Ice Age appears to have encouraged the reemployment of jumps/mass kills.

[373] Symposium • Animal Matters: Ethics in Zooarchaeology from Discovery to Display

(Sponsored by Zooarchaeology Interest Group)

Increasingly, ethics are at the forefront of conversations in archaeology; however, the discussion of ethics in zooarchaeology has been comparatively limited, especially in larger, communal spaces like the SAA annual meetings. This symposium aims to bring these conversations into focus through the discussion of practical and theoretical ethics in the discipline. Possible topics include the ethics of destructive sampling, live animal actualistic studies, obtaining and curating collections, pets as comparative materials, the emotional experience of the analyst, relational ontologies, anthropocentric versus animal-centric viewpoints, and the broader comparison of animal versus human remains. This session seeks to incorporate diverse and intersectional perspectives to open a dialogue on the current status of ethics in zooarchaeology as well as directions for the future.

[374] Symposium • From Ores to Ontologies: Recent Research in South American Archaeometallurgy

Over the last century, scientific and anthropological research on precolumbian mining and metallurgy have elucidated many aspects of the *chaînes opératoires* underwriting the production and consumption of metals, as well as the social and religious significance of metallurgy and metal objects. Evidence points to the use of geologically native metals and alloys in the Andean region of South America since at least the second millennium BCE or earlier. A heartland of metallurgical innovation in the New World, metallurgy would later spread to northern South America, the Caribbean, Central America, and Western Mexico. However, much remains to be understood about South American metallurgy, especially how mining and smelting processes, as well as the ideological significance of metals, varied synchronically and diachronically throughout the

continent. In this symposium, scholars present new research on these issues and the theoretical and methodological approaches currently employed in South American archaeometallurgy. *****This session will include images of human remains.**

[375] Symposium • Tree-Ring Materials as a Basis for Cultural Interpretations

Tree-ring, or dendroarchaeological, data are justly celebrated for supporting the calendar dating of structures, sites, pottery types, and other archaeological things, the construction of archaeological chronologies, and the reconstruction of past climatic conditions. These data can also be used for “cultural interpretation,” an approach pioneered by William J. Robinson in his 1967 dissertation (this symposium’s namesake). Robinson analyzed attributes of tree-ring samples that were not inherently chronological—tree species, terminal ring characteristics, and technological indicators—to infer patterning in the behavior of the people who used the dated materials. His analyses benefited, of course, from the fact that the analyzed samples were in fact tree-ring dated. Papers in this symposium expand on Robinson’s approach, showing how patterning in a broader range of tree-ring evidence, drawn from a variety of cultural, temporal, and geographic contexts, can reflect and reveal patterning in a comparably broad range of past human behavior. As this symposium demonstrates, tree-ring data continue to be relevant to more than just chronological and climatic analysis in archaeology.

[376] Symposium • Complex Human-Animal Interactions in the Americas

Through time, humans developed a multitude of strategies to assume increasing control over the animal resources they relied on, and through these strategies, they fundamentally altered how they interacted with and impacted their environment. The topic of animal management and domestication is therefore of crucial importance to understanding past human societies and evolving human-animal relationships. Animal domestication independently emerged on several continents, but there is some divergence in how animal management and domestication unfolded in the Americas versus Africa and Eurasia. The proposed symposium will bring together researchers investigating diverse aspects of past animal management in the Americas (from precolonial through colonial times) including taming, provisioning, captive rearing, flock/herd management, and domestication. Through these diverse perspectives on complex human-animal interactions, we hope to generate discussion regarding how human-animal interactions in the Americas compare and contrast to practices/processes identified in other geographic regions.

[377] Symposium • Digging through the Decades: A 90-Year Retrospective on American Archaeology; Biennial Gordon Willey Session in the History of Archaeology

(Sponsored by History of Archaeology Interest Group.)

This session reflects on how American archaeology has transformed over the last 90 years. We begin with the 1930s, during the time America was still in the depths of the Great Depression and when the Society for American Archaeology was founded. Major technological and theoretical developments will be considered and how these impact the practice of American archaeology today. Individual contributions span more than one decade as appropriate.

[378] Symposium • Hidden Gems: New Research on Lapidary, Lapidarists, and Polished Stone and Shell in the Americas

Lapidary—the art of cutting, machining, grinding, and polishing hard materials such as stone and shell—is an artform widely practiced throughout the ancient Americas. Lapidarists from the Eastern Woodlands, the American Southwest, Mesoamerica, the Isthmo-Colombian area, the Antilles, Amazonia, and the Andes all made and exchanged a variety of objects of hard stone and shell, including beadwork, mosaics, small sculptures, and carved adornments. While considerable study has been conducted on specific types of lapidary objects and on important materials including jadeite, magnetite, ilmenite, hematite, and *Spondylus* shell, many other lapidary objects and materials exist and merit consideration. This session explores new research on lapidary, lapidarists, and the purposes and meanings of lapidary objects produced by precolonial artisans. Examinations of new archaeological finds and explorations of little-studied materials, artifacts, and techniques are welcome, as are new hypotheses, reexaminations, and reinterpretations of well-known objects, significant materials, and previous research.

[379] Symposium • Material Aspects of Global Conflict

Communities caught up in global conflict can be transformed not just by the conflict itself but also by the massive influx of material goods that change many aspects of culture, from the local distribution of power to foodways. Approaches to global conflict that focus on such communities require long-term, multiscale, and multidisciplinary research. The papers in this session examine a variety of wars, ranging from those of colonial expansion in North America to Vietnam, using archaeological, bioarchaeological, engineering, and historical approaches to develop an understanding of how communities are changed by global conflict.

[380] Symposium • Ritual Closure: A Global Perspective

Ritual closure, structured deposits, and related ceremonially charged strata, once controversial inferences, are now expected in many archaeological contexts. In the past, ritual and religious explanations received lower priority in archaeological studies; however, more recently, archaeologists have used them to provide robust explanations of stratigraphic evidence in burned and buried houses, temples, earthworks, shrines, and other features across the globe. Scholars in this symposium offer case studies from around the world including Africa, West Asia, Eastern and Western Europe, and North, Central, and South America. This global perspective begs new questions such as: How can we track migration through ritual closure practices? How can we elaborate or add to classifications such as foundation and closure/termination deposits? What is the relationship between materials in charged strata and exchange networks? Do charged deposits mark social changes associated with climate change? Clearly these and other questions require a broad comparison of cultures in different places and scales of social organization. In this symposium we begin such study.

***This session will include images of human remains.

[381] Symposium • The Subterranean in Mesoamerican Sacred Landscapes: A Multidisciplinary Assessment

Because of the centrality of the sacred, animate *Earth* in Amerindian indigenous cosmology, subterranean landscape features are magnets that attract people to them and structure activities around themselves. Their importance is reflected in the increasing numbers of natural and constructed subterranean features incorporated into site cores. Many constructed spaces were produced through extractive activities that are only understandable as projects designed to create subterranean features. Elements closely associated with the sacred *Earth*, such as cave formations, draw on that same power and thus are intrinsically significant artifacts that require greater interpretive attention when recovered outside of their natural context. Additionally, subterranean features are particularly significant in holding purely ritual assemblages that represent the field's best context for studying the archaeology of religion. This session brings together the most recent studies and approaches to the Mesoamerican subterranean. ***This session will include images of human remains.

[382] Symposium • Early Human Dynamics in Arid and Mountain Environments of the Americas

In the Late Pleistocene and Early Holocene, people expanded into diverse ecosystems across the Americas, including places often characterized as marginal, harsh, or extreme. Recent and ongoing interdisciplinary and international investigations have demonstrated the historical underestimation of human relationships with these landscapes. This session builds on this new understanding and responds to recent calls to expand intercontinental dialogues on peopling and settlement processes in the Americas by focusing on the Pleistocene–Holocene transition in arid and mountain environments. By featuring ecologically parallel but latitudinally disparate regions, we seek to establish the present state of research, discuss methodological advancements, and identify promising future directions and collaborations. Papers will focus on social and material adaptations, including organic and inorganic technologies, chronology and climate, exploration and settlement processes, foodways, social theories, and new methods.

[383] Symposium • From Origins to Collapses: New Insights in the Cultural and Natural Processes of the Mirador-Calakmul Karst Basin

Recent archaeological investigations in the Mirador-Calakmul Karst Basin system of northern Guatemala and southern Campeche, Mexico, have demonstrated new insights in the formation of complex society that

emerged by the early Middle Preclassic period (ca. 1000 BCE). This area developed an extraordinary cultural apogee by the Late Preclassic period (ca. 300 BCE) with a major demographic demise by about 150 CE. The identification of early remains (Pre-Mamom) by about 1000–800 BCE indicates a point of origin and a continuity of an accelerated cultural process, resulting in a proliferation of art, architecture, and communication systems throughout the entirety of the basin, including E-Groups, triadic architectural formats, extensive causeways, terraces, reservoirs, dams, canals, defensive walls, and moats. Analyses of architectural art and varied architectural groups, settlement distributions, extensive contiguous lidar studies, and artifact assemblages associated with technological evaluations such as phytoliths; geological, botanical, and biological studies; lithics; bone; DNA; isotopes; ceramics; and radiometric dating provide new insights in the cultural florescence in the basin. The dynamics of the social-political and economic prowess also ultimately resulted in a demographic demise, providing fresh perspectives of cultural and environmental processes associated with the early Maya. *****This session will include images of human remains.**

[384] Symposium • Variability within the Aurignacian: New Research Outlooks

Since the early twentieth century, debates concerning the Aurignacian have focused largely on its definition and chronology. Research over the past three decades has helped ground both of these dimensions on much more solid empirical foundations, especially as concerns the reevaluation of material from classic sites complemented by the excavation of new archaeological deposits that have refined our understanding of its nature. This has led to a growing appreciation of the fact that, even at sites where it is well dated and characterized, Aurignacian assemblages indicate a substantial amount of internal variability that opens up anthropological inquiry into human behavior over its course, eschewing prime movers and one-size-fits-all explanations. This session seeks to bring together scholars to discuss how to document, study, and interpret this dynamism as well as to present new deposits likely to inform us about the macroscale level of variability within the Aurignacian technocomplex. Discussions assessing variability in dimensions other than lithic technology are particularly welcome.

[385] Symposium • Multiscale Data and the History of Human Development in the US Southwest

It is increasingly clear that sustainable and inclusive human development is a primary challenge of our time. Most investigations of this process in sustainability science have assumed that human development began with the Industrial Revolution, but the archaeological record provides many examples of human development that proceeded in the absence of fossil fuel use. What does the archaeological record of the US Southwest reveal about the fundamental processes of sustainable and inclusive human development and the specific ways Indigenous societies promoted climate adaptation? The papers in this session leverage cyberSW and SKOPE, an interoperable research infrastructure that integrates archaeological and paleoenvironmental data from across the greater US Southwest, to address these questions.

[386] Symposium • New Advances in Cusco Archaeology: From the Formative to the Late Horizon

Cusco has become synonymous with Tawantinsuyu's political core and place of origin. But the Inkas' occupation of this region was only one development in a long history of sociopolitical change situated locally in the broader Cusco region. The cumulative impact of research projects executed through international collaboration has facilitated unprecedented understanding of this topic. Over a century of multidisciplinary archaeology has allowed us to transcend the narrow purview of historical chronicles. Now, we can continue expanding our scope to understand how people made their own histories during more than two millennia across the Cusco region. This session brings together new research from across the Cusco region, using diverse theoretical perspectives and methodological approaches. Participants will present novel insights on the coalescence of the earliest communities, local responses to Wari imperialism, the sociopolitical arena in which Inka state formation occurred, and Inka efforts to establish hegemony in the Cusco region. More than a decade since the last SAA session on archaeology in the Cusco region, we will take account of dissonances and patterns to generate fresh ideas on what the big questions are for archaeologists moving forward.

*****This session will include images of human remains.**

[387] Symposium • Northern Belize Archaic Period and Sahara Dust

Mesoamerica's Archaic period (10,000–4000/3000 BP) consists of crucial, yet relatively understudied, millennia when the foundation for food production and sedentary life were established. Recent work in northern Belize is providing important new data of tropical lowland adaptation and present new hypotheses to the preconditions for the villages and cities during the subsequent Formative period. This session presents new data acquired by the Belize Archaic Project in the Progresso Lagoon region that has documented numerous open-air sites. These archaeological settlement patterns are complemented by environmental data (pollen, charcoal, and isotopic) and climate modeling. Additional projects undertaken nearby reveal different local adaptations but together establish the region as a hotspot of new information of Mesoamerica's elusive Archaic period.

[388] Forum • Networking Archaeological Data and Communities: Reports from the Institute and Future Plans

Digital data increasingly inform how communities understand the present and the past. To make these understandings more democratic and accountable, the scholarly community needs to make data, and the skills and knowledge to make sense of data, more broadly accessible. Since 2023, the NEH-funded professional development program *Networking Archaeological Data and Communities* (NADAC) has provided opportunities for a select group of individuals who represent and serve diverse communities to develop critical skills around data literacy. Working with a cohort of expert faculty members, participants have developed ethical, feasible data management plans; made progress on a data-driven research project for professional communication, public engagement, or instruction; and contributed to a forthcoming collaborative publication, the *Data Literacy for Archaeologists Practice Guide*. The *Practice Guide* will provide resources for educators and users interested in learning more about how to best teach and work with archaeological data and incorporate case studies based on the individual projects developed by the NADAC cohort. NADAC participants will share their ongoing work and discuss how their contributions will inform the *Practice Guide*. The forum will also solicit feedback from the SAA community to ensure that the *Practice Guide* will be a usable and valuable resource.

[389] General Session • Underwater Archaeology around the World**[390] General Session • Digital Archaeology from around the World****[391] Symposium • Current Methods and Applications to Chert Sourcing: Case Studies from across the Americas**

(Sponsored by Society for Economic Anthropology)

Chert artifacts remain one of the most common raw material types recovered from archaeological excavations and are a core line of evidence when reconstructing past interaction networks and economic systems. Due to the geochemical and petrographic heterogeneity of chert, raw material, and artifacts have proven to be significantly more difficult to characterize than other material types. However, methodological and technological developments over the last two decades that focus on a multimethod approach have proven successful in characterizing chert from a number of different geographical areas. Techniques such as neutron activation analysis (INAA), laser ablation–inductively coupled plasma–mass spectrometry (LA-ICP-MS), X-ray fluorescence spectrometry (XRF), reflectance spectrometry, and petrographic analysis have all been successfully applied to chert sourcing. This session explores these techniques, applications, and the methodological developments that have been applied to chert sourcing research in recent years through a number of case studies from across the Americas.

[392] Symposium • New Materials and New Insights for Our Understanding of the First Emperor's Mausoleum and Early Imperial China

Rich material remains from the Qin First Emperor's mausoleum complex—some well-known but others underappreciated—are revolutionizing our view of this early phase of empire in ancient China. This session provides an opportunity to combine multidisciplinary approaches to material evidence, spanning pottery and bronze, but also including iron, gold, silver, and wood to which less attention has been paid before. We aim

to investigate the use of natural resources, technological know-how, and state-level organization, with a view to understanding how these all offer insight into early imperial China. We expect this session to foster new methodologies and theoretical frameworks with relevance to our understanding of the Qin First Emperor and early empire in China, to the wider study of major changes across Eurasia in the first millennium BCE and to the study of other early complex societies.

[393] Symposium • Interregional Relations of the Zoque Province and Its Surrounding Areas

Human communities do not develop in isolation; they are established, used, and have a great diversity of networks that help them grow. That network could be a simple connection with the local members to an interregional system where people, materials/artifacts, and ideas/concepts travel. In this particular case, the Zoque province from southern Mexico that is still poorly researched is an important link to understanding the cultural relationships established between central Mexico, the Gulf of Mexico, the southern Pacific province, and the Maya region through the Central Depression, or the Zoque region. This goal of this symposium is to synthesize past research in the region and new work in the area, as well as future studies.

[394] Symposium • Materialidades, representaciones, vegetales y animales del mundo colonial de Andinoamérica y Mesoamérica

Los grupos humanos coloniales en Andinoamérica y Mesoamérica enfrentaron un mundo en cambio, modelado por una visión esencialista del ser impuesta por los grupos dominantes hispanos, europeos y luego los Estados modernos. Esta perspectiva buscó “integrar” a las comunidades indígenas, tratándolas como monolíticas y estáticas, en lugar de reconocer su diversidad y construcción continua. Sin embargo, existe todo un conjunto de cultura material, representaciones, vegetales y animales insertos en las tradiciones, economías, literaturas y artes coloniales que se han estudiado escasamente y que dan a conocer la diversidad de formas de habitar en el mundo colonial. El propósito de este simposio es abordar interdisciplinariamente las trayectorias de los diversos elementos culturales introducidos post-hispánico o colonial y su impacto en prácticas productivas, tecnológicas, culinarias, medicinales, ornamentales y rituales en Andinoamérica y Mesoamérica. Se propone discutir la visión colonial sobre la cultura material, incorporando una perspectiva que considere la reciprocidad, el intercambio, los conocimientos locales y los procesos de resistencia y revitalización. Esta lectura alternativa permitirá entender mejor las respuestas de los grupos humanos ante la introducción de nuevas tecnologías, sabores y saberes, en su contexto cultural y ecológico.

Individual Abstracts of the 2025 SAA 90th Annual Meeting, Denver, Colorado

The ANNUAL MEETING of the Society for American Archaeology provides a forum for the dissemination of knowledge and discussion. The views expressed at the sessions are solely those of the speakers and the Society does not endorse, approve, or censor them. Descriptions of events and titles are those of the organizers, not the Society.

Participants—Individual Abstracts

Abad Lezama, Tatiana Cindy [172] see Mayta Campos, Daniel

Abderemane, Bourhane [59] see Crowther, Alison

Acebo, Nathan (University of Connecticut)

[110] *Reconciliation and Indigenous Archaeology: On Care for and the Futurity of Káamalam (First Peoples)*
In 2019, the state of California issued an unprecedented formal apology to California's Indigenous peoples, followed by executive order N-15-19 establishing the California Truth and Healing Council (CTCH) to document historical and ongoing settler abuses against Native Californians. Unlike other reconciliation efforts abroad, archaeology has not played a significant role in said testimonial efforts. In addition to outlining the need for testimonies on acts of genocide, land dispossession, and assimilation, CTCH Tribal consultation explicitly calls for a reassessment of archaeology by examining stagnant repatriation programs and the broad lack of deference to Indigenous knowledge. Archaeologists have much accounting to do, and yet, as noted by archaeologist Peter Nelson (Federated Indians of Graton Rancheria), "Where have all the Anthros gone once the regulations and ethical codes mandate that we be partners rather than data?" (2021:471). This paper examines how Indigenous Archaeology is positioned to address violent histories of settler colonialism while animating Indigenous futurity in alternative processes of recognition and repair. I discuss how the Enduring Indigenous Homelands Project (EIHP; in partnership with the Pechanga Band of Luiseño Indians) practices deference to Indigenous values of care for the ancestors and First Peoples through repatriation and Indigenous cartography as historical testimony.

Aceituno, Francisco (University of Antioquia)

[239] *The Peopling of the Colombian Amazon: A Journey to the Lowlands*
Recent archaeological excavations in several rockshelters in the Serranía La Lindosa demonstrate that the Colombian Amazon was occupied at the end of the Ice Age at a time of climatic transition. The archaeological record indicates a sustained occupation since the arrival of the first human groups in this transitional zone between Amazonia and Orinoco. Archaeological data are presented and aspects of chronology, site formation processes, settlement pattern and mobility, geographical origin, and management of tropical forest resources in the study area are discussed. A discussion will also be made integrating the data into the early archaeology of northern South America and the Amazon Basin.

Acero-Shapiama, Erick (Programa de Investigación Arqueológica Chavín de Huántar), and Lisseth Rojas-Pelayo (University of Florida)

[159] *Chavín de Huántar: Un modelo de gestión para la integración de esfuerzos públicos y privados en la conservación cultural y el desarrollo social*
Chavín de Huántar, ubicado en la región de Áncash, fue declarado Patrimonio Mundial por la UNESCO en 1985. Reconocido como uno de los sitios más importantes del Perú prehispánico, está actualmente bajo la gestión del Estado, a través del Ministerio de Cultura. No obstante, desde finales de la década de 1990, que el Programa de Investigación Arqueológica y Conservación de Chavín de Huántar (PRIACCDH), liderado por el Dr. John W. Rick y la arqueóloga peruana Rosa M. De Rick, realizan esfuerzos que han sido fundamentales en la investigación, conservación y preservación del sitio. A lo largo de más de 30 años, el PRIACCDH ha contribuido significativamente al conocimiento de la historia prehispánica de Chavín, así como a su conservación y difusión, con el respaldo del sector privado. Además de sus labores de investigación y conservación, han implementado iniciativas de capacitación y talleres que han revitalizado el conocimiento y fomento de prácticas tradicionales entre la población local. Esta investigación busca resaltar la importancia del PRIACCDH, mostrando cómo su modelo de gestión cultural privada ha empleado diversas herramientas y estrategias para sostener y ampliar sus actividades, impulsando tanto directa como indirectamente el desarrollo turístico, en beneficio de las generaciones futuras.

Presentations and posters that were officially withdrawn by March 26, 2025, have been marked as [WITHDRAWN] in the Individual Abstracts; however, these presentation/poster placeholders will still appear in the Final Program. Updated information regarding withdrawals will be provided in Daily Digest email/app updates during the meeting.

Acero-Shapiama, Erick [64] see Roberts, Jacob
Acero-Shapiama, Erick [331] see Rojas-Pelayo, Lisseth
Acero-Shapiama, Erick [182] see Tomczyk, Weronika

Aceves, Andrew (University of Colorado, Boulder), and Gerardo Gutiérrez (University of Colorado, Boulder)

[242] *Contexto geológico, topografía y pigmentos de la Cueva de las Manitas, Oaxaca*

En esta ponencia presentaremos el contexto geológico y el levantamiento topográfico de la cueva de las manitas por medio de fotogrametría, así como el resultado preliminar de los materiales colorantes y posible temporalidad.

Acosta-Ochoa, Guillermo [291] see Menéndez Iglesias, Beatriz

Adam, Manda (University of Texas, Austin), Patricia Neuhoff-Malorzo, and SJ Casillas (University of Colorado, Denver)

[52] *New Developments at Colha and Tzak Naab: Geophysical Survey and Faunal Remains*

During the summers of 2023 and 2024, new archaeological efforts were undertaken at the ancient Maya sites of Colha and Tzak Naab in northern Belize. At Colha in 2023, a Postclassic (1000–1500 CE) midden was uncovered and magnetometry surveys were completed in the main plaza and south of the main plaza to complement excavations. Magnetometry survey was also utilized at Tzak Naab in 2023 and this survey was ground truthed in 2024. The focus of this paper will be threefold: (1) Present an overview of the midden excavations and new faunal data from the Postclassic midden. The faunal data provides new insights into Postclassic foodways. The zooarchaeological analysis offers insights into taphonomic processes including surface modification marks, contributing to a deeper understanding of Postclassic foodways. (2) Discuss magnetometry survey collected from Colha and how the survey data will aid future excavations (3) Provide an overview of field efforts at Tzak Naab to train students in magnetometry survey in 2023 and search for previous construction phases below the ground surface. Additionally, this part of the presentation will discuss ground truthing efforts in 2024, the results of these efforts, and how this new information will help guide future excavations at Tzak Naab.

Adams, Jaimie (Eastern New Mexico University)

[127] *The Role of Ground Stone Artifacts in Ancient North American Cultural Adaptation: Insights from the Hell Gap Site*

The Hell Gap site, primarily known for its extensive chipped stone tool assemblages, also produces a significant yet understudied collection of ground stone artifacts. This analysis focuses on the technological attributes, material selection, and use-wear patterns of a Hell Gap ground stone artifact, aspiring to explore their production and functional roles within ancient North American lifeways. Using a combination of macroscopic and microscopic analysis, this study examines the morphology, surface wear, and potential functions of a ground stone artifact. Ground stone tools from Hell Gap were likely used for processing plant materials, pigments, and small animal bones for use in daily activities. The selection of raw materials used for ground stone indicates an intentional use of specific lithic properties suited for grinding tasks. Understanding the parent material of the artifact provides valuable insights into economic practices and the movement of materials across the landscape. This analysis of a Hell Gap artifact will offer insights into ancient North American lifeways. This research contributes to a better understanding of how early inhabitants of the North American Plains adapted to their environment.

Adamson, Carla [345] see Mullins, Tyler

Addo-Mensah, Alfred [364] see Hadley, Alison

Adler, Daniel (University of Connecticut)

[175] *In the Shadow of Mountains: Our Evolving Understanding of Paleolithic Foragers in the South Caucasus and Armenian Highlands*

The South Caucasus and Armenian Highlands preserve a rich and diverse record of Pleistocene hominin behavior spanning all major technologies, ecologies, and environments. After 30 years of interdisciplinary research by various international teams, the nature and scope of these behaviors are coming into focus. In this talk I provide a summary of recent discoveries and developments at key sites in Georgia and Armenia that highlight the relevance of the region to ongoing debates regarding the earliest expansion of hominins out of Africa, the nature of technological evolution and transitions, and hominin expansions and interactions at the Middle to Upper Paleolithic boundary. In each case, the scholarship of Steve Kuhn greatly influences the theories we employ, the questions we ask, the hypotheses we test, and the interpretations we offer.

Adler, Daniel [82] see Gill, Jayson

Adler, Michael (Southern Methodist University)

[339] *Balancing “Know” and “No”: Collaborative Community-Based Archaeogenetics Research and Indigenous Sovereignty*

One of the challenges in collaborative community-based anthropological research is finding mutually beneficial pathways for the host community, and those invited to conduct research, to simultaneously support both sovereignty (host community) and research integrity (outside researchers). For example, what happens if those invited to do collaborative research reach conclusions that run counter to, or contest, traditional understandings held by knowledge keepers within the community? This paper delves into ongoing archaeological and paleogenetic collaborative research that David Meltzer and colleagues have undertaken at the request of Picuris Pueblo, a federally recognized tribal nation in northern New Mexico. Concepts of tribal sovereignty, knowledge production, data sovereignty and community collaboration are discussed, and insights are offered concerning a community’s sovereign right to say “no” when collaborators present perspectives based on what they “know.”

Adnson, Isabelle

[227] *How Long Does It Take to Digitize Archaeological Legacy Data?*

From conception to disposal the life of archaeological data follows a cycle, like anything in nature, where its value depends on survival. The advent of technologies in the twentieth century marked a shift from analog data practices to digital practices. As the ease of data capture has created an analogous proliferation in digital datasets, the digitization of archaeological data is now ubiquitous. However, a substantial corpus of data from past research, or legacy data, has accumulated in archaeology. Legacy data is valuable for many reasons such as providing knowledge of site locations, the potential for re-use in aiding future research, and preserving information from vulnerable sites where further excavation would be damaging. Using an existing collection of legacy data, in the form of field notebooks, from an original field site near the village of Gulkana, Alaska, this study will describe a digitization method and its associated costs in detail to help answer the question, how long does it take to digitize archaeological legacy data? The process includes data transcription, analysis, and finally mapping in GIS. This research is central to the contemporary landscape of archaeology and aims to inspire similar efforts with other datasets.

Adovasio, J. M. (Senator John Heinz History Center)

[108] *The Role of Higher University Officials in the Closing of Anthropology Departments*

Though it remains difficult to account fully for the closing of anthropology departments in the United States and abroad and the concomitant reduction in the number of anthropology students, the roles of the president and provost in this process must be addressed. This paper examines the attitudes and views of higher university/college officials in the process of educating potential anthropology students.

Adriano Morán, Carmen Cristina [289] see McClung De Tapia, Emily

Aebersold, Luisa [109] see Krause, Samantha

Agardy, Savanna (Bureau of Land Management, Utah)

[327] *Building Partnerships and a Jungle Expedition: Archaeological and Mapping Efforts of the Chiquibul Cave System, Cayo District, Belize*

In April 2024, the US Department of the Interior (DOI), Belizean nonprofit Friends for Conservation and Development, and the Institute of Archaeology conducted a technical visit to the vast and remote Chiquibul Cave System (CCS). Located in Cayo District of Belize, the CCS totals approximately 65 km and contains not only outstanding karstic geology and biodiversity but also significant Mayan material culture. Due to difficulties in jurisdiction, international relations, and logistics, the CCS had not been extensively mapped or documented to date. To aid in these efforts, FCD requested assistance of the DOI-International Technical Assistance Program, which employs specialists from within DOI to support partner countries. Funded by USAID, DOI staff traveled to Belize to conduct fieldwork within the Kabal Entrance of the CCS. Goals were to gather high-quality, baseline data to inform management decisions, including potential sustainable tourism, and conduct staff training. Fieldwork resulted in 60 archaeological features and 22 notable artifacts documented, along with a 1.6-mile section of the cave mapped. Positive relationships were also built among collaborating agencies. This project is a preliminary step in an ongoing effort to best manage the CCS—one of the most unique and important cave systems in the world.

Agarwal, Sabrina [233] see Marrero Rosado, Jose

Agha, Andrew (Aghatech Industries LLC)

[337] *Plants, Proprietors, Plans, and People: Evidence of Synergy Between Early English Scientific Agricultural Experimentation, Enslaved African Knowledge, and Use of the Town Commons in the Early Carolina Colony*

My dissertation project revealed new links and evidence that early English science, supported by the Royal Society of London, was influential in the development of the Carolina colony's early agricultural endeavors. Two sites—an agricultural research station / Indigenous trading post (ca. 1675–1685), and the original town site of Charles Towne (1670–ca. 1685)—when paired with an extensive archival record, provide evidence that the Lords Proprietors' plans and orders to their colonists to plant specific experimental crops were indeed attempted as proven by the archaeobotanical record from intact contexts. Experimentation took place within the contentious and socially fraught town-and-common property regime theorized and implemented from England by the First Earl of Shaftesbury and his cohort, John Locke. This paper will highlight the last 18 years of archaeobotanical work conducted at these two early colonial sites and explain how enslaved Africans became unwilling “scientific technicians” as they forced alien plants into an even more alien environment, and in the process, discovered and propagated rice, Carolina's first cash crop. From this process, transplanted English Country estates were mutated into Carolina's first plantations.

Aguayo Ortiz, Elaine, Arion Mayes (San Diego State University), Arthur Joyce (University of Colorado, Boulder), and Akira Ichikawa

[290] *Sex and Gender in Bioarchaeology: Revisiting Methodology, Application of Different Perspectives, and the Role of Associated Funerary Objects at Río Viejo*

Bioarchaeologists create biological profiles of past individuals through skeletal analyses to provide an overall picture of who they may have been during life including aspects of identity such as sex and gender. However, there is growing criticism within bioarchaeology about the use and definition of these concepts, and their application and interpretation of daily lives. Sex and gender which are often based on Western concepts that have been historically used interchangeably in heteronormative societies. Applying these concepts to precontact populations is of concern because ethnographic and archaeological evidence indicates that gender identity is more complex. A recent bioarchaeological study of mortuary practices during the Classic to Postclassic transition at Río Viejo highlights this complexity. This study critiques the suitability of current standardized methods for assessing sex and challenges assumptions of their universality by considering factors such as taphonomy, educational biases, and accessibility to analyzed precontact population collections. Additionally, the study uses feminist and queer theories of identity to question Western assumptions and interpretations regarding associated funerary objects. *****This presentation will include images of human remains.**

Aguilar, Joseph

[274] *How Contemporary Pueblo Farming Practices Can Inform Archaeological Approaches to Understanding Past Farming Practices*

Pueblo Indian People have been farming in the North American Southwest for generations. Evidence of this exists across the landscape of the greater Southwest. More and more, archaeology is being informed by Indigenous knowledge and epistemologies that allow for a richer and more nuanced understanding of the past, while acknowledging the interconnectedness of contemporary Pueblo Peoples to our pasts. This paper synthesizes the experience and knowledge of contemporary Pueblo farming practitioners and weaves that knowledge into archaeological understandings of past farming practices.

Aguilar Aceves, Héctor, and Francisco Correa

[180] *Experiencia fenomenológica en la prospección arqueológica: En busca de los orígenes de la sociedad compleja en El Campanillo, Jalisco*

Este trabajo se desarrolla en un escenario paradójico en donde las transformaciones de la industria tequilera, al desmontar la cobertura vegetal, facilitan la observación e identificación de rasgos y estructuras. Por otra parte, alteran y destruyen las evidencias arqueológicas y los ecosistemas nativos y dificultan, debido a la presencia punzante de las plantaciones de agave, las labores de campo y el desplazamiento del personal en el terreno. En ese contexto aplicamos un enfoque fenomenológico que integra los conceptos de Dasein de Heidegger y sujeto-cuerpo de Merleau-Ponty para explorar la interacción entre nosotros y el paisaje, así como la relación entre esa experiencia del trabajo de campo y el análisis en el laboratorio, utilizando imágenes aéreas, DEM y ortofotos para complementar el trabajo en el terreno y facilitar la labor de identificación y mapeo de estructuras con GPS de precisión y aplicaciones de SIG. Nuestro enfoque busca comprender la experiencia humana en el pasado y su relación con el entorno, y cómo esta comprensión puede enriquecer la interpretación arqueológica de los orígenes de la sociedad compleja en Teuchitlán, Jalisco. Presentamos resultados preliminares de investigación y discutimos las implicaciones de este enfoque innovador para la investigación arqueológica en la región.

Aguilar Silva, Segundo Priciliano [45] see Raillard Arias, Daniela

Aguirre Aldana, Valeria [290] see Cruz Sosa, Ivonne

Ahern, Kaitlin

[169] *Caches, Chultuns, and Stelae at the Preclassic Maya Center of Cival*

Cival is a large Preclassic period site occupied between 800 BCE and 300 CE. It served as the regional capital of the Holmul region from 300 BC until the city was attacked around AD 200. The Holmul Archaeological Project first visited the site of Cival in 2000. Eight years of excavations at the site revealed evidence of extensive ceremonial rituals, especially within the Central E-Group plaza. This presentation provides an overview of ritual practices, with particular emphasis on caches, stelae, and chultuns. Social memory and sacred place are utilized to contextualize these findings.

Ahlman, Todd (Texas State University), Nicholas Herrmann (Texas State University), and Keegan Beane (Texas State University)

[112] *Using Geophysical Survey Methodologies to Assist Descendant Communities in the Recording and Preservation of African American Cemeteries in Texas*

According to the Texas Freedom Colonies Project, there are hundreds of known and unmarked African American cemeteries in Texas. Some of these cemeteries have been uploaded to the community-based project and likely represent only a small fraction of African American cemeteries in the state. Many African American cemeteries have not been maintained by local municipalities or church congregations have moved or closed and lack infrastructure for cemetery maintenance. The impermanence of many markers in these cemeteries means that African American graves in larger, maintained cemeteries are unrecognized and at danger of being disturbed. Texas State University has been engaged by several descendant communities in central Texas to conduct geophysical surveys at African American cemeteries to help identify unmarked graves. In this presentation, we discuss working with descendant communities, what geophysical

methodologies work best in Texas cemeteries, and how these projects have been beneficial to communities and our students who have participated in the research.

Ahrlrichs, Robert (Jacobs Engineering Group Inc.)

[284] *The Intersection of Natural and Cultural Distributions of Toolstone in Path Valley, Pennsylvania*

The archaeological resources of Path Valley in Pennsylvania contain a limited number of toolstone types. The primary toolstone is chert, native in the valley bedrock and readily accessible from both primary and secondary geologic contexts throughout the valley. Crystal quartz was used less often but is also locally available in the valley. Other toolstones found on sites in the valley include a regionally prominent rhyolite and Pennsylvania Jasper. Path Valley is a small, geographically isolated setting that served as both a physical and cultural corridor for Native Americans during both precontact and postcontact times. This area has largely escaped professional archaeological attention until recently and so little is known about the archaeological resources of this potential connection between major river valleys of the Mid-Atlantic region. This paper examines the distribution of toolstones within Path Valley's geographic, geologic, and cultural contexts. These contexts form a baseline of data for discussion of precontact economy, mobility, settlement location, and social network development in South Central Pennsylvania.

Ahrlrichs, Robert [284] see Sterner, Katherine

Ahlstrom, Richard (HRA Inc.)

[375] *Extending the Use-Lives of Ancestral Pueblo Kivas and Great Kivas: A Tree-Ring Perspective*

The archaeological concept of "architectural continuance" refers to the extended longevity of selected buildings and, especially, to the efforts made by those structures' owners or caretakers to keep them in service over time. Archaeological evidence for the continuance of ancestral Pueblo kivas and great kivas shows how these buildings could be repaired (to maintain their existing architectural fabric and internal features), remodeled (involving the redesign or replacement of that fabric or those features), re-roofed (possibly with coordinated changes in structure design), returned to service after periods of abandonment, and replaced with newly built, descendant buildings. This paper examines the contributions of dendroarchaeological evidence to documenting these efforts to extend structures' use-lives, particularly those involving the repair and replacement of the buildings' wood-based roofs and superstructures, to estimating typical repair and replacement intervals for those efforts, and to measuring the lengths of extended, multi-decade structure use-lives. In so doing, it revisits and expands on the authors' existing model for interpreting tree-ring date distributions from Pueblo structures.

Ahmann, Alyssa, and Jacob Freeman

[91] *A Deep-Time Comparison Using Stable Isotope Data to Compare Gender-Based Protein Consumption*

Gender differences in work, mobility, political status, and diet have long been topics of interest in demographic anthropology, archaeology, and biological anthropology. However, comparative studies of gender differences in diet and the consumption of resources over time, while standard for individual case studies, are rare. Drawing on legacy data, we ask whether gender differences in protein consumption arise under a general set of ecological circumstances. We propose a meta-analysis of potentially distinct gender-based niches in protein consumption among archaeological regions. We propose that when populations specialize on terrestrial resources and live under higher levels of population pressure, males and females are more likely to create partially nonoverlapping protein consumption niches. We anticipate this because in such settings females and males experience different time constraints on their fitness maximizing strategies and females may experience male imposed social constraints on access to some protein resources. We evaluate this hypothesis by conducting a meta-analysis of archaeological radiocarbon and published data on human bone stable isotopes. This biogeographic study will contribute to understanding if gender differences in protein consumption occur in a regular set of ecological circumstances.

Ailincal, Sorin [215] see Wright, Sterling

Aimers, Jim (SUNY Geneseo)**[283]** *Coastal Pottery Exchange in Belize, the Maya World, and Beyond*

Along with chronology, one of the key goals of ancient Maya pottery analysis is to better understand trade and stylistic interaction among people in various parts of the Maya world and beyond. In this paper I review how some of the styles and types of pottery that are evidence for coastal trade in Maya prehistory, with a focus on where I work: Belize. The earliest pottery made by the Maya provides evidence of trade and stylistic interaction, but coastal trade is more obvious in pottery in the Terminal Classic and Postclassic periods. I discuss some of the pottery styles and types related to the northern Maya lowlands that become much more common at sites in Belize at that time and offer explanations for this interaction. I also describe rarer pottery evidence for longer-distance coastal exchange with the Caribbean and lower Central America.

Ainis, Amira (California State University, Los Angeles), and Carola Flores-Fernandez (Adolfo Ibañez University, Chile)**[56]** *Perspectives on Global Fishing Technologies, Material Culture, and Practices in the Past*

Fishing implies cultural practices that consider social, economic, and ecological factors, which can be explored through the study of the associated tool kits. The contexts of initial production and use of fishing technologies, how they spread, adapted, and changed through time in various parts of the world, reflect the deep technological and ecological knowledge of island and coastal dwelling peoples. This paper seeks to provide a synthesis of the current understanding of fishing-related technologies from around the world as context for the symposium and as a point of departure for discussion on the state of the art and future avenues of research concerning these topics. We provide a summary of the chronologies and primary types of fishing tackle and equipment that is known from various coastal regions in deep time as revealed through the archaeological record with the aim of a comparative perspective about fishing practices and approaches including the origins and evolution of various fishing technologies (or lack thereof when none were needed to capture certain types of fish) and the influences of fishing on artisanal societies.

Ainis, Amira [56] see Fujita, Harumi

Ainis, Amira [125] see Leiva, Jennifer

Airola, Danielle (University of Montana), Meradeth Snow (University of Montana), Joanna Wysocka (Polish Academy of Sciences), Maciej Gembicki, and Tina Czaplinska**[316]** *Infectious Disease and Kinship at Two Early Modern Sites in Poland*

Gań, a village in Greater Poland, near Poznań, and Czysty Square, formerly the Cemetery of our Savior in Wrocław, are two archaeological sites in Poland dating to between the sixteenth and nineteenth centuries. Ancient DNA analysis has been carried out on the remains of individuals excavated from both sites' cemeteries in order to assess kinship relationships and the presence of infectious pathogens. Whole genome sequencing and bioinformatics analyses were utilized to investigate several aspects of the people's lives. Runs of homozygosity were used to investigate the degrees of genetic relatedness among the interned. Additionally, use of HAYSTACK and Kraken2 were employed to detect and identify any bacterial DNA in samples from both sites, allowing for the exploration of the role of infectious, epidemic-causing diseases. These two sites allow us to compare genetic relatedness and pathogen loads between two different settings, rural (Gań) and urban (Czysty Square). This study adds to the body of knowledge about regional DNA in Poland, as well as the history of infectious disease in a region that is underrepresented in paleopathological literature.

Aitchison, Kenneth (Landward Research)**[232]** *How Big Is Archaeology? CRM's Place in Environment and Sustainability Consulting*

Commercial archaeology—CRM—has been recognized as being a billion dollar industry in the United States for some years now. But archaeological services are just one small part of the wider architecture / engineering / construction and environment and sustainability consulting milieu. This paper will review the scale of CRM in the United States and around the world, and will then directly examine where CRM is being delivered by the global players in environment and sustainability consulting.

Aiuvalasit, Michael (Illinois State Archaeological Survey), and Michael F. Kolb (Strata Morph Geoexploration; Illinois State Archaeological Survey)

[369] *A Review of Geoarchaeological Research in Cultural Resource Management (CRM) Investigations in Illinois*

This literature review and analysis examines the history and impact of geoarchaeological research conducted within cultural resource management (CRM) in Illinois. Despite the routine inclusion of geoarchaeological studies in CRM projects, where it happens, how and why it is done, and what we have learned remains underappreciated. Using primarily the Illinois CRM Report Archive, a digital database containing over 26,000 records of compliance-driven studies in the state, we identified more than 200 CRM projects featuring geoarchaeological investigations. Our analysis reveals trends in where geoarchaeology is and isn't being conducted, generational shifts in practitioners and project funders, and the research opportunities that are possible with synthesizing geoarchaeological data.

Akai, Fumito [292] see Nakazawa, Yuichi

Akimoff, Anya, Luis Manuel Gonzalez-La Rosa (University of British Columbia), and Aleksa Alaica (University of British Columbia)

[167] *Charting the Understudied Landscape: Isotopic Baselines for CAM Plants and Other Native Organisms in Peru's Tierras Blancas Region*

The Tierras Blancas Valley in the Nasca region of southern coastal Peru is home to a diverse array of plant and animal species. The Nasca culture, which emerged during the Early Intermediate period (100–650 CE), primarily used ceramics to depict these natural elements in their iconography. While previous isotope studies have investigated plants like maize and sweet potato, there are still gaps in our understanding, particularly regarding the use of cacti by the Nasca people. Given the prevalence of cacti in Nasca ceramics—such as the fruit depicted on headdresses to the spines used to sew the mouths and eyes of trophy heads (Browne et al. 1993)—it is crucial to expand research to include a broader range of plant species from the Tierras Blancas region. To address this, stable isotope analysis was conducted on 47 tissue samples collected from various native plants and organisms at Cocahuischo, a Late Nasca (450–600 CE) domestic settlement known for its craft and food production (Whalen and González La Rosa 2014). Creating an isotopic baseline database focused specifically on plants that employ the lesser-studied CAM (Crassulacean Acid Metabolism) photosynthetic pathway will offer valuable insights into the use of these plants by the Nasca people.

Akman, M. Ali [287] see Shrader, Mason

Akogun, Moses (University of Toronto), Lisa Janz (University of Toronto, Scarborough), Paul Szpak (Trent University), and Davaakhuu Odsuren (Mongolian National University of Education)

[278] *Hunting Strategies and Cattle Management: 2,500 Years of Isotope Data from Tamsagbulag (ca. 8500–6000 BP), Mongolia*

Tamsagbulag is an Early Neolithic site in eastern Mongolia inhabited by hunter-gatherers from ca. 8500BP. Upon arrival at Tamsagbulag, these hunter-gatherers began to develop and occupy seasonal surface and subsurface dwellings, which continued for at least 2,500 years before the site was abandoned. This paper presents a multispecies carbon, nitrogen, and sulfur isotope analysis of faunal remains from several dwellings in Tamsagbulag. This data and our zooarchaeological analysis provide insight into the diet and mobility patterns of animals exploited by hunter-gatherers at Tamsagbulag. These data further support the prevailing hypothesis about indigenous wild cattle management in Mongolia around 7800 BP and refine our understanding of hunting strategies adopted by people who occupied Tamsagbulag. We also assess the impact of climatic amelioration and human interaction on the diet and mobility patterns of cattle over 38,000 years. Our data shows remarkable change in cattle diet from one composed mainly of C₃ plants during the Pleistocene to a more C₄ diet during the early Holocene. The pattern further changed from the Bronze Age into the Turkic period, with a gradual return to the C₃ dominant diet. We attribute these changes to variations in temperature and precipitation between the Pleistocene and Holocene and human intervention.

Al-Amri, Abdullah [174] see Andreae, Meinrat

Alaica, Aleksa (University of British Columbia), Luis Manuel Gonzalez-La Rosa (University of British Columbia), and Stephen Berquist

[376] *Animals and Political Economy in the Andes: Camelids and Cuyes as Food and Ritual Offering at Middle Horizon Huaca Colorada and Tecapa, Peru (650–1050 CE)*

Camelids and guinea pigs (*cuy*) are central to Andean cuisine and ritual practice. In this paper, we examine the variable use of camelids and guinea pigs in the complex social and political relationships of Late Moche and Transitional phases of the Andean Middle Horizon on the North Coast of Peru (650–1050 CE). We mobilize the analysis of zooarchaeological collections from the sites of Huaca Colorada and Tecapa, which contain remains of both taxa throughout monumental and elite spaces. Employing stable isotope analyses from camelid and guinea pig remains between these sites, we trace their consumption throughout the period and highlight how their variable use and management attests to the expanding long-distance trade and the intensification of agricultural practice in the region in the latter half of the Middle Horizon. The importance of these species indicates coevolutionary transformation between people, commensal and ungulate taxa, but the unique relationship that forms between both guinea pigs and camelids and humans in the Andes fundamentally transformed cuisine and political exchange. We often consider pack animals as the prime movers of political and economic change, but including an analysis of guinea pigs provides new insights to complex human-animal relationships in the Americas.

Alaica, Aleksa [167] see Akimoff, Anya

Alaica, Aleksa [343] see Gonzalez-La Rosa, Luis Manuel

Alarcón Tinajero, Edgar (Independent Researcher), Jorge Gómez-Valdés (Escuela Nacional de Antropología e Historia; Instituto Nacional de Antropología e Historia), Lourdes Marquez-Morfin (Instituto Nacional de Antropología e Historia), Carla Hadden (Center for Applied Isotope Studies, University of Georgia), and Diana Moreiras Reynaga (University of British Columbia; Canadian Latin American Archaeology Society)

[36] *Oxygen Stable Isotopes As Geographic Residence Indicators in the Colonial Period Basin of Mexico: El Japón, Xochimilco, Mexico*

Sixteenth-century Spanish colonization of Mesoamerica caused demographic decline, epidemics, and large-scale political conflict leading to geographic relocation of communities by force, coercion, or as strategies of survival. Stable isotopic methods in recent decades examine narratives of population movement previously known from historical records. Bone samples from the El Japón—a colonial period village in the Basin of Mexico, 1550–1650 CE—allow examination of geographic residence of a population sample through stable isotope analysis. Oxygen isotopes ($\delta^{18}\text{O}$) in biological tissues are used to estimate geographic origin or residence. $\delta^{18}\text{O}$ in human bone is renewed throughout life allowing interpolation of residence with reference to geographic areas. $\delta^{18}\text{O}$ in bone bioapatite from 74 individuals from El Japón was analyzed by mass spectrometry and sample integrity was evaluated using Fourier-transform infrared spectroscopy. $\delta^{18}\text{O}$ in bioapatite was used to calculate phosphate $\delta^{18}\text{O}$ using published equations. The results are compared with other Mesoamerican population samples from the postclassical and colonial periods and with the expected phosphate $\delta^{18}\text{O}$ ranges in Mesoamerican isotopic zones. Finally, the variability in geographic residence of these individuals is discussed in light of continued cultural practices and population movement during the first century of the colonial period. *****This presentation will include images of human remains.**

Alberda, Abner [41] see Rojas, Maria

Alcantara Salinas, Andres Saul (Instituto Nacional de Antropología e Historia)

[36] *Fase cultural Comala en Colima (200-600 dC): El uso de dos tumbas inusuales en esta etapa*

La Fase Comala (200-600 dC) corresponde a un periodo de desarrollo cultural del Occidente Mesoamericano, el cual se caracterizó por el uso generalizado en toda el área geográfica de la región, del denominado sistema funerario “Tumbas de Tiro”; se trata de espacios excavados en el subsuelo, generalmente de manera circular, los cuales profundizaban los constructores, hasta encontrar el contacto con el material volcánico denominado tepetate, este material gracias a sus características de textura y

compactación posibilitaba la construcción de cámaras mortuorias, las cuales servían de espacios funerarios donde eran depositados los cuerpos de los familiares fallecidos, con la finalidad de crear un espacio que ayudara al difunto a llegar a una nueva vida; estas Tumbas de Tiro son espacios que recreaban el vientre materno, localizados en la madre tierra. En el estado mexicano de Colima, en el predio Las Fuentes, se localizaron dos tumbas fechadas para ese mismo periodo, las cuales no fueron construidas en el tepetate, sino que las cámaras fueron edificadas con rocas pegadas con aglutinante a base de lodo. Hasta ahora, son las dos únicas cámaras reportadas en todo el Occidente Mesoamericano y que presentan la misma intencionalidad de función que las tumbas en tepetate.

Alcaraz-Castaño, Manuel (University of Alcalá), Samuel Castillo-Jiménez (University of Alcalá), Javier Llamazares (Spanish National Research Center for Human Evolution [CENIEH]), Adrián Pablos (Complutense University of Madrid), and Nohemi Sala (Spanish National Research Center for Human Evolution [CENIEH])

[384] *First Case of Aurignacian in Central Iberia: The Assemblage of La Malia LU-V (Spain)*

The Aurignacian shows an uneven distribution in the Iberian Peninsula. Protoaurignacian and Early Aurignacian industries are only clearly recorded in the northern regions, while south of the Ebro basin only late Aurignacian sites have been unquestionably documented, besides controversial cases. Yet, all these sites are located close to the coasts, while the large Iberian hinterland in the center of the peninsula has traditionally shown a remarkable gap of Aurignacian occupations. La Malia is a rockshelter located at 1,100 m asl in Central Iberia and it shows the first-ever published Aurignacian level (LU-V) in this region. Although the assemblage is still scarce, its stratigraphic position and chronometric dating (36.2–31.8 ka cal BP), together with its technological features, support an Evolved Aurignacian attribution. As no clear index fossils of such technocomplex have been recorded yet, La Malia LU-V opens new questions concerning the internal variability of the Aurignacian in southwest Europe. Furthermore, it paves the way for a new picture on the population dynamics of the first modern humans entering Iberia, as it falsifies the traditional hypothesis that the Iberian interior was avoided by these populations. Ongoing research suggests that La Malia was not an isolated Aurignacian spot in Central Iberia.

Aldama, Wilder [374] see Prieto, Gabriel

Aldana Mendoza, Jesús Alberto [41] see Del Cairo Hurtado, Carlos

Aldana Mendoza, Jesús Alberto [41] see Sarmiento Rodríguez, Juan

Aldenderfer, Mark [85] see Bruneau, Laurianne

Aldenderfer, Mark [117] see Flores-Blanco, Luis

Aldenderfer, Mark [182] see Noe, Sarah

Alekseitseva, Valentina (Indiana State University), Chad Yost (Indiana State University), Snezhana Zhilich (Institute of Archaeology and Ethnography SB RAS, Novosibirsk, Russia), Svetlana Shnaider (International Research Laboratory ZooStan, ArchaeoZoological Center for the study of Central Asia, CNRS, Al-Farabi Kazakh National University, Almaty, Kazakhstan), and Masnav Navruzbekov (Institute of History, Archaeology and Ethnography named after A. Donish, Dushanbe, Tajikistan)

[160] *Pleistocene-Holocene Climate Change and Early Human Occupation of the Pamir Mountains, Tajikistan*

Early human occupation of high-elevation mountains is a much debated yet understudied topic in contemporary archaeological science. One of these regions where a large number of archaeological sites have been found is the Eastern Pamir, Tajikistan. The average elevation of the region is 3000–4500 m asl, and the modern climate is dry with sparse vegetation cover and relatively cold winters. To better understand possible reasons for human settlement of a landscape with extreme environmental conditions and limited options for subsistence, we have initiated paleoenvironmental investigations using palynological and phytolith analyses in the Eastern Pamir. The goal of this project is to provide a paleoclimatic context for human settlement and migration in the region. The results of previous palynological analysis allowed us to trace the connection between climate change and the initial human settlement of the Eastern Pamir. During the 2023 field season,

samples for phytolith analysis were also collected at a number of archaeological sites. The complementary nature of pollen and phytolith analyses will allow for greater detail concerning the dynamics of climatic and ecological change in the Eastern Pamir Mountains and possible linkages to human activity in the region. The project is supported by RSF (Nº24-78-10127) and ANR (ANR-23-CE27-0019).

Aleman, Julie [67] see Ruiz-Pérez, Javier

Aleo, Alessandro [229] see Dusseldorp, Gerrit

Alfonso-Durruty, Marta (Kansas State University; Biological Anthropology Program, US National Science Foundation), Nicole Misarti (Water and Environment Research Center, University of Alaska, Fairbanks), Andres Troncoso (Universidad de Chile), and Mario Henríquez Urzúa (Museo Regional de Rancagua, Chile)

[194] *Burials, Diets, and Sex Equality among the Hunter-Fisher-Gatherers of Punta Teatinos, Chile (6000–2000 cal BP)*

Hunter-gatherer (HG) groups show high levels of cooperation expressed through practices like food sharing. Although an egalitarian ethos has been identified in many HG, their social structures are not only variable but can intentionally and repeatedly alternate between different levels of hierarchy. The origin of inequality among HG has been attributed to demographic pressure, violence, or ecologies that foster the control of clumped and unevenly distributed resources. So called “complexity,” rank and hierarchy, is particularly variable among Hunter-Fisher-Gatherer (HFG) groups. The study of dietary and funerary variability in HG and HFG groups provides an avenue to explore their past forms of social organization and possible inequalities. This study evaluates sex equality among the HFG from Punta Teatinos, Chile. This large Middle and Late Holocene shell midden and funerary site is in the semiarid region of Northern Chile (SARNC). To examine sex equality/inequality, we compare the diet and burials of males and females. Diet is analyzed using dental pathology and stable isotope data. The characteristics of the burials (e.g., presence/absence of surrounding stones structures) of males and females are also analyzed to further explore sex equality/inequality among the peoples of Punta Teatinos.

Alfonso Monges, Mirtha [327] see RuizDiaz, Julio

Alford, McKenzie [275] see Crawford, Dawn

Ali Tabibou, Tabibou [59] see Crowther, Alison

Allard, Francis (Indiana University of Pennsylvania)

[59] *The Environmental and Social Dimensions of Early Maritime Interaction Networks in the South China Sea*

The first millennium BCE witnessed the expansion of maritime networks linking several coastal areas of the South China Sea. By the middle of the millennium, interaction involved not only the movement of decorative objects of different types (e.g., jade ornaments; glass and stone beads, some originating in South Asia) but also raw materials (e.g., jade) and—some have argued—the artisans themselves. According to many archaeologists, these interaction networks consisted of trade among often distant participants, possibly involving “peer-polity interaction.” Importantly, distribution maps of sites and objects indicate a lack of spatial and temporal uniformity, with some northern sectors of the South China Sea apparently left out of trading networks until the first century BCE. This presentation argues that such unevenness may be explained by the coalescence of several environmental factors, including the strength and direction of seasonal winds and currents, as well as deltaic geomorphology. Furthermore, and in contrast to prevailing views that a shared Austronesian ancestry throughout much of the South China Sea facilitated the development and maintenance of extensive maritime connections over thousands of years, ethnographic evidence suggests that maritime interaction likely involved the participation of multiple distinct social units of limited size.

Allen, Gage [193] see Carmody, Stephen

Allen, Jim [339] see O'Connell, James

Allen, Laura [75] see Garcia-Putnam, Alex

Allen, Mark (Cal Poly Pomona)

[113] *Challenges to Chiefdoms: Māori Leaders in Aotearoa/New Zealand*

The title of this paper reflects two themes. First, the environmental and demographic reality of Polynesian settlement of temperate islands with substantial rainforests and marginal horticultural potential which prevented the development of large complex chiefdoms such as those of Hawai'i or French Polynesia. Māori chiefdoms were limited in size, frequency, and scale by these constraints as well as the proliferation of effective fortifications organized and funded by chiefs starting two centuries after initial colonization. The second meaning of the title refers to limitations to better understanding these societies due to dominant theoretical perspectives and methodology. New Zealand has been described by Timothy Earle as the type "hillfort chiefdom," with other examples from Metal Age Europe and the Americas. Yet, this model is not widely recognized by New Zealand archaeology. The second goal is to encourage scholars to recognize that the Māori case reflects a common pattern of dynamic small-scale chiefdoms built because of and despite fortifications which made conquest by force a difficult undertaking. The utility of the "hillfort chiefdom" model is supported by over three decades of archaeological research partnered with the *tangata whenua* (people of the land) of Heretaunga in the Hawke's Bay province.

Allen, Martyn [207] see Cooper, Anwen

Allen, Mitchell (Scholarly Roadside Service)

[370] *The Challenge of Regionality to Global Archaeological Publishing*

In many academic disciplines, regional societies and journals simply represent the academic location of their members, but their content covers a broad range of topics and places. In archaeology, regionality shapes the content as well. This has implications for the range of the readership and authorship—including nonacademic professionals and amateurs—and for the sponsor's ability to interest large international publishers to support their work. Regionality is not restricted to North America though. Throughout the world, the localized nature of the content of archaeology journals affects readership, authorship, and economics, with ramifications for their influence on global discussions of common topics affecting the field. How does regionality of archaeological publication shape the conversations on general topics in archaeology? How does it affect the economics of archaeological publishing and relations with global publishers? How is this different from other academic disciplines? Will the global nature of digitized regional journals, particularly open access ones, change these conversations?

Allen, Myriah (Texas State University), Matthew Boulanger (Southern Methodist University), Christopher Roos (Southern Methodist University), Eileen Johnson (Museum of Texas Tech University), and Britt Bousman (Texas State University)

[112] *The Search for Spanish Livestock and the Possibilities of a Forgotten Collection*

The introduction of Spanish horses and other livestock played a pivotal role in the Indigenous ethnogenesis of the Plains Indian Horse Cultures in the sixteenth and seventeenth centuries. Before Spanish livestock were available, the Southern Plains nomadic tribes moved across this landscape with dog-pulled travois hunting bison and exchanging goods with their eastern and western sedentary agriculturalist neighbors. Their ability to acquire and take advantage of Spanish horses to hunt bison and transport their people across the Southern Plains landscape allowed them to remodel their own lifeways dramatically. This project examines how, where, when, and from whom Southern Plains Indigenous groups first acquired horses and other livestock. This presentation focuses on the faunal and artifactual assemblage from Pete Creek (41CBI), a Protohistoric Garza phase site located at the mouth of Blanco Canyon in the Southern High Plains. Excavations by Mark Parsons in the 1960s recovered ceramics, lithics, other artifacts, and 10,500+ well-preserved unanalyzed faunal remains. This Protohistoric site provides crucial information in the search and identification of Spanish livestock on the Southern Plains at early contact period sites, and it lies near the pathway of Coronado's Expedition, which transported thousands of horses, cattle, and sheep, thus introducing livestock to the Plains.

Allen, Perri [224] see Valdez, Richard

Allen, Susan (University of Cincinnati), and Martha Wendel (University of Cincinnati)

[337] *Agitating for Good Outcomes: A New Protocol for Improved Recovery of Floral and Faunal Remains*

Archaeobotanical recovery in environmental settings with heavy clay and gley deposits is often challenging due to the difficulty of processing such sediments by flotation or wet-sieving. Following good results from an initial experiment to improve visibility of floral and faunal remains in a gley deposit from Late Neolithic deposits at Maliq, Albania, we embarked on systematic experimentation to test a noninvasive method to improve processing times and efficiency for challenging sediments. We tested this method, which uses a new mode of agitation, with both (1) experimental samples prepared in the lab with carbonized seeds and wood and (2) archaeological samples from the late Fort Ancient Hahn Site in southwestern Ohio, which allowed examination of recovery rates for floral and faunal remains. In both cases, the new method provided better recovery with minimal assemblage fragmentation. Significantly, this new method can be easily incorporated into ongoing field recovery systems around the world to improve recovery of floral and faunal remains.

Allen, Susan [160] see Riebe, Danielle

Allison, James (Brigham Young University)

[55] *Exploring the Limits of USGS Lidar Data*

In the last several years, the US Geological Survey has released lidar data for southeastern Utah, including digital terrain models (dtms) with 1 m resolution. The publicly available USGS dtms are useful for examining and mapping features within archaeological sites, but the resolution is sometimes insufficient for this purpose. Working from the original lidar point clouds can provide additional useful information. The point cloud data can be used to draw cross-sections of features, for example. Also, experiments with processing the USGS point clouds to higher resolutions have met with some success. It often is possible to produce high-resolution dtms for small areas that are useful for examining details, but long processing times impose practical limits on the size of the area that can be included and the resolution achievable. Increasing the resolution also leads to increasing problems with digital artifacts in the dtms. Examples from several sites in Montezuma Canyon, Utah, reveal the promise and limitations of high-resolution processing of USGS lidar data.

Alperstein, Jonathan (Dartmouth College), Carolin Ferwerda (Dartmouth College), Nathaniel Kitchel, Madeleine McLeester (Dartmouth College), and Jesse Casana (Dartmouth College)

[365] *New England's Indigenous Landscape: Reevaluating Ancestral Abenaki Settlements*

There is considerable academic debate surrounding the absence of Woodland Period Village sites in New England. While some scholars acknowledge the lack of village sites to a preservation bias, other scholars argue that the late adoption of Maize and other domesticates in the region is evidence that village settlements never existed in the region until the arrival of Europeans. Within Northern New England, scholars universally agree that this area was dominated exclusively by hunter-gatherers. Through an exhaustive and multiscale regional survey, we offer new evidence to counter this interpretation of the region's Indigenous occupation of the landscape. Here, we reveal a dense archaeological landscape of sedentary agrarian villages within northern New England. These findings further our understanding of the ecological history of the landscape, widen our understanding of the Algonquin world, and expand our knowledge of the early European colonial encounters

Alt, Susan (Indiana University, Bloomington)

[102] *Methods (and Theories) for the Madness*

The pace of urban development and destruction of sites around Cahokia prompted Tim Pauketat to develop and complete several large-scale excavation projects in what became known as the Richland complex. These excavations garnered large quantities of data while generating and refining archaeological method and theory. The data from these Richland Complex sites has had a profound effect on understanding Cahokia as an urbanism. The reason for this impact is to some degree in the scale of the excavations but also in the method and theory applied to those excavations. Here I review some of those impacts as well as some of the method and theory that made these discoveries so rich.

Altaha, Mark (WMAT-Historic Preservation Office), and Joel Nicholas (Hopi Cultural Preservation Office)

[43] *Outside the Classroom Environment*

Early consultation with Indigenous people is of the utmost importance, regardless of the impact it may or may not have on a proposed ground-disturbing project. With various tribal nations throughout the Southwest, we cannot begin to assume that all the tribal traditions, customs, beliefs, practices, and ways of life are the same. As tribal entities, we need to stress that local, state, and federal agencies understand that each individual tribe is unique and has different customs and values that were passed down from generation to generation, such knowledge that isn't always taught in a classroom environment. In addition to stressing early consultation, as tribal nations we need to be informed and familiarize ourselves with the latest environmental laws and regulations, to assist us in our efforts to protect sensitive traditional cultural property on a local, state, and national level. We need to be in the forefront in addressing congressional laws such as the "Arizona-Idaho Conservation Act" and the "National Defense Authorization Act" that may have the potential to negatively impact Sacred Sites and Traditional Cultural Heritage resources.

Altizer, Kendanne [178] see Cochran, Lindsey

Alva Núñez, José María [172] see Mayta Campos, Daniel

Alvarado, Francisco [335] see Kaplan, Jonathan

Alvarado, Silvia, and Ana Beatriz Balcarcel (Universidad de San Carlos Guatemala; Proyecto Cuenca Mirador)

[383] *Sobreviviendo a la tragedia y el surgimiento entre los escombros del clásico: El caso del sitio La Muerta, Petén, Guatemala*

Aunque hubo un gran colapso demográfico hacia el 150 dC, hay algunas estructuras que surgieron entre los escombros y que fueron construidas durante el Clásico Temprano, como es el caso del sitio de La Muerta. Las investigaciones realizadas, han mostrado un resurgimiento constructivo y de ocupación durante el Clásico Temprano y Clásico Tardío, presentando evidencia arquitectónica y cerámica que amplían el conocimiento sobre la cronología y función de este grupo. A pesar de encontrarse lejos del área central del Mirador, logró colocarse como una de los lugares que sobrevivió al colapso del Preclásico en El Mirador.

Alvarez, Angel (Pontificia Universidad Católica de Chile)

[394] *Metaforología vegetal y estratos coloniales*

El barroco es una época en la que plantas y vegetales pueden resguardar el secreto profundo del orden natural. Una naturaleza que no puede ser explicada, calculada o dominada completamente por el ser humano, pues almacena altos grados de inefabilidad y misterio. Por tal motivo, la presentación tiene el objetivo de explicar la relación entre teología, naturaleza e imagen en la estética colonial. La hipótesis a poner a prueba es que la botánica barroca no abandonó la idea cristiana de reducir la naturaleza a un lenguaje de signos comunicable entre especies y, para ello, elaboró una metaforología que expresa el origen vegetal de la sabiduría humana. Con esta metaforología, la jerarquía de las especies comenzó a desvanecerse y generar un republicanismo multiespecies.

Alvarez, Carlos (UNAM)

[199] *Los artefactos de cobre del sitio posclásico Cimientos de la Independencia, Chiapas: Composición y procedencia*

Las excavaciones arqueológicas realizadas en el sitio Cimientos de la Independencia han proporcionado valiosa información acerca de las relaciones de intercambio e interacción cultural establecidas entre la región tojolabal y otras áreas del sur de Mesoamérica. La presencia de materiales importados, de alto valor simbólico o utilitario, como sería el caso de los artefactos y ornamentos de cobre, nos indican la importancia del intercambio durante el periodo Posclásico Tardío. El análisis tipológico, en conjunto con los estudios de composición química y procedencia de los artefactos por medio de la técnica de PIXE (Emisión de Rayos X Inducida por Partículas), nos ha permitido identificar algunos de las regiones de procedencia y proponer probables rutas de distribución de estos materiales hacia los Altos Orientales de Chiapas en los siglos previos a la conquista española.

Álvarez, José Antonio [48] see Diezbarroso, Alberto

Álvarez, María [88] see Gutierrez, Maria

Amador, Julio (UNAM)

[334] *The Most Ancient Representation of the Mesoamerican Plumed Serpent in Rock Art: A Critical Interpretation*
[WITHDRAWN]

Amaral, Adela

[201] *Conjuring a Moment in 1769 Colonial Mexico*

In 1769, Nuestra Señora de Guadalupe de los Negros de Amapa was a newly built “free” Black town, fenced in by multiple forms of unfreedom. However, the traces of that attempt to build the conditions for Black colonial life that remain in Amapa today, more often than not, emerge as empty signs, memories without recollection and tenuous realities crafted through academic writing. What if we were to contravene the limits placed by traces, sources, and archives or dig through archives for things other than historical veracity? Which opens up another question: what types of stories of (un)freedoms can we create with the people among whom we work? And another question still: what if that audience is children?

Amaroli, Paul (FUNDAR, Fundacion Nacional de Arqueología de El Salvador)

[335] *Revealing the Postclassic across the Landscapes of El Salvador with Publicly Available Lidar*

In El Salvador, the first lidar project specifically for archaeological mapping was conducted by NCALM for FUNDAR, with support from the US government and took place in 2018, with productive coverage of Cihuatán, Las Mariás, and the western flank of Guazapa Volcano. This demonstrated the potential of lidar mapping to further understanding of the explosive growth of urban settlements during the Early Postclassic. Lidar coverage was limited due to finances, even with the generous contributions of NCALM. The government of El Salvador has recently made available its nationwide lidar coverage from 2014 and, while its resolution is not optimal use in archaeology, it is proving to be very useful to greatly expand the study of Postclassic and earlier settlements across the entire country. Cases are presented regarding the entirety of Guazapa Volcano, Lake Güija, and El Güisnáy located on the western coastal plain, which appears to have been a massive Xinka settlement.

Amartuvshin, Chunag [79] see Wolin, Daniela

Amber, Annalisa (Northern Illinois University), Dana Bardolph (Northern Illinois University), and Patrick Mullins (Washington College)

[195] *Domesticating Luxury: A Comparative Study of Moche Fineware Distribution within the Moche Valley*

This study examines 188 vessels from the Moche Valley in northern Peru from the Museo Larco online collection, to determine the distribution of Moche bulk luxury items from urban centers to surrounding towns and rural communities. For this study, the term “bulk luxury” refers to the widespread availability of elite goods produced in large quantities that retain a sense of high status among a wide range of people. This definition serves as a heuristic tool for exploring the roles of objects in democratizing luxury while maintaining exclusivity, and how they may have shaped Moche cultural norms and values. We identify two principal urban centers in the Moche Valley, the Huacas de Moche and Galindo, as well as four smaller towns and two rural communities, assessing the influence exerted by urban centers on ceramic designs and motifs across the valley. Peripheral sites demonstrate both a continuation and deviation from urban ceramic styles; narrative fineline vessels are less prominent in smaller locations, but the characters seen on elite fineline vessels are represented in bulk via mold-made sculptural vessels. Due to relative ease of creation, these sculptural vessels were likely used to promote Moche beliefs in an efficient manner to a wider populace.

Ambler, Bridget, and Blythe Morrison

[293] *BLM Canyons of the Ancients Visitor Center: Reinvigorating NAGPRA at BLM Canyons of the Ancients*

As a Department of the Interior (DOI) museum and the largest of three repositories within the Bureau of Land Management (BLM), Canyons of the Ancients Visitor Center and Museum (CANM) curates cultural

materials from permitted archaeological projects and numerous items from law enforcement actions and private donations. With promulgation of the revised NAGPRA Regulations (43 CFR 10) released on January 13, 2024, the bureau has prioritized compliance. In turn, the CANM Curation Program has committed our efforts to this foundational responsibility and ethical imperative. Facing significant capacity and funding limitations, we have reorganized our curatorial workflows, implementing a team-based, triaged approach to tasks and priorities. By rethinking our internal processes, we have also improved the ways that we communicate and build relationships with Tribal partners. As a result, we will update and implement culturally informed protocols for Duty of Care provisions regarding access, exhibition, handling, and housing. We are committed to addressing legacy compliance issues (repatriating ancestors and funerary objects and updating summaries) and facilitating disposition of objects removed from BLM lands after 1990. It is time to move beyond minimum compliance requirements and create restorative management practices that prioritize the wishes and goals of Tribal communities.

Ambrose, Stanley (University of Michigan, Ann Arbor), Petra Havelkova (Natural History Museum, Czech Institute of Egyptology, Charles University, Prague, Czech Republic), Isabelle Crevecoeur (University of Bordeaux, France), Ladislav Varadzin (Czech Academy of Sciences, Prague, Czech Republic), and Lenka Varadinova (Czech Institute of Egyptology, Charles University, Prague, Czech Republic)

[229] *Death on the Nile: War and Peace during the African Humid Period*

Terminal Pleistocene (14.6–12.8 ka) cemeteries of the Early African Humid period (E-AHP) along the Nile in Sudan contain many skeletons with injuries (41.9% of burials) suggesting chronic intergroup warfare. During the Later AHP the Nile Valley was densely populated by hunter-gatherer-fisher communities of the Early Khartoum (EK) tradition (10.6–6 ka). Evidence for interpersonal violence was rare (8.5%). However, a skeleton at Jebel Sabaloka on the 6th Nile Cataract bears compelling evidence for murder with a burned bone weapon. Why was warfare chronic during the E-AHP but rare during the L-AHP, despite similar ecological conditions? We discount Dart's and Ardrey's atavistic theories of hunting, violence, and territoriality inherited from our carnivorous bone-tool and weapon-wielding australopithecine ancestors: Contrasting intergroup relations among bonobos and chimpanzees in similar ecosystems obviates killer ape and male coalition hypotheses for modern human territoriality and warfare. Comparative ethnography of warfare among hunter-gatherers shows patrilocal postmarital residence (PMR) is associated with intergroup warfare by intragroup coalitions of related males. Conversely, matrilineal PMR is usually associated with peaceful, cooperative, intergroup relationships. Kinship systems and PMR rules may have played an important role in the diversity in modern human social and territorial organization, and intra- versus intergroup cooperation and warfare. *****This presentation will include images of human remains.**

Ambrose, Stanley [69] see Munene, James

Ameje, James [228] see Ganiyu, Abiodun

Amend, Tessa [198] see Zimmermann, Mario

Amerman, Roger [96] see Blong, John

Amerman, Roger [107] see Thompson, Jordan

Ames, Christopher (University of Victoria)

[175] *Paleolithic Landscapes of the Central Azraq Basin: Paleoenvironmental Change and Settlement Dynamics in the Eastern Desert of Jordan*

Open-air archaeological records provide an important contribution to our understanding of the range of environments exploited by hominins and how changes in technology and mobility might relate to local and regional environmental fluctuations. The challenge, however, is that the distribution of buried and surface archaeological remains in open-air contexts is greatly affected by geomorphic processes that acted on the landscape throughout the Quaternary. The resulting data sequences are often fragmentary and elucidating long-term human-environmental dynamics requires a multiscale approach and a well-developed

understanding of landscape evolution. As an example, in this paper I discuss the Paleolithic archaeological record of the central Azraq Basin at the eastern margin of the Levant, where Lower, Middle, Upper, and Epipaleolithic occupations are abundant. The region also experienced at least three local wetting-drying cycles over the past 350,000 years, ranging from expansive wetland landscapes to desert refugia characterized by isolated spring pools. Such fluctuations in the extent and distribution of freshwater resources played an important role in shaping the archaeological record, and I argue that in this context it is more beneficial to speak of an open-air archaeological landscape rather than sites in the traditional sense.

Amezcuca, Vera (Harvard University), and Ekaterina Menkina (University of Alabama)

[291] *The Value of Rock Art: An Interdisciplinary Approach to Rock Art Documentation, Research, and Analysis at Paint Rock, Texas*

Our investigation explores the North American motifs of the Mississippi Valley Hero Twins present at Paint Rock, Texas. Because this story has morphed into myriad versions through ritual transfer of polity to polity, we are outlining the iconographic linkage to that to that of the Lower Mississippi Valley because it contains North American motifs such as shape shifting of Hero Twins into birds (turkeys), the play of a deadly game of ball (i.e., chunky), and strong symbolism of death, decapitation, the sun, and four-petaled flowers (related to *Datura* and the tobacco plant). Based on linguistic analysis of indigenous polities of the region, we believe that some of the design elements that we see at Paint Rock suggest that there is a cosmological allegory that transfers sacred power through the rock art and captures the ritual practices of the region and of its people. The second part of the investigation will explore concepts of rebirth through analysis of solar interactions with the pictographs at Paint Rock.

Amgalantugs, Tsend [115] see Ciolek-Torello, Richard

Amgalantugs, Tsend [122] see Ramirez, Estevan

Amorim, Eduardo [316] see Nelson, Elizabeth

Anaya Hernández, Armando [199] see Farquharson, Kyle

Anaya Hernández, Armando [109] see Reese-Taylor, Kathryn

Anaya Hernández, Armando [239] see Vazquez-Alonso, Mariana

Anderson, Cheryl

[219] *The Impact of Migration on Ritual Burial Practices during the Hellenistic Period in Central Anatolia*

This research examines the Hellenistic period (ca. 300–100 BCE) human skeletal sample ($n = 31$) and associated storage pit burial contexts at Kaman-Kalehöyük in central Anatolia. The aim is to test the hypothesis that the burial practices observed at the site are consistent with those at sites associated with Celtic language-speaking peoples and may be behaviors that were brought to Anatolia by the Galatians. This will include comparisons with other storage pit burial sites from the Hellenistic period / Iron Age, such as those found in Europe and Britain, with a focus on potential ritual activities. The results show similarities between the pit burials at Kaman-Kalehöyük and other Celtic sites. Evidence for possible excarnation in two of the pits with multiple individuals may be consistent with reported Celtic ritual practices. Additionally, placement of the bodies and inclusion of animal remains in some of the pits also suggest some similarities. Evidence from European sites indicate that those buried in similar Iron Age pits may have been individuals with a unique social position, which may be the case at Kaman-Kalehöyük as well. There will be no images of human remains in this presentation

Anderson, David (University of Tennessee, Knoxville)

[102] *Teaching Pauketat: Changing Research Perspectives in Modern Archaeology*

For the last 20 years, whenever I taught advanced seminars in the Archaeology of the First Peoples of the Southeast, North American Precontact Archaeology, the Development of Complex Society, or Archaeological Theory, the work of Timothy R. Pauketat played a prominent role. Besides papers on Cahokia, climate change, practice theory, deep history, and cosmology, his books were routinely assigned in their entirety, especially *Chiefdoms and Other Archaeological Delusions*, which provides an excellent overview of

southeastern archaeology and scholarly thinking about the emergence of complex society not only in the Southeast, but worldwide. Pauketat's legacy is enormous, as a fieldworker, synthesizer, theoretician, and administrator, and his voluminous writings and regular attendance and presentations at meetings have ensured his contributions are well known and lasting. As someone who has interacted with him on and off for 40 years, from his early days in graduate school at the University of Michigan, in the field in Arkansas in the late 1980s, and through the sharing and reading of manuscripts in the decades since, Timothy R. (Tim) Pauketat has had a major influence on my career, and I am the better for it, as indeed are all who have followed his work.

Anderson, David [96] see Tune, Jesse

Anderson, David [298] see Wells, Joshua J.

Anderson, Derek [99] see Wu, Nikki

Anderson, Derek [343] see Zuckerman, Molly

Anderson, Derek T. [101] see Strawn, James

Anderson, Derek T. [88] see Weaver, Jesse

Anderson, Kirk (Museum of Northern Arizona)

[180] *An 8,000-Year Record of Lacustrine Activity in the Magdalena Lake Basin, Jalisco, Mexico, and Implications for Cultural Changes*

The Magdalena Lake Basin of Jalisco, Mexico, has a rich cultural history from the Early Archaic to protohistoric periods. A Late Formative / Early Classic cultural florescence witnessed the emergence of the Teuchitlán Culture, which collapsed in the Epiclassic. We developed chronostratigraphic reconstructions based on 11 profiles and anchored by 27 AMS dates. Lake-forming periods coincide with variations in site numbers and size, derived from our regional archaeological survey. Populations increase during high lake levels and decrease during low lake levels. Lake-forming periods reflect regional and local paleoclimate sequences. Early and Middle Archaic lakes are separated by low lake levels. The highest lake level, 1,367 m asl, occurred during the Middle Formative period, followed by Late Formative / Early Classic lakes between about 1,361 and 1,364 m asl. Lake levels above about 1,361 m asl allow for efficient lake commerce and transportation of goods via watercraft. The Epiclassic period (~600–1000 CE) experienced low lake levels, coincident with a pan-Mesoamerican drought. Dated tephra layers (500–600 CE) several centimeters thick significantly impacted lake ecology and human populations. Tephra age and geochemical properties do not match that the primary candidate of the nearby Ceboruco Volcano in 900–1000 CE, nor of any other known eruption during this time period.

Anderson, Sara (Archaeology Southwest), and Allen Denoyer (Archaeology Southwest)

[198] *Hands-On Archaeology: A Decade of Impactful Outreach through Experiential Learning*

Archaeology Southwest's Hands-On Archaeology program has effectively bridged the gap between modern audiences and the rich cultures of the Southwest through immersive, experiential learning. Over the past decade, this program, led by preservation archaeologist Allen Denoyer, has engaged participants with ancient tools and techniques, deepening their understanding of archaeological knowledge and its historical significance. Denoyer's approach—entailing rigorous research, artifact replication, and collaboration with experts and indigenous communities—ensures that each hands-on activity is both accurate and educational. The program's success is demonstrated by its adaptability through tailored experiences at community events and educational classes. This method not only enhances public engagement and knowledge but also serves as a living model of a successful approach to outreach in the local community, reinforcing the connection between people and the rich archaeological heritage of the Southwest.

Andreae, Meinrat, Tracey Andreae (Max Planck Institute for Chemistry, Mainz, Germany), and Abdullah Al-Amri (King Saud University, Riyadh, Saudi Arabia)

[174] *Petroglyphs Age Estimates Using Portable X-Ray Fluorescence Measurements*

Petroglyphs are often created by removing the dark rock varnish that covers rock surfaces in arid and

semiarid regions. Subsequently, the varnish redevelops over time. We have developed a nondestructive in situ technique, using portable X-ray fluorescence (pXRF), for the measurement of the areal density of Mn and Fe on rock surfaces, which acts as a proxy for the amount of redeveloped varnish. When applied to surfaces of known age, such as dated lava flows, inscriptions, or petroglyphs, the accumulation rate of Mn can be obtained. We will present results from Arabia and North America and discuss the observed variability at all scales from microscopic to global. Once accumulation rates have been obtained, they can be used to determine the exposure ages of surfaces of unknown age. Age estimates are obtained by measuring the Mn areal densities on these surfaces and dividing them by the Mn accumulation rate. This approach was successfully applied to obtain age estimates for petroglyphs in North America and Arabia. While these estimates are still subject to significant uncertainty due to the inherent variability of the accumulation rates, they are extremely valuable in an archaeological context, where little or no alternatives exist for dating these important prehistoric artifacts.

Andreae, Tracey [174] see Andreae, Meinrat

Andrews, Audrey

[313] *Dual Frontier Feminism: Using Feminist Archaeology to Explore Expressions of Feminism at Early Twentieth-Century Reno Divorce Ranches*

In the early twentieth century, women from around the world traveled to Reno, Nevada, to dissolve their marriages. Required to reside in the state for six weeks, many divorce seekers spent their tenure at an accommodation unique to Nevada: the Reno divorce ranch. Divorce ranches were liminal spaces where women pushed the boundaries of gender and embraced self-actualization and independence. Although unrecognized, Reno divorce ranches were places where entangled ideas of pre- and post-World War II feminism and its relationship to the mythos of the American West may be explored. Employing Butler's theory of performativity (2006 [1990]) and Battle-Baptiste's ideas of yardscape and homespace (2011:95, 96), I examine embodiments of feminism at Reno divorce ranches through a feminist archaeology lens and consider the implications of this unique frontier feminism.

Andrews, Bradford (Pacific Lutheran University)

[106] *Variation in Obsidian Household Frequencies over Time: Its Implications for Understanding the Socioeconomic Structure of Postclassic Calixtlahuaca*

This paper explores the implications of the variation in obsidian source frequencies recovered from Postclassic Calixtlahuaca households, a site located in the Toluca Valley. Recent technological research and chemical sourcing indicate that it was supplied with obsidian from both central and west Mexican sources, with the former becoming more dominant over time; moreover, technological attributes also indicate that the provisioning systems supplying the city differed structurally (e.g., obsidian from the Basin arrived via itinerant blade-making merchants, whereas the west Mexican materials arrived as ready-made blades). Interestingly, not only do the interhousehold source frequencies change over time, but they also vary among the households (e.g., gray dominates all household assemblages early—most presumably from west Mexico—whereas half were dominated by obsidian from the basin in the Late Postclassic). Here I examine whether households provisioned similarly are reasonably clustered to infer the presence of multiple market settings. I address whether the Calixtlahuacan obsidian distributions were consistent with a market system that was restricted (i.e., Hirth 1998), and whether this variation reflects differences in social status. Huster has argued that a decrease in the evenness of nonlocal imports among Calixtlahuacan households suggests a tendency toward greater social inequality.

Andrews, Brian (Rogers State University), Andrew Boehm (Museum of Natural and Cultural History, University of Oregon), Pegi Jodry, and David Meltzer (Southern Methodist University)

[179] *Black Mountain, Mountaineer, and Folsom in the Southern Rocky Mountains*

Studies conducted over the past few decades have demonstrated that Folsom hunter-gatherers were persistent inhabitants of the Southern Rocky Mountains at the end of the Pleistocene. Recent work at the Mountaineer site and the Black Mountain site (as well as previous work in Middle Park and other sites in the Gunnison Basin) indicate that Folsom peoples were doing more than just seasonally visiting the mountains to

hunt bison, and instead may have at times been permanent, year-round residents. Here we suggest that Mountaineer was a central residential base from which Folsom groups conducted off-site foraging, and that Black Mountain, and other smaller sites like it, represent those more specialized function, seasonally utilized foraging locations.

Andrews, Brian [280] see Eren, Metin

Andrieu, Chloé [239] see Dussol, Lydie

Andrieu, Chloé [378] see Menager, Matthieu

Andrus, C. Fred [240] see Tranberg, Austin

Anfinson, Scott (University of Minnesota), and Linda Scott Cummings (PaleoResearch Institute)

[301] *Problems with Radiocarbon Dating: The Minnesota Project*

In 2009, a constitutional amendment in Minnesota took effect authorizing millions of dollars for arts and cultural heritage programs. The State Archaeologist developed a Statewide Survey (SWS) program to further knowledge of site locations, cultural contexts, and property types. One of the first projects was to examine dating issues associated with Brainerd ceramics whose absolute chronology was primarily based on dates from ceramic crusts. Forty ¹⁴C dates were obtained from ceramic crusts and other organic materials associated with Brainerd ceramics. These dates demonstrated the previous chronological range of Brainerd began much too early. The suspected cause was old carbon contamination in ceramic crusts due to the inclusion of remains of aquatic plants and animals living in waters with dissolved ancient carbonates. This is known as the freshwater reservoir effect (FRE). Additional SWS projects were initiated to examine the FRE issue and other possible radiocarbon dating issues by examining modern organic samples from aquatic environments. This included dating the remains of four fish species obtained in 1939 (pre-bomb) from the Mississippi River by archaeologists excavating a nearby rockshelter.

Anfinson, Scott [301] see Scott Cummings, Linda

Angell, Emma (Binghamton University), David Mixter (Binghamton University), and Carolyn Freiwald (University of Mississippi)

[188] *Over the River: Initial Investigations into the Clarissa Falls Site*

Since 2001, members of the Actuncan Archaeological Project have driven down the Callar Creek road and glanced with only partial attention at mounds in the surrounding cow pastures of Clarissa Falls ranch. The project had long had its eyes and trowels across the river, at the major Preclassic Maya ceremonial center of Actuncan, Belize. Informal reconnaissance in 2016 by Freiwald revealed a large elite household group in a forested area near these cow pastures and recorded the location of household groups within the plowed pasture. During the first season of the Institute for Field Research field school at Actuncan, our attention was pulled more firmly to these fields by the opportunity to train students in pedestrian survey techniques. Our review of existing lidar data and findings from the 2016 and 2024 survey efforts indicate that the eastern side of the Mopan Valley was well populated by ordinary plaza-centered household groups and a variety of larger and more complex architectural forms. In this poster, we contextualize these findings within past settlement research in the Mopan River Valley. We also consider the impact of rivers in the constitution of Maya urbanism. Were the Maya of Clarissa Falls of or apart from Actuncan?

Anschuetz, Kurt [362] see Duwe, Samuel

Antinossi, Abigail (Rice University), and Molly Morgan (Rice University)

[112] *Community-Based Learning Opportunities in History and Heritage: Rice University Course in Archaeological Field Techniques and Public Archaeology in Brazoria County, TX*

There's a lot going on in Texas archaeology, some of which includes new ways of teaching, learning, and engaging. At Rice University, undergraduate students excavate at plantation sites in Brazoria County

alongside descendants of those who were once enslaved in these same spaces, working in partnership with local museum and heritage managers to change the way history is told at tourist sites in Texas. Project members excavate the dwellings of captive laborers at Patton Place, collaborating with interns from the local community to build interpretations that fill in the gaps of available information on the lives of their ancestors. In partnership with local heritage and preservation groups, we make this information available to the public through museum exhibits and digital heritage products. The goal is a curriculum in which students gain an understanding of archaeological field techniques, learn from local people about family histories, work with museum professionals in public history, and explore new ways of making stories about the past more inclusive and accessible. The result is an approach to teaching archaeology that is embedded in community and heritage, a way of learning through shared knowledge and collaboration, and a direct connection to the public through engaged archaeological research.

Antone, Willard (Resolution Copper), and Bobby Ramirez (Resolution Copper)

[43] *Mindfully Engaging with Purpose*

Tribes historically have been treated unfairly during land-use decisions on ancestral territories. However, in the current day the tables have shifted, and Tribes now find themselves at the crux of major changes in how our country operates and moves forward. The resiliency of Tribal Nations has created sophisticated governments, businesses, economies, leaders, and a populace steeped in traditional ways of life. As humanity moves forward toward clean energy with concurrent environmental and social responsibilities, Tribes are critically essential to achieving this common goal. For future generations to survive, all communities, governments, and private companies must play a role in mitigating the impacts of clean-energy development and needed changes in how business is done. This requires a significant commitment during project planning and development to build trust and lasting relationships through respect, transparency, and inclusion. This discussion focuses on the tribal collaboration and engagement needed in modern-day land development projects.

Antoniuk, Caitlyn (University of Illinois Urbana, Champaign)

[102] *A Micromorphological Study of a Cahokian Outpost*

Cahokia rose as a city around AD 1050, and during the early years of its founding, Cahokian people, practices, and objects were sent to distant locations, often engaging with important landscapes. The Carson site in northwest Mississippi is one such location that shows clear signs of connections with Cahokia, approximately 375 miles away. The site includes Cahokian artifacts as well as unique American Bottom-style architecture. This Cahokian outpost and others like it were important not only locally, but to Cahokia's understanding of itself as well. This study uses micromorphological analysis to investigate very fine-scale construction processes used in the building of these Cahokian houses. Understanding how these Cahokian houses were made, used, and terminated are important parts of understanding the role of these distant locations in the rise of Cahokia itself. These fine-grained geoarchaeological data will be used to address broad-scale historical and cultural questions about how a Cahokian outpost came to be and what these distant places and landscapes meant to early Cahokia.

Anzellini, Armando (Lehigh University), Lua Salomon Velasco, Josefina Vasquez Pazmino (USFQ), and Florencio Delgado Espinoza (Universidad San Francisco de Quito)

[321] *Bioarchaeological Analysis of Fragmentary Burials from the Site of Julcuy, a Late Archaic Site in Coastal Ecuador*

This study presents the analysis of two fragmentary, poorly preserved burials—one adult male and one adolescent—discovered at the site of Julcuy in coastal Ecuador. These burials are tentatively dated to the Late Archaic, a period with very little osteological evidence resulting from the hostile burial environment. Due to the poor preservation, excavators removed the adolescent burial while still encased in matrix to avoid unnecessary damage to the fragile remains, while the adult was fully excavated at the site. The matrix recovery allowed for a more detailed and thorough excavation out of the matrix in the lab and permitted the recovery of small skeletal elements, suggesting that both were likely primary interments. The burials were found in a flexed position within the same feature but separate from each other. The proximity of the two individuals while remaining in distinct burial spaces appears to be an outlier for the funerary traditions of the period. These two individuals and their funerary context represent a small but vital addition to the growing bioarchaeological understanding of Archaic period coastal Ecuador. ***This presentation will include images of human remains.

Aparicio, Patricia [327] see Wai, Stefanie

Apata, Mario [339] see Stone, Anne

Aragón Sarmiento, Irving [195] see Dalton, Jordan

Arakawa, Fumi, and Jamie Merewether (Crow Canyon Archaeological Center)

[111] *Aggregation and Exchange Networks: The Case Study from the Central Mesa Verde Region*

As population density increases throughout the Holocene, people tend to expand their mobility strategies to acquire necessary resources (e.g., food, raw materials, mating opportunities, etc.). This is a common perception of human behavior globally; however, archaeological records, particularly lithic data from the central Mesa Verde region of the American Southwest, do not support this hypothesis for local populations in the AD 1200s. Instead, as population density increased, human mobility as seen in the nonlocal materials became restricted within each community. This phenomenon is rare in human history and is likely associated with the development of land-tenure systems (Kohler 1992) and/or territoriality. This paper investigates the relationship between population aggregation and exchange networks by compiling artifact data (mostly nonlocal items) from the central Mesa Verde region to determine whether this phenomenon is uniquely reflected in lithics or if it is an isolated incident not supported by other artifact data.

Aranibar Bazan, Adolfo (Universidad Nacional Mayor de San Marcos), and Bradymir Bitzen Bravo (Caqui Estudios Interdisciplinarios en Huarochiri, UNMSM)

[200] *El Cerro y la Cruz: La transición inca a colonial en el valle alto de Cañete, provincia de Yauyos, Lima, Perú*

Los incas emplazaron su administración estatal en asentamientos preexistentes estratégicamente ubicados en rutas sacralizadas, comerciales y de control territorial de ecologías productivas que edificaron de sentido al paisaje de la cuenca alta de Cañete (Lima-Perú). Durante los primeros años de contacto, los españoles, desplazaron sus estrategias de control (evangelización) comprendiendo la importancia de estos lugares significantes: las capillas pre-toledanas ubicadas en las plazas y kallankas de los asentamientos prehispánicos representaron la re-significación del sentido de un espacio previamente construido, y los entierros en las capillas revelaron la intensidad del espectáculo-preformase de esta re-significación. La coexistencia entre el orden preestablecido (inca) y orden aspirante (hispano-cristiano) desencadenó estrategias impuestas y negociadas de asimilación-rechazo de narrativas construyendo o reinventando un nuevo orden y lugares significantes que se reflejan hasta hoy en una cruz impuesta en el cerro. En este ensayo intentamos abordar, desde la evidencia de excavaciones y prospecciones, dato etnohistórico y etnográfico, de los asentamientos de Ñaupawasi (Yauyos) y Cochaswasi (Vitis), como las poblaciones locales de Yauyos, los incas y los hispanos evangelizadores desplegaron estrategias de control, coexistencia (vencidos y vencedores) y negociación en el alto Cañete durante el Horizonte Tardío (1470-1532 dC) y los primeros años de contacto (1532-1570 dC).

***Esta presentación incluirá imágenes de restos humanos.

Aráoz, Miriam, and Carlos Delgado González

[386] *La cerámica del Periodo Intermedio Tardío de los sitios ubicados en las Pampas de Anta y Chinchero, Cusco*

Los trabajos de investigación arqueológica del Periodo Intermedio Tardío en las pampas de Anta y Chinchero, Cusco, se llevaron a cabo desde hace varias décadas atrás, sobre patrones de asentamiento, jerarquización de sitios, distribución y densidad de materiales arqueológicos, así como excavaciones en algunos sitios con ocupaciones de este periodo. La investigación de la cerámica, puso énfasis en los diferentes análisis de pastas, diseños y formas, cuyos resultados han mostrado que la cerámica de estos sitios presentan similitudes y que las discrepancias no son muy marcadas. Las analogías y diferencias de la cerámica de este periodo, quizás no solo sean temas étnicos, sino se deban a actividades propias de cada pueblo: agricultura, pastoreo y otros, que los motivaron a trasladarse de manera intermitente. Pudiendo adquirir, intercambiar productos agrícolas, vasijas y objetos para el desarrollo de sus actividades. Esta investigación aborda la similitud y diferencias de las formas, decoración y tipos de pasta de cerámica del PIT y las compara con cerámica de varios sitios de Chinchero y la pampa de Anta.

Arata, Megumi (Tenri University Sankokan Museum), Masaaki Shimizu, Marina Shimizu, Yuji Seki (National Museum of Ethnology), and Daniel Morales Chocano (Universidad Nacional Mayor de San Marcos)

[282] *Metallurgy at the Pacopampa Site*

The excavations and subsequent analysis of the unearthed artifacts have provided evidence of metal smelting and metalworking at the Pacopampa site. Although the production workshop remains unidentified, it has been confirmed that materials presumed to have been produced through metallurgical processes were excavated from rooms on the third platform with restricted access. Furthermore, the discovery in 2014 of a tomb containing ore powder was buried along with gold ornaments suggests that the elite may have controlled the entire process, from the acquisition of raw materials to smelting and processing. This presentation will report on the metallurgy conducted at the Pacopampa site during the middle to late Formative period, drawing on the analysis of excavated artifacts and geological and experimental studies. It will also endeavor to elucidate the actual conditions of metallurgy at the site and examine them through the lens of elite control.

Araujo, Astolfo (University of São Paulo)

[53] *The South American Paleolithic: New Results and a General Overview from Brazil*

Sites dating from the Pleistocene/Holocene transition are becoming more common as archaeological research advances in Brazil. In this communication we will present new data from SE South America and address questions about site formation processes and dating that need to be addressed and incorporated into the reasoning about the peopling of the American continent. We will also discuss how tropical settings pose challenges in interpretation and methods.

Araujo, Astolfo [236] see Araujo, Renata

Araujo, Astolfo [157] see Constantino Perez, Glauco

Araujo, Astolfo [121] see Correa, Letícia

Araujo, Renata (Museum of Archaeology and Ethnology, University of São Paulo), Mercedes Okumura, and Astolfo Araujo (University of São Paulo)

[236] *Unveiling Shape and Size Diversity: A Geometric Morphometric Perspective on Holocene Formal Lithic Artifacts in São Paulo State, Southeastern Brazil*

Geometric Morphometric Methods (GMM) stand as a robust analytical approach originating from evolutionary biology, designed to quantify and assess variations in the shapes of biological specimens. Over the past 15 years, archaeologists have increasingly employed GMM to scrutinize the shape diversity of archaeological artifacts. Particularly prevalent in evolutionary archaeology and lithic studies, GMM facilitates researchers in making inferences about cultural evolution, technological advancements, and the diffusion of ideas or practices in ancient societies. This presentation shares the findings from the doctoral research of the primary author. This research, situated within a cultural evolutionary framework and Cultural Transmission Theory, focuses on describing and contrasting the morphological variability of lithic bifacial points and lithic unifacial tools from hunter-gatherer groups in São Paulo State, southeastern Brazil, during the Holocene. The ultimate goal is to show how GMM effectively highlights variations in lithic artifacts. While there is significant overlap in the shapes of both bifacial points and unifacial tools across the various regions of São Paulo State, unifacial tools generally exhibit a predominantly elliptical outline. There seems to be no cultural pressure to preserve specific unifacial tool shapes. It is also plausible that bifacial points possess a stronger stylistic significance compared to unifacial tools.

Arazi-Coombs, Sandra

[274] *Fieldhouses without Fields: Agropastoral Landscapes in the Sandia Mountains, NM*

The western foothills of the Sandia Mountains outside of Albuquerque, New Mexico, offers a unique perspective to understand the diversity of land tenure patterns that involve periodic mobility from primary to semipermanent residences. This paper explores the land tenure patterns of Hispanic communities that used the mountains as part of a mixed agricultural and herding economy from the 1600s to the mid-twentieth century. New pedestrian survey in combination with ethnohistorical data have revealed several

semipermanent residences related to this period of use and provide new insights into mobility patterns of these agropastoral communities.

Archila Montanez, Sonia [334] see Trujillo, Judith

Ardren, Traci (University of Miami), Lindsay Bloch (Tempered Archaeological Services LLC), and Michelle LeFebvre (Florida Museum of Natural History)

[32] *Geochemical Sourcing of Early Pottery from the Florida Keys*

Like many island sites with a rich archaeological record, the Florida Keys exist on the margins of mainstream research trajectories and have seen little systematic investigation. This paper presents the results of a geochemical pilot study of Ancestral/precolumbian pottery from two large midden sites in the Keys. The Keys material is compared to similar pottery from a contemporary midden site in the Everglades and a clay source in the Upper Keys. Results suggest independent areas of hyperlocal pottery production despite ceramic styles that were shared broadly across the region. Based on these results and our ongoing analysis of materials from new excavations in the Florida Keys, we offer suggestions on how the ceramic data informs models of social and political interaction at the height of Calusa complexity. Finally, we suggest future areas of research in order to better understand the social interactions of early south Florida peoples.

Arellano, Paloma [171] see Echenique, Ester

Argoti Gómez, Juan (Universidad San Francisco de Quito), and Mateo Subia

[105] *Resilience and Social Complexity in the Septentrional Andes: A Historical Ecological Comparative Study of the Jama Coaque and Pasto Cultures under Volcanic Influence*

This study presents a comparative analysis of the prehispanic Jama Coaque and Pasto cultures, two societies that flourished in present-day northern Coastal Ecuador and northern Andean Ecuador-southern Colombia, respectively. Situated in volcanic zones, both cultures developed unique social structures influenced by their adaptation to recurrent volcanic events that turned disaster into opportunity. Drawing on archaeological evidence from the Jama Coaque culture, plinian fallout, and lahar disruptions derivare in the establishment of satellite productive sites on the borders of rivers, as movement catalysts and high agricultural potential zones post fallout. In contrast, studies on the Pasto culture indicate a decentralized approach, characterized by dispersed settlements and the use of local community networks for decision-making and resource management through a micro-vertical landscape. Therefore, environmental stressors are translated to incidental and deliberate human actions that when studied through the *longue durée* construction of the landscape, showcase volcanic eruptions as enabling nonhuman agents in the shaping of social complexity.

Arias Espinoza, Oscar [282] see Yamamoto, Atsushi

Arieta Baizabal, Virginia (Universidad Veracruzana)

[118] *Entre la vida cotidiana y el poder: Exploraciones en una terraza domésticas de la primera capital olmeca de San Lorenzo, Veracruz*

Los trabajos pioneros de investigadores como Matthew Stirling y Michael Coe, y, más recientemente, las exhaustivas investigaciones del Proyecto Arqueológico San Lorenzo Tenochtitlán bajo la dirección de Ann Cyphers, consolidaron el reconocimiento de San Lorenzo, Veracruz como la primera capital olmeca. Esta ponencia presenta una nueva fase en la investigación de San Lorenzo Tenochtitlán, centrada en las terrazas habitacionales, específicamente en la terraza D4-22, situada en la ladera este del asentamiento. En 2024, el Proyecto Arqueológico Sociedades Olmecas: Sitio San Lorenzo Tenochtitlán revisó exhaustivamente la información de proyectos anteriores y llevó a cabo un programa de excavaciones para identificar evidencias sobre las jerarquías internas de la sociedad olmeca. El objetivo de esta ponencia es presentar las características de tipos, estilos y tamaños de viviendas para comprender mejor los aspectos socioeconómicos y políticos de los habitantes de esta primera capital olmeca. Este nuevo proyecto busca complementar el conocimiento sobre la sociedad olmeca y su región, aportando información sobre el patrón intra-sitio durante sus diversas fases de desarrollo. Además, contribuye a la comprensión de su estructura política, económica, religiosa y sociocultural, así como a las relaciones interregionales durante el Preclásico en Mesoamérica.

Armitage, Ruth Ann (Eastern Michigan University, Ypsilanti), Adelphine Bonneau (Université de Sherbrooke, Sherbrooke, Canada), Dawn Green (University of Cape Town), David Pearce (Rock Art Research Institute, University of Witwatersrand, Johannesburg, South Africa), and John Southon (Keck Carbon Cycle AMS, University of California, Irvine)

[174] *Comparative Dating of Carbon-Based San Rock Art Samples Using AMS Radiocarbon Analysis and Plasma-Chemical Oxidation*

Over the past 10 years, extensive characterization of San rock art has been conducted, leading to the identification of a wide range of coloring materials. The black paintings are composed of four classes of carbon-based materials: soot, charcoal, carbon black, and burnt bones, providing a potential avenue for ¹⁴C dating. By employing the comprehensive characterization of the paintings, it was feasible to diminish the requisite sample size for accelerator mass spectrometry (AMS) dating. Nevertheless, this approach necessitates chemical pretreatments, which are particularly invasive for such fragile specimens. An alternative approach is plasma-chemical oxidation (PCO), which involves the formation of CO₂ through a low-temperature chemical reaction, which generates microgram samples of carbon for dating purposes. Following the development of minimally destructive pretreatments for the removal of contaminants, PCO was tested on a range of paint samples. We present the results of PCO and AMS dating of rock paintings from various sites in South Africa. This is the first time that the same rock art samples have been independently prepared and dated by these two methods. Determining the age of rock paintings is crucial for understanding the context in which they were created and for situating them within their broader historical context.

Armstrong, Douglas [167] see Wallman, Diane

Armstrong, Gabriella [122] see Baci, Erina

Armstrong-Fumero, Fernando (Smith College)

[377] *Before and After the Carnegie Era: On the Financial and Logistical Standardization of US Archaeology*

The Carnegie Institution of Washington (CIW) program in Mayanist archaeology presents a pivotal transition in how US archaeologists financed and organized large-scale projects in Latin America. In many ways, this organization consolidated an earlier transition from direct elite patronage of archaeological collectors to the foundation of stable bureaucracies of finance, logistical management, and curation. Besides the unprecedented scale of funding made available for excavation and restoration, CIW policies also set a series of significant precedents regarding collecting activities and relations with the national governments of Mexico and Central America. As this program wound down in the postwar years, Carnegie scholars like Alfred Kidder collaborated extensively with archaeologists at other institutions, consolidating lasting patterns of funding and logistical support for the discipline. Tracing this process from the mid-1920s to the 1950s provides key insights into the larger social networks, economic interests and transnational politics that are at the heart of the discipline's history.

Arnold, Dean (Field Museum)

[171] *Maya Blue: Unlocking the Mysteries of an Ancient Pigment*

As one of the world's most unusual pigments, Maya Blue consists of a nano-structured hybrid of the inorganic clay mineral palygorskite and the organic dye indigo derived from extracts from the leaves of plants in the genus *Indigofera*. Used from the Late Preclassic into the early colonial period, Maya Blue, among other meanings, was a symbol of sacrifice and the Maya god of rain, Chaak, and adorned pottery, sculpture, murals, and codices. Unlike its constituent indigo and its precursors, it does not fade over time and is remarkably resistant to destruction by acids, alkalines, and a variety of solvents. Although studies by chemists and material scientists have written many hundreds of pages about its chemical composition, stability, and synthesis, little is known about how the Maya actually created it, and many mysteries remain. This paper helps resolve some of these mysteries by describing the ways that the Maya actually created the pigment based on the evidence from the analysis of 12 bowls that E. H. Thompson excavated in 1896 from El Osario (the Grave of the High Priest) in Chichen Itza that are now in the Field Museum.

Arnott, Sigrid [243] see Maki, David

Arrieta Baro, Iñaki**[294]** *Basque Tree Carvings in the American West*

Tree carvings, arborglyphs, or lertxun-marrak in Euskera, etched by shepherders constitute one of the most visible remnants of Basque culture in the western United States. They are also a case of living forms containing art created in open spaces, which creates innumerable challenges for their preservation. With an approach informed by history, archival sciences, and archaeology, this paper explores the opportunities to preserve these unique cultural artifacts in a manner that ensures their accessibility for research and community members alike.

Arroyo, Barbara (Museo Popol Vuh, Universidad Francisco Marroquín)**[106]** *Piecing Together Kaminaljuyu: The Enduring Legacy of Kenneth Hirth*

In 1985, as an undergraduate student at the University of San Carlos in Guatemala, I had the privilege of meeting Kenneth Hirth, who was then conducting pivotal research in El Cajón, Honduras. Despite his considerable academic stature, Ken generously provided insightful feedback on my presentation at an international conference in La Ceiba, where I presented research from the Pacific coast. His scholarly work, already well-known to us at the university, stood out for its rigorous application of theoretical approaches to meticulously gathered field data. This paper honors Ken's professionalism and his enduring commitment to fostering academic collaboration across Mexico, Guatemala, Honduras, and beyond. Through his support, I have had the opportunity to revisit and expand on the Kaminaljuyu archive housed at Pennsylvania State University. The results of this consultation offer new insights into the archaeology of Kaminaljuyu, which I will explore in detail in this paper.

Arroyo, Efrain**[85]** *The Biography of the Tumi de Oro in Peru*
[WITHDRAWN]

Arthur, Jacinta [26] see Ayala, Patricia

Arthur, John [69] see Tykot, Robert

Artz, Joe [183] see Joyce, Judith

Árvai, Mátyás [31] see Gyucha, Attila

Ashford, Ella [240] see Durga, Ricky

Ashton, Nick [82] see Gill, Jayson

Athanassopoulos, Effie (University of Nebraska, Lincoln), Yi Liu (University of Nebraska, Lincoln), Aaron Pattee (ACP Digital Consulting), and Leen-Kiat Soh (University of Nebraska, Lincoln)**[64]** *Enhancing Archaeological Classification with Machine Learning: The Lincoln Pottery Works Collection*

A significant challenge that many archaeological projects face is how to consistently and efficiently identify and classify artifacts, while processing a large corpus of data amassed through fieldwork. This is particularly poignant in smaller institutions that may lack the resources to utilize new and powerful machine learning techniques. In this poster, we propose a novel methodology that leverages machine learning techniques for the automatic identification and classification of artifacts. Our case study is based on the Lincoln Pottery Works (LPW) Archaeological Collection. The LPW was a stoneware factory in Lincoln, Nebraska, operating from 1880 to 1903, which produced utilitarian, domestic wares. The LPW collection's substantial size of over 14,000 objects has made it impractical to manually produce a comprehensive and detailed catalogue of its contents. We have developed a process that trains a machine learning model to identify and classify objects based on their specific attributes from both 2D images and 3D models of the artifacts within the collection. By creating a scalable and accessible framework, we aim to democratize the use of advanced machine learning

approaches, enabling resource-constrained institutions to enhance their artifact analysis and preservation efforts.

Athens, J. (International Archaeological Research Institute Inc.)

[105] *Volcanic Ash and Archaeological Sites in Northern Highland Ecuador*

Volcanic ash falls of varying depths, origins, and geographic coverages have occurred throughout the Holocene in the northern highlands of Ecuador. This paper will review the Holocene history of ash falls as documented from several lake core records in the region and also highlight the importance of several tephras with respect to establishing fixed chronological reference points for archaeological remains. In considering the role of volcanic ash chronologies for archaeological studies in the northern highlands, several issues are highlighted. One of these is the uneven geographic coverage of some of the ashes due to winds aloft during eruptions, or the distance from the volcano. Also, once deposited, the ash may disappear as a result of natural erosional processes. In addition, human activities, especially agriculture, can easily destroy ash deposits, especially thin ones. Dated volcanic ash deposits also can serve as important chrono-stratigraphic markers to aid the discovery of potential locations of early archaeological remains in the region. In this respect, an important conundrum for archaeologists is that archaeological remains in the region do not date earlier than about 3,500 years ago. Yet the Lake San Pablo core record demonstrates maize cultivation in the region since about 6,200/6,500 years ago.

Atici, Levent [235] see MacIntosh, Sarah

Atudorei, Viorel [320] see Warner, Monica

Auer, Jens (Landesamt Für Kultur Und Denkmalpflege MV), Marcel Bradtmöller (Heinrich Schliemann-Institute of Ancient Studies, Rostock University), Jacob Geersen (Leibniz Institute for Baltic Sea Research Warnemünde), Jens Schneider von Deimling (Kiel University), and Peter Feldens (Leibniz Institute for Baltic Sea Research Warnemünde)

[277] *Diving into the Stone Age: Approaches to Investigating a Submerged Stone Age Megastructure in the Baltic Sea*
In 2021, geologists discovered a curious, almost 1 km long stone wall in 21 m of water off the German coast in the Baltic. The structure is situated on basal till in close proximity to the shoreline of a sunken lake, and exhibits a number of characteristics that point to an anthropogenic, rather than a geological, origin. The stone wall, designated “Blinkerwall” in reference to its geographical location, was the focus of further multidisciplinary investigations in 2022 and 2023. These have led to the current hypothesis that the structure may represent a Late Pleistocene or Early Holocene drive lane for hunting reindeer. While numerous archaeological sites from the Stone Age are known along the Baltic coast of Germany, these are located in shallower water and mostly date to the Mesolithic and Neolithic periods. The investigation of the “Blinkerwall” thus presents an opportunity to study the subsistence strategies and mobility patterns of the first hunter-gatherers that followed the retreating ice sheets in Northern Europe. Furthermore, it may facilitate the discovery of analogous structures in remote basins of the Western Baltic Sea. This paper offers a short overview of the current state of the art of the project and discusses methodological approaches.

Auerbach, Claire

[373] *Exploring NAGPRA Best Practices in Evaluating Nonhuman Animal Remains in Federally Funded Museums*

My dissertation project explores the treatment of nonhuman animal remains within the framework of the Native American Graves Protection and Repatriation Act (NAGPRA). Despite growing recognition of the cultural and historical significance of certain animal remains among Native American descendant communities, NAGPRA lacks explicit provisions for these entities. Specifically, my project focuses on what factors should be considered when dealing with archaeologically recovered animal remains from special and unique contexts (e.g., animal burials) within the framework of assessments under NAGPRA. Currently, I am compiling a dataset on special and unique context animal remains from existing literature to inform questionnaires and semi-structured interviews with Tribal Historic Preservation Officers (THPOs) and museum professionals regarding this topic. My work aims to evaluate the alignment of current museum practices with Indigenous perspectives and determine whether these practices are commensurate with the views of THPOs from

Southeast US Tribal Nations. Broadly, my research goals are to enhance process and procedure regarding the effective implementation of NAGPRA practice, as well as foster a more equitable approach to repatriation and promote Indigenous data sovereignty in museum contexts.

Auger, Sam [42] see French, Jennifer

Auguiste, Irvince [167] see Wallman, Diane

Auker, Brianna, Daniel Dalmas (University of Utah), and Lawrence Todd (GRSLE Inc.)

[298] *Archaeology at Risk: Evidence of Wilderness Visitor Damage and Theft in the Greater Yellowstone Ecosystem*
Areas with a high probability of precontact material are often fundamentally good campsites—this creates a large overlap between postcontact activities within wilderness areas and archaeological artifacts, as humans are continually traversing these landscapes. The interpretive potential of surface archaeology is jeopardized when recreation traffic corresponds with vandalism, such as unauthorized artifact collection, campsite construction, and inadvertent damage by visitors. Postcontact activities were recorded with the same standardizations as non-collection documentation for precontact material, including descriptive information and locality. Material types included cached lawn chairs, beer cans, and signs of human-habituated animal behavior. By comparing the spatial overlap between artifact clusters and recreational features weighted by site probability, we assess the likelihood of site vandalism. In an effort to contextualize different causes for vandalism, the evidence recorded was also categorized as intentional, unintentional, or negligent behavior. Protecting surface archaeology requires rethinking its role, improving public education, enforcing regulations, and developing stronger management strategies. Anticipating what areas are at a greater risk of vandalism allows for earlier intervention and, hopefully, better protections for these landscapes.

Auker, Brianna [196] see Reid, Ethan

Averett, Erin [81] see Counts, Derek

Awe, Jaime (Northern Arizona University), Claire Ebert (University of Pittsburgh), Julie Hoggarth (Baylor University), J. Britt Davis (Arizona State University), and John Walden

[109] *The Earliest Maya of Western and Northern Belize: Evidence for Cultural Diversity and Regionalism*
In the 1970s and 1980s, investigations at Colha by Fred Valdez Jr. and his University of Texas colleagues uncovered considerable evidence for Preclassic occupation at this northern Belize site. These investigations complemented results of earlier research by Norman Hammond at Cuello, and the subsequent work of Patricia McAnany at Kaxob. In western Belize, investigations at Cahal Pech, Blackman Eddy, and Xunantunich also produced evidence for precocious Maya settlements in the upper Belize River Valley. Together, the evidence produced by research in both Belize subregions confirmed that the earliest Maya settlements in the eastern lowlands were established toward the end of the Early Preclassic period (ca. 1200–900 BC) and that these communities relied on a mixed subsistence economy based on maize agriculture and the exploitation of terrestrial and aquatic animal resources. When we compare other salient cultural features of these early communities, however, the data indicate that beside a few shared traits, the material culture of the two subregions are conspicuously and significantly more different than they are similar.

Awe, Jaime [320] see Corey, Kasey

Awe, Jaime [301] see Hoggarth, Julie

Awe, Jaime [325] see Meyer, Brett

Awe, Jaime [89] see Sprock, Cody

Awe, Jaime [223] see Suarez, Nicholas

Axume, Denise, Bethany Turner (Georgia State University), and Nicola Sharratt (Georgia State University)

[323] *Stress and Collapse: Histological Analysis of Enamel Fragments from Tumilaca La Chimba in the Moquegua Valley, Peru*

Periods of political fragmentation are often, but not necessarily, associated with precarity and declines in overall health, especially among vulnerable members of affected communities. The collapse of the Tiwanaku state in southern Peru is one such context where the effects of top-down disintegration had varying impacts on provincial regions, making it an ideal locus for exploring changes, or lack thereof, in health through time. This study compares the frequencies of micro-defects in tooth enamel known as accentuated lines, which provide evidence of stress episodes during infancy and early childhood, in individuals from two occupation phases at a provincial site of Tumulaca la Chimba in Moquegua, Peru. These two cohorts are associated with the Tiwanaku collapse during the Terminal Middle Horizon (TMH; 1000–1250 CE) and subsequent Late Intermediate period (LIP; 1250–1470 CE). Results indicate no significant difference in the prevalence of accentuated lines between the TMH cohort ($N = 8$) compared to the LIP cohort ($N = 16$), though prevalence in the former may be associated with earlier age at death. These results support existing interpretations of local continuity and stability in Moquegua, though with more subtle signs of stress in the immediate aftermath of Tiwanaku's fragmentation in the region.

Ayala, Abilene (San Diego State University), Arion Mayes (San Diego State University), Arthur Joyce (University of Colorado, Boulder), and Akira Ichikawa

[290] *Population Distance at the site of Río Viejo during the Classic–Postclassic Transition*

This research investigates population dynamics in the Lower Río Verde Valley (LRVV) of Oaxaca, through the analysis of nonmetric dental traits from the prehispanic archaeological site Río Viejo during the Classic to Postclassic period transition. The LRVV has been continuously inhabited since the Early Formative and has experienced population changes due to anthropogenic and environmental factors. Archaeological and skeletal evidence indicates a notable population shift around 800 CE attributed to socioenvironmental dynamics rather than warfare or colonization. This study employs biodistance methods through the systemic scoring of 39 nonmetric dental traits to establish biological affinities within the site and across temporal periods. Given the current absence of DNA data from the site, the use of dentition, which is highly genetically controlled with inheritance factors facilitates the analysis of inter- and intraregional relationships among populations and specifically Río Viejo. The reconstruction of kinship and settlement patterns during periods of transition enhances understanding of how populations in the region adapted to complex environmental and sociopolitical changes. ***This presentation will include images of human remains.

Ayala, Patricia (Universidad de Chile), and Jacinta Arthur (Universidad Católica del Norte)

[26] *Indigenous Movements for the Return of Ancestors in South America and Their Repercussions on Ethical Discussions on the Respectful Treatment of Human Bodies*

The colonization of South America presented diverse characteristics depending on the colonial powers involved and the Indigenous Peoples subjected to colonization, who early on witnessed the destruction of their cemeteries and the prohibition of their religious practices. The subsequent formation of nation-states, with their assimilationist and genocidal policies, had varied impacts on native populations, one of the most detrimental being their disconnection from the bodies of their ancestors. These ancestral remains were often appropriated by the state, becoming objects of scientific study and museum artifacts. Within this context, contemporary relationships with human remains buried in archaeological sites or displayed in museums vary. While some Indigenous Peoples assert ancestral connections, others have lost that bond, viewing these remains as “other,” and still others are reconstructing their ties with them. Despite the complexities of these processes, since the 1980s, Indigenous struggles for territory, cultural rights, and self-determination have increasingly intersected with demands for the respectful treatment of their ancestors. It can be asserted that in South America, Indigenous Peoples have organized and mobilized to defend their right to determine the fate of their ancestors and the cultural materials removed from their original territories. This paper presents a discussion on this subject and its implications for ethical debates.

Ayala, Patricia (Universidad de Chile)

[159] *Collaborative Project in the Atacameño Lickanantay Territory (Northern Chile): Toward the Return of the Ancestors*

This paper seeks to reflect on the definitions and application of collaborative methodologies in archaeology. We highlight the contributions of collaborative and indigenous archaeologies to generate knowledge based on

joint efforts, which considers local perspectives as well as having a potential to benefit processes of community interest. In the specific case of our research, the work has focused on studying the history of collecting and the patrimonialization of Indigenous bodies in the Atacameño Lickanatay territory. Due to its contributions to decolonization, the methodology used in this work is inspired and nourished by collaborative and indigenous archaeologies, aiming to contribute to the political and social processes of the Atacameño People, by collecting one of their most heartfelt demands regarding the respect for their ancestors, which were taken away from their burials and sent to different institutions inside and outside the country. The joint work between Atacameño and external researchers has been carried out from a critical and reflexive perspective. First, to locate the collections of the bodies of their ancestors and, second, to socialize, sensitize and inform the Atacameño People and general public about the work carried out to, thirdly, talk and discuss about their return or repatriation to the territory.

Ayala, Sergio

[314] *Stone Tool Manufacturing in the Gault Assemblage: Experimental Analysis of Dart Points and Bifaces below the Clovis Horizon at the Gault Site, Texas*

It is essential to investigate well-stratified residential sites containing both Clovis and pre-Clovis materials to compare technologies used in the same location under similar conditions. The Gault site, Texas, contains the entire occupational sequence in the region, spanning the Paleoindian, Archaic, and Late Prehistoric periods. The Gault Assemblage, found beneath the Clovis horizon in excavation Areas 12 and 15, primarily consists of fragmented artifacts with a few complete specimens. Lithic analysis of dart points and bifacial tools from Area 15, complemented by experimental work, has identified technological behaviors related to ancient social groups that existed between three to six millennia before Clovis. This paper examines the strategies and techniques observed in the Gault Assemblage, focusing on flaking technologies to understand both assemblage-level and individual-level stone tool production behaviors, thereby contributing to the characterization of these ancient Paleoindians.

Ayala, Sergio [189] see Pontillo, Katharine

Ayelagbe, Timilehin [288] see Tomazic, Iride

Ayers-Rigsby, Sara [99] see Napora, Katharine

Bacha, Henry (University of Chicago)

[89] *Old World Pastoralisms in the Early Colonial Andes: A Reassessment of Faunal Remains from Colonial Contexts at Inka Administrative Sites in the Central Sierra*
[WITHDRAWN]

Bacha-Garza, Roseann [243] see Skowronek, Russell

Baci, Erina (University of Michigan), and Gabriella Armstrong (Stanford University)

[122] *Preliminary Results of the AASK Project: Using Geospatial Analyses to Investigate Prehistoric Settlement Patterns in Kosova*

This poster presents preliminary findings from the Atlas of Archaeological Sites in Kosova (AASK) Project, an initiative aimed at advancing geospatial analysis of archaeological data in Kosova by using innovative methods like remote sensing, drone imaging, and 3D modeling. The project's first major achievement is a comprehensive site database that catalogues over 1,000 archaeological sites in Kosova, classified by periods and site types. This database was compiled by UROP students at the University of Michigan who drew from the Archaeological Maps of Kosova Volumes I–III (2006, 2012, 2017). Kosova is rich in archaeological heritage, with evidence of human occupation from the Neolithic period to the present (Përzhita et al. 2006, 2012, 2017). Although systematic excavations and analyses of prehistoric sites have been ongoing since the 1950s, comprehensive regional geospatial analysis of these sites in Kosova is still emerging. In this poster, we present the first broad geospatial analysis of prehistoric sites across Kosova, examining the Neolithic, Bronze Age, and Iron Age separately and comparing them to identify changes or continuities over time. Such regional

geospatial analyses are essential for uncovering spatial patterns, cultural interactions, and site distribution, which enhances our understanding of past societies and aids in current preservation efforts.

Baci, Erina [346] see Norwood, Alexandra

Badillo, Alex (Indiana State University; Stantec), Dante García (Zona Arqueológica de Monte Albán), Juan Jarquín Enríquez (Independent Researcher), Victoria Castle (Stony Brook University), and Marine Frouin (Stony Brook University)

[347] *Innovative Methods and New Discoveries: A Preliminary Report from Excavations at Las Mesillas in the Southern Mountains of Oaxaca*

In the summers of 2022 and 2023, members of the Proyecto Arqueológico de Quiexchapa (PAQuie) completed test excavations at the archaeological site of Las Mesillas located in southern mountains of Oaxaca, Mexico. Innovative approaches were used to document the excavations that combined paperless and photogrammetric methods. The excavations, while small, begin to bring into focus the history of the site of Las Mesillas. Ceramic analysis and optically stimulated luminescence (OSL) dating techniques confirm that the site experienced major architectural modifications beginning in the Classic period that continued into the Late Postclassic. In this paper, we will describe our innovative approach to excavation and report on our preliminary findings from Las Mesillas and their implications.

Badon, Darcie [333] see DeGaglia, Cassandra

Baetens, Gert [167] see Heinrich, Frits

Báez Santos, Laura Victoria [41] see Sarmiento Rodríguez, Juan

Bailey, Kathryn [387] see Harrison-Buck, Eleanor

Bailey, Sean [75] see Mink, Philip

Baioni, Marco [375] see Martinelli, Nicoletta

Bair, Andrew

[31] *Pseudo-excavation: Combining Archaeological Geophysics, Targeted Soil Coring, and Radiocarbon Dating for Minimally Invasive Settlement Archaeology*

Buried settlements are rich archaeological resources, diachronically recording the daily lives and repeated practices of ordinary people. But in their complexity and size, settlements present challenges for the researcher, often limited by time, money, and labor. This paper presents a methodology designed to address challenges inherent in settlement archaeology by first combining datasets of ground-penetrating radar and magnetometry to create large-scale maps of subsurface archaeological features, then coring targeted buried features to better inform geophysical interpretations and collect soil samples, which are finally processed to recover paleoethnobotanical samples for radiocarbon dating. In doing so, buried archaeological landscapes can be “pseudo-excavated,” where features are identified, mapped, and sampled without a single shovel being raised, leaving most of the archaeological archive intact and preserved. The following paper reports ongoing fieldwork of a medieval cultural landscape in western Ireland, which hopes to address fundamental chronological questions related to settlement use and patterning across Ireland’s 1,000-year Middle Ages.

Baires, Sarah, and Melissa Baltus (University of Toledo)

[102] *Dirt Archaeology and Big Histories: Tacking between Details and Impacts of Tim Pauketat’s Career in Archaeology*

The lengthy and illustrious career of Timothy Pauketat has spanned decades of research in the American Bottom of Illinois. Rooted in meticulous methodology and a “dirt archaeologist” at heart, Tim’s theoretical scholarship has ranged broadly. Here we focus on the two decades in which Tim’s teachings have shaped our own work, specifically the emphasis on scale and history, as well as centering religion and alternate ontologies

in historical processes. From our initial work together excavating structures at eastern upland shrine sites to exploring Cahokia's missionizing sites in the hinterlands of Wisconsin, we consider the ways in which we can work from detailed data to big-picture histories. During this era of Tim's influence, we recognize the ways in which considering Cahokia through the lens of urbanism reframed our understanding of the site's impacts beyond the American Bottom.

Baisden, Rebecca (USFS)

[274] *Small Sites and Big Assumptions: Questioning the Uncritical Use of "Field House" to Classify Small Precontact Structures on South Cat Mesa of the Jemez Ranger District*

Small precontact structures throughout the Southwest that lie on the periphery of large village sites are often classified as "field houses," a term that carries with it the assumption that these structures were utilized seasonally, occupied for a short duration of time, and whose function is tied to agricultural practices. The uncritical and widespread use of this classification without consideration of the entire artifact assemblage may skew archaeological interpretations of land use, demography, and settlement patterns. This paper examines field houses on South Cat Mesa of the Jemez Ranger District to answer whether the broad and uncritical use of this term to describe small precontact structures assumes a singular function when they may have served more than one purpose. To test this idea attributes drawn from previous research were analyzed for 131 field house sites including method of construction, number of rooms, presence of extramural features, assemblage size, ceramic types present, and flaked and ground stone. This study shows that there is variability in sites classified as "field houses" on South Cat Mesa suggesting that some may have been used more intensively, occupied for longer periods of time, reoccupied repeatedly through time, or may have had other functions.

Baitzel, Sarah [182] see Kennedy, Sarah

Bajorek, Kate

[294] *Nonhuman Animal Use at the Silo of Charlemagne (Orreaga/Roncesvalles, Navarre)*

This paper presents the preliminary results of a zooarchaeological study of the nonhuman bone recovered from the Silo of Charlemagne, a long-term, multi-use ossuary located in Orreaga/Roncesvalles, Navarre (Basque Country). Animal husbandry in the Pyrenees historically includes raising domestic animals, particularly cattle and sheep, for various uses including for meat, secondary products such as wool and milk, transport, traction, and as status symbols. However, the presence of nondomestic animals in the faunal assemblage indicates that husbandry was not the sole source of animal bone at the Silo. This presentation will review the species present in two large eighteenth- and nineteenth-century contexts from the site and put forward provisional hypotheses for their use by humans and deposition in the Silo. To support these hypotheses, a brief review of the evidence for butchery will be presented. The results of this study will contribute to the interpretation of the contexts as potential Napoleonic refuse deposits.

Baker, Madison

[336] *Homesteading in Jim Crow Los Angeles County: A Comparative Study of Material Culture at the Alice Ballard Cabin*

Black Americans had the opportunity to build achievable wealth through land ownership under the Homestead Act of 1862. Alice Ballard was one of few Black women to homestead in California during the height of the Jim Crow Era. Excavations in 2018 at Alice's cabin site in Los Angeles County have unveiled significant archaeological investigations. Recent research has analyzed the material culture of Alice Ballard's homestead, primarily ceramic ware and glass bottles, with that of contemporary homesteader William Moores, a White Anglo-American man located 16 miles away. The two homesteads present a dichotomy of historic sites with similar contexts and contrasting ethnic backgrounds. This study addresses consumer choices as a method of building social capital in the late nineteenth century. Alice Ballard's homestead gives insight into the multifaceted gendered experiences of women and the reality of the American West for Black individuals compared to their local non-Black contemporaries.

Baker, Phoebe (University of Liverpool)

[42] *Living with the Cold: Ethnographic Analogies for Cold Weather Adaptation during the Upper Paleolithic of Central and Eastern Europe*

The human body is not naturally well adapted to the cold. Despite this, we have succeeded in penetrating some of the most extreme environments across the globe. In recent years, discussion of the origins of the “human thermal environment” has gained traction in the literature, with growing appreciation that humans living in higher latitudes are dependent on technological adaptations such as fire, shelter, and clothing. Reconstructions of conditions in eastern and central Europe during the Upper Paleolithic demonstrate a unique environment characterized by high biodiversity, climatic extremes, and a marked lack of natural protection such as caves or rockshelters. The archaeological record for this area hints at a number of behaviors to cope with the cold, such as the construction of large, free-standing structures; use of textiles; and hearth structures. However, the decay of organic remains at these sites prevents a full understanding of the technological repertoire employed to enable life in these extremes. Although Indigenous populations are not directly analogous to Paleolithic ones, many employ technology that is likely to be reflective of thermal pressures in similar ways to those in prehistory. In this light, this paper critically applies the ethnographic cold weather record to the Paleolithic.

Baker, Poly [207] see Cooper, Anwen

Baker, Sheldon [55] see Field, Sean

Baker, Sheldon [326] see McAllister, Christine

Balanzario, Sandra

[83] *Arquitectura e ideología de la dinastía Kaanu’l de Dzibanche: Nuevos datos del Proyecto Promeza Dzibanche/Kaanu’l 2023-2024*

Los datos epigráficos actuales, sugieren que el nombre de Dzibanché, es Kaanu’l “lugar de serpientes” y sus gobernantes fueron los ‘señores sagrados de Kaanu’l. Dzibanché se ubica en el Sur del Estado de Quintana Roo, México. Las exploraciones que se han realizado en el periodo 2023-2024, han permitido vislumbrar la arquitectura de los edificios monumentales, con características asociadas al estilo de la dinastía Kaanu’l. Edificios decorados con “pilastras pareadas”, emplazados sobre basamentos con cuerpos en talud-tablero con relieves de estuco. Además de las nuevas exploraciones en los Juegos de Pelota y Pequeña Acrópolis, conjuntos ubicados en el Grupo Principal de Dzibanché. *****Esta presentación incluirá imágenes de restos humanos.**

Balanzario, Sandra [169] see Tiesler, Vera

Balanzategui, Daniela [315] see Sallum, Marianne

Balcarcel, AnaBeatriz (FARES Foundation)

[383] *The Built Space, Its Interpretive Dimension, and a Coded Message: The Triadic Ensemble of the Balam Group of the Great Central Acropolis, Petén, Guatemala*

The architecture of the acropolis-type complexes of triadic pattern permeates the Preclassic environment in several important cities of the Maya area. These complexes, despite presenting different orientations, dimensions and typology, maintain a typical distribution of a restricted nature in their whole and urban layout that makes them easily recognizable. For several years, a group of peculiar importance has been investigated, given its location in the heart of the city and Preclassic temporality located in the Great Central Acropolis of El Mirador. The Balam Group presents a game of triadic groups on the same stage. A built space that allows for a functional interpretive dimension with a coded message through its constructions, and the sculpture integrated into it, which as a whole represents the seat of power of a segment of Maya royalty.

Balcarcel, Ana Beatriz [383] see Alvarado, Silvia

Balco, William (University of Wisconsin, Milwaukee), and Jennifer Picard (University of Wisconsin-Milwaukee Archaeological Research Laboratory Center)

[37] *Contextualizing a Multicomponent Precontact Site among Lake Michigan's Dunes in Wisconsin*

Archaeological investigations of the Kohler Dunes and Swales site (47SB0713) situated in Sheboygan County, Wisconsin, identified overwhelming evidence of precontact occupation and land use by Archaic, Early Woodland, Middle Woodland, Late Woodland, and Oneota populations. This paper parses the more than 1,000 features, 75 cultural strata, and 11 structures comprising 48 distinct complexes of features identified during Phase III investigations of the site. Evidence of precontact anthropic activities is presented, contextualizing the intensification of repeated, seasonal occupation of the site. Finally, this paper characterizes and compares the various communities that occupied the site over several thousand years.

Balco, William [122] see Kirk, Scott

Baldino, Jacob

[234] *Material and Form Effects on Fishhook Durability: Experimental Assessment of Late Pleistocene Fishhooks*

Although fishhooks are a global technological phenomenon over 20,000 years old, bone and shellfish hooks are under-researched experimentally. In this study we assess whether differences in material and form produce significant differences in hook durability. Consensus artifact models representing averages of Late Pleistocene fishhook assemblages from the Tron Bon Lei Rockshelter in Indonesia and the Jordan River Dureijat site in Northern Israel were used as the basis for artifact replication and testing.

Baldwin, J. Dennis (University of Texas, Austin), Thomas Garrison (University of Texas, Austin), Timothy Beach (University of Texas, Austin), Sheryl Luzzadder-Beach (University of Texas, Austin), and Carlos Morales-Aguilar (University of Texas, Austin)

[325] *Maya Water Management in Guatemala's Petén during the Classic Period (AD 200–800)*

The Ancient Maya founded a civilization that endured for thousands of years in the tropical environment of southern Mesoamerica. A century of research in this region has revealed complex water management systems near urban centers designed to capture and store vast quantities of water and possibly provided aquaculture. Over the last decade with growing lidar availability, studies of Maya water management have grown exponentially. This paper uses GIS analysis to characterize dams and reservoirs visible in lidar data in and around the major Maya sites including El Zotz and La Cuernavilla in the central Petén and Rio Azul to the North. Laboratory analyses of geochemistry, radiocarbon dating, archaeological materials recovered from water management features have aided our efforts at characterization and chronology building. The evidence suggests increasingly vigorous construction efforts beginning during the Terminal Preclassic, which may indicate societal responses to increasing population and environmental pressures during this pivotal transition in Maya civilization. Beyond the Maya area, we hope that this work will serve as an important case study in ancient landesque capital, especially water management strategies. This investigation resonates with modern efforts to find engineering solutions to meet societal needs in times of climate change and instability.

Baldwin, J. Dennis [107] see Garrison, Thomas

Ball, Daunte (University of Arizona)

[383] *At the Intersection of Ideology and Architecture: A Relational Analysis of How the Late Preclassic Maya Used Monumental Architecture to Transform Middle Preclassic Platforms into Places of Meaning*

From a social memory perspective, the act of erecting and constructing symbolic monumental architectural works is an inherently ideological practice. For the ancient Maya, while it is long understood that innovative architectural traditions were used to bind emerging ideological spheres, today much still remains unknown regarding the deeper social and ideological motivations of early Late Preclassic (300 BC–AD 1) Maya peoples building symbolic monumental architectural works over earlier Middle Preclassic platforms and plazas (1000–400 BC). This paper specifically seeks to remedy this shortcoming by attempting to flesh out the social processes of how early Late Preclassic residents used monumental architecture to give 'new' meaning(s) to Middle Preclassic platforms. To do this, I especially draw on data from my recent excavations in the Grupo Trogon Plaza of El Mirador, where dual pyramids are situated on the eastern and western sides of the Plaza.

Using data primarily obtained from the eastern pyramid (Str. 36), I argue that later inhabitants placed their architectural constructions over the Middle Preclassic plaza as a deliberate strategy to not only establish continuity with the past, but also to likely both subtly and overtly manipulate/subvert established political/ideological orders by reflexively imbuing their antecedents with contemporary reverence and relevance.

Ball, Daunte [383] see Hansen, Richard

Ballard, Reagan [346] see Pitblado, Bonnie

Ballester, Benjamin (Universidad de Tarapacá; Museo Chileno de Arte Precolombino), and Estefanía Vidal Montero (Universidad Alberto Hurtado, Santiago, Chile)

[45] *Bodies, Settlements, and Monuments: The Architectural Landscapes of the Coast of the Atacama Desert (6500–1200 cal BP)*

The construction of the social landscape of the Atacama Desert coast (northern Chile) was a long and dynamic process in precolumbian times, involving different agencies and material strategies. Around 6500 cal BP, these fisher-hunter-gatherers started building permanent settlements composed of clustered semisubterranean enclosures, built with rock and mortar. These dwellings not only contained the living but also the dead, buried under sealed floors with plenty of goods, entering into quotidian relationships with the living. Nevertheless around 3000–2500 cal BP, the old architecture disappears and a new spatial pattern emerges, signaling a different relationship between the living and the dead. The burials become monumental mounds, clearly separated from residential spaces. From this moment on, the tombs become aerial and visible, no longer hidden underground. These cemeteries form tumuli fields that can contain more than a hundred individual mounds. Conventionally, these transformations have been associated with the reduced residential mobility and the territorialization of the Formative period. This paper speculates about the political role of the dead in this construction process of the landscape and propose that their material changes may signal about the transformation of these communities in a context where placemaking may have played a key role in the extended social networks.

Baltus, Melissa [102] see Baires, Sarah

Bamforth, Douglas (University of Colorado, Boulder)

[184] *Invisible Battlefields and Archaeological Research on War*

Discussions of the deep history of social violence depend on archaeological evidence, evidence that is subject to the same issues of bias and preservation as other archaeological evidence: organics decay and archaeologists work where we can see objects. Warfare research in archaeology depends particularly on bioarchaeological evidence of violent death and the presence and design of community fortifications. History and ethnography, though, document the importance of combat in the open—on battlefields—and Douglas Scott and other battlefield archaeologists show that the archaeology of battlefields offers important information on the scale and organization of conflict. This can tell us, in turn, about the scale and organization of the societies engaged in that conflict. However, battlefields, particularly ancient battlefields, rarely yield human remains or concentrations of artifacts; they are effectively invisible to us. I argue here that this means that our accounts of the deep history of war are systematically biased and incomplete and are particularly likely to misrepresent social aspects of intergroup conflict.

Bandama, Foreman [51] see Mtetwa, Ezekia

Bandy, Everett [102] see Watts Malouchos, Elizabeth

Banikazemi, Cyrus (University of Illinois, Chicago), Benjamin Schaefer, and Michael Colton

[379] *Ketchup in the Times of Stress: An Analysis of Dietary Resilience in the Philippines, World War II Onward*
Food shortages and rationing during World War II brought about substantial changes in the ways in which peoples accessed and innovated cuisine across the Philippines. Focusing on these innovations helps

underscore the dynamic nature of native dietary customs as they become subject to external political influences and social stress. Employing resilience theory to investigate the impact of wartime stressors on dietary innovations and alterations from the prewar period to the present day, this study explores the broader consequences of dietary shifts resulting from ecological disruptions and food shortages. Historical examples, such as the widespread occurrence of beriberi caused by a deficit in vitamin B complex associated with nutrient-deficient rice, demonstrated the significant consequences of colonial practices. The postwar emergence of cost-effective and conveniently portable food items such as Spam serves as a clear illustration of how external influences transformed local eating habits. By evaluating these historical and contemporary developments, the study provides insights into the durability and adaptation of Filipino food systems in the face of colonialism, conflict, and globalization. This study enhances our comprehension of dietary resilience, offering viable solutions for present and future food security issues.

Banikazemi, Cyrus [44] see Underhill, Anne

Banks, Kimball

[108] *Archaeologists, Climate Change, and You*

Climate change is an umbrella that encompasses a variety of interrelated environment and social impacts such as sea-level rise, increased temperatures, changing weather patterns, forest fires, drought, famine, migration, and conflict. Increasingly governments are trying to figure out ways to address it. The Biden administration has taken a front-row seat in addressing change through climate initiatives, agency policies, and the NEPA process. Archaeologists are in a unique position to contribute to addressing climate change with respect to threats from and potential solutions to impacts of climate change. Archaeologists has long been interested in the interplay between environmental change and the human condition, in the human response, both culturally and technologically, to environmental/climate change. Today, that interest extends to the impact of climate change to modern society. Increasingly, archaeologists are examining the technological responses of past cultures to battle climate change. This paper examines the lessons that archaeology can teach us about possible technological responses to what we are facing and argues that archaeologists need to be at the table in international and governmental discussions of climate change, but it will not be easy gaining that seat; archaeologists will have to fight for it and there are ways to do that.

Banks Whitley, Catrina [297] see Hofland, Samantha

Banowsky, Anna (University of Iowa)

[108] *Running for Office as an Archaeologist: How the Professionals Can Work with Government Officials and Candidates to Promote the Field*

In this presentation, I will discuss the ways in which archaeologists can work with government officials in the United States to promote the field of archaeology. Drawing on my experience as a graduate student in archaeology and a candidate for the Iowa House of Representatives, I will explain how archaeologists can benefit from getting involved in policymaking—namely, how professional involvement can lead to strengthened protections for archaeological and historical sites. As a 2024 delegate to the Democratic National Convention, I was given the opportunity to participate in a behind-the-scenes tour of Chicago's Field Museum. From both this experience and my time as a candidate for public office, it is clear to me that a transformation of current cultural resource management will rely on cooperation between archaeologists, policymakers, and descendant communities. I will conclude this presentation by detailing how working across these divisions can advance the field into the twenty-first century.

Baquedano, Elizabeth

[97] *The Role of Music in the Activities of the Mexica Ruler*

The Mexica kings used music in performing diverse but specific religious and political duties. It was played in connection with their hunts too; and the kings enjoyed music for its own sake. Music was integral to the education and training of nobles and priests. It was also valued by commoners, both in worship and as entertainment. Nahua and colonial codices provide abundant information about the ensembles and their instruments. Offerings at the Great Temple included instruments; and others found at the flanking Red

Temple and its twin shrine express associations with fire and with water. Ethnohistorical evidence provides clues for interpreting these discoveries. In particular, this paper assesses the role of the *teponaztli* drum, which was played at funerals and used by kings to announce war: could it have worked with the blood of a sacrificial victim's heart poured into it as claimed by sixteenth-century chroniclers? Is it plausible that war captives were killed on small drums?

Bar-Yosef Mayer, Daniella

[219] *Cowries as Social Currency in the Iron Age Levant*

For shell to be considered a means of payment, they should fulfill several requirements: they must be portable, durable, divisible, and recognizable. Historic and ethnographic evidence support the use of cowries as money with the earliest archaeological evidence for extensive use of cowries from Mongolia and China between 2200 and 220 BCE during the Bronze and Early Iron Age. Whether they were used as money is debated. Supported evidence of cowries, *Monetaria moneta* is found in Bengal from the third–sixth centuries CE where they served in small transactions, in parallel to weighted lumps of silver. I propose that the idea of cowries as “small change” that accompanies silver originated in Southwest Asia where *Monetaria annulus* were used. Beginning in Iron Age II, from the tenth–seventh centuries BCE, cowries are present in almost every site. The system seems to have dissolved and cowries disappear from the archaeological record once coin minting began around 630 BCE. Shell money as a concept may have spread from there westward to Europe and eastward to the Indian subcontinent and parts of China.

Baraki, Niguss [279] see Thompson, Jessica

Barba-Meinecke, Helena [381] see Clark, Loren

Barberena, Ramiro [174] see Romero Villanueva, Guadalupe

Barcellos Gaspar de Oliveira, Maria Dulce [165] see Ramos, Marcos Paulo

Bardolph, Dana [195] see Amber, Annalisa

Bardolph, Dana [226] see Moran, Alia

Bardolph, Dana [189] see Mullins, Patrick

Bardolph, Dana [192] see Raab, Bailey

Bardolph, Dana [102] see Wilson, Gregory

Barkai, Ran (Tel-Aviv University)

[279] *The Elephant in the Cave: A Paleolithic Perspective*

In this talk I will try to touch on, and tie together, two major elements in early human adaptation, culture and perception—namely, elephants and caves. Proboscideans presence in Paleolithic caves is manifested in two major ways: either as selected body-parts brought in from the hunt for human consumption, or as depictions on the cave's walls. It is indeed either/or, as caves yielding proboscideans remains usually do not demonstrated cave “art” and vice versa. The only exception to the rule is mammoth ivory sometimes used for the production of mobile “art” at some Upper Paleolithic caves in Europe. The long dependency of Paleolithic humans on proboscideans will be summarized, and the probable effects of elephants/mammoths disappearance/extinction on human subsistence and ontology will be discussed. I will suggest that by tracing elephant presence in Paleolithic caves one can follow the long and changing interactions between early humans and proboscideans and new light can be shed over these interesting relationships.

Barkai, Ran [279] see Sedlmayr, Jayc

Barker, Alex (Arkansas Archeological Survey)

[295] *Inferences through a Glass Darkly: Interpreting Mesoamerican Obsidian in the Late Precontact / Early Contact Southwest and High Plains*

Throughout her long career Alice Beck Kehoe has challenged us to recognize, on the one hand, the

interconnectedness of past peoples, and to ignore, on the other, the blinders of accepted wisdom and strictures of the moment's paradigm. This paper briefly discusses alternative ways of understanding the distribution of Mexican obsidian artifacts in the southwestern United States and southern high plains in the late precontact and early contact periods. While generally presumed to represent the route of the Coronado expedition, compositional analyses conducted by multiple researchers, projects and laboratories allow different and somewhat contradictory constructions depending on starting assumptions and the relative weight given to different kinds of arguments, or what kinds of questions one wishes to answer. These data, their different interpretations, and the ways implicit or explicit assumptions support or undermine specific inferences or inference chains are discussed with reference to (and gratitude for) Dr. Kehoe's adjurations.

Barker, F. Timothy (Power Engineers), and Tristan O'Donnell

[365] *Of Canals for Conveying Water to Mills: Recordation of the Nineteenth-Century Oak Hill Pond Millrace Site, North Kingstown, RI, and Its Comparison to Millrace Construction Described by Oliver Evans's 1795 The Young Mill-Wright and Miller's Guide*

Archaeological documentation of the nineteenth-century Oak Hill Pond Millrace site in North Kingstown, RI, examined a 30 m section of the existing millrace structure threatened by upgrades to an electric transmission corridor. The recordation incorporated representative elevation and cross-section views, scale photography, and employed photogrammetric and other 3D modeling of the millrace. This presentation endeavors to illustrate the results of the millrace recordation and compare the data with historical construction techniques. The excavations into the millrace berm revealed its formation of cobble riprap held in place within the embankment by a retaining wall. An analysis of the data obtained through the elevation and cross-section views indicates its construction is comparable to the dimensions and form of a millrace as outlined by Oliver Evans in the 1795 *Young Mill-Wright and Miller's Guide*. Along with these methods of data collection, the millrace photogrammetry will be utilized in the restoration of the millrace structure within the transmission corridor.

Barker, Kristin (Beyond Yellowstone Program), Collin Taylor (Penn State University), Emily Milton (Michigan State University), Chris Widga (Penn State University), and Lawrence Todd (GRSLE Inc.)

[88] *Exploring Landscapes Dynamics: Integrating Multidimensional Regional Datasets from the Greater Yellowstone Ecosystem*

Incorporating interpretations about the dynamics of past movements into the static archaeological record presents significant challenges. Opportunities to explore the connections between movement, landscape, and the physical evidence of changing locations are rare. Since 2002, the GRSLE project has focused on high elevations (generally above 2,500 m) in the Greater Yellowstone Ecosystem, documenting regional-scale surface archaeology and seeking to better understand the movement and use of these mountainous areas by past human populations. Concurrently, a large-scale regional dataset on ungulate migration patterns has been assembled. To build a more comprehensive understanding of regional, multispecies movement patterns, we are investigating the relationships between archaeological surface distributions, contemporary ungulate migration corridors, biogeochemical signatures of regional faunal remains, and water isotope geochemistry. Initial results from this transdisciplinary research provide a robust foundation for both enhancing our understanding of past human-environment interactions and modeling future trends.

Barker, Kristin [122] see Burnett, Paul

Barnes, Monica [370] see Sandweiss, Dan

Barofsky, Sydney

[180] *More Than a Meal: Intimacy in Artistic Renditions of Animals in Central Jalisco and Greater West Mexico*
Representations of animals rendered in carefully molded clay and precious stone pervade the artistic record throughout Preclassic and early Classic period sites in central Jalisco, Colima, and beyond. While recent scholarship in this region focused on depictions of human experiences, much can now be said about the relationship between the animal imagery, and the artisan. This paper explores human interaction with these expertly crafted animals, particularly dogs and birds, illuminating a relationship extending beyond sustenance

or economic value. The ubiquity of animal imagery in the artistic record supports their more nuanced role in the region. While dogs were certainly part of the economy and a food source in West Mexico, this does not represent the full extent of their significance. Evidence from burials and artistic depictions showing interactions between humans and canines demonstrate a close bond between members of these species in both life and death. Likewise, a plethora of artistic renditions of birds pervades the archaeological record of this region that references their living counterparts. By representing these animals in great anatomical detail and crafting them from precious materials through careful processes of making, a deeper connection emerges between the artisan and the subject materialized in the artistic record.

Barragan, Manuel [48] see Diezbarroso, Alberto

Barrantes-Reynolds, Felipe (Universidad de Costa Rica), and Nancy Reyes-Sevilla (Universidad de Costa Rica)

[386] *Reconstrucción virtual de un segmento del conjunto ceremonial en Cruzmoqo, Sacsayhuaman*

El objetivo de esta presentación es aplicar herramientas de arquitectura y construcción a sitios arqueológicos, desarrollando metodologías rigurosas y no invasivas para la reconstrucción virtual de edificaciones antiguas a partir de ruinas. El lugar de estudio es Cruz Moqo, ubicado en el complejo arqueológico de Sacsayhuamán, es un sitio con terrazas y vestigios de edificaciones posiblemente ceremoniales de la cultura Killke, anterior a los Incas. Estas estructuras de piedra han sido alteradas desde hace muchos años debido a la extracción de material pétreo y huaquerismo, desmantelando casi por completo la estructura original. Nuestro proyecto se centra en la reconstrucción virtual de esta edificación ceremonial Killke. Partimos de un levantamiento fotogramétrico de los muros y cimentaciones originales, seguido por un registro detallado de las piedras esparcidas que pudieron formar parte de la estructura. Combinamos métodos analógicos con modelación digital y algoritmos avanzados para ensamblar virtualmente esta construcción.

Barreiro Castro, Ahalisharaeyli (University of West Florida), and Katie Miller Wolf

[194] *Applying Structural Vulnerability (SVP) to a Juvenile Archaeological Population from Copan, Honduras*

This poster reports on the application of the Structure Vulnerability Profile (SVP) from the UWF Biocultural Lab to a Mesoamerican bioarchaeological sample. The SVP is a method to add to traditional bioanthropological skeletal profiles but considering “biomarkers” that reflect embodied inequality. The juvenile archaeological sample from Late Classic Copan (AD 600–820) included 47 skeletal remains to examine health disruptions during precarious periods of growth and development. This study contributes to the examination of children’s health in the past by analyzing the SVP traits as a method to potentially identify markers of resilience, frailty and care in the past. *****This presentation will include images of human remains.**

Barrett, Brendan [234] see Carlson, Meredith

Barrientos, Tomas [159] see Canuto, Marcello

Barrios, Edy

[100] *Rincón del Jicaque: A Postclassic Fortress during the Ch’orti’ Conquest*

The ancient Ch’orti’ territory includes sectors in the modern republics of Guatemala, El Salvador, and Honduras. The Ch’orti’ are one of the ethnic groups found in the southeastern Maya periphery whose conquest in 1524 was slightly later than that of the populations of western and central Guatemala. Uprisings, subsequent to the conquest, led to the Spanish dispatching soldiers to the region in March 1530, against the community of Esquipulas and its chief Copan Q’alel. This leader tried to keep the rebellion alive by standing up to the invaders until his defeat when his fortress fell. In the 1940s, the fortress Rincón del Jicaque was named as the location of this loss. This impressive site is defended by a wall on its southernmost and narrowest side and is surrounded by deep canyons formed by the banks of the Lempa River. It lies near Santa Fe, Ocotepeque, Honduras, not far from Esquipulas, Guatemala. Its characteristics match the descriptions made by Fuentes y Guzmán about the final battle of the military conquest of the Ch’orti’ territory.

Barrios, Edy [100] see McNeil, Cameron

Barry, Jack (Trent University), Madelyn Strongitharm (Trent University), Moe Sat Wathan (Myanmar Archaeology Association), Gyles Iannone (Trent University), and Scott Macrae (University of Central Florida)

[61] *Preliminary Excavations at the Ba Ngo Residential Site, a Tenth-Century CE Suburb of the Hoa Lu Imperial Capital*

Recent excavations at the tenth-century Dai Co Viet imperial capital of Hoa Lu have uncovered evidence of a suburban community situated just outside the walled inner-city enclosures. The Ba Ngo residential site contains a range of quotidian artifacts indicative of everyday activities, as well as a raised earthen platform construction that incorporates internal drainage features similar to those employed in the traditional building methods that are still used in the frequently inundated Hoa Lu landscape to this day. Evidence of specialized activities, namely small-scale iron smelting, also support the idea that Ba Ngo was once a multifaceted suburban community during the Middle Classic (CE 900–1200) imperial occupation sequence.

Barton, Alison [297] see Black, Valda

Barton, Alison [316] see Moses, Victoria

Barton, C. Michael (Arizona State University), Sean Bergin (Arizona State University), Joan Bernabeu Auban (University of Valencia, Spain), Wendy Cegielski (DiggingDenver LLC), and Alfredo Cortell-Nicolau (University of Cambridge)

[114] *Making Machine Learning More Accessible and Useful in Archaeology: Insights from Chronology Building*

While machine learning is beginning to appear in the archaeological literature, most archaeologists remain unfamiliar with this potentially useful analytical tool kit. Over the past decade, we have been exploring machine learning as a robust way to help address a significant challenge of the archaeological record: chronologically unmixing palimpsest lithic surface collections. Machine learning provides a reproducible, quantitative, and defensible method for chronological unmixing. Our experience also has given us more general insights to share that we hope will encourage others to make use of this approach. We discuss out how machine learning is less of a novel and mysterious method than many colleagues believe; that in many cases machine learning can be used with computers already accessible to most archaeologists; best practices in applying machine learning also promote robust and reproducible science; while machine learning is not relevant for all analyses of archaeological data, it is very useful for many of the problems that archaeologists often wrestle with; and if the field of archaeology is to benefit from machine learning, it is imperative that archaeologists share their data in open, useable, and ethical ways. We use our work on chronological unmixing to exemplify these points.

Barton, Loukas [291] see Hale, Micah

Bartz, Emily (University of Florida), and Eleanora Reber (UNC, Wilmington)

[101] *Exploring Early Pottery Function, Foodways, and Land-Use Change in the Middle Savannah River Valley: Results of Organic Residue Analysis*

In this paper, we consider the functions of Late Archaic pottery vessels from the Middle Savannah River valley of Georgia and South Carolina to identify patterns of differential use between mobile and increasingly settled groups. To directly determine the function of these early cooking pots, organic residue analysis was carried out on a large assemblage of Stallings period vessels. Vessels were studied from both Early Stallings contexts—when groups exhibited mobile settlement patterns, moving seasonally along the Savannah River to exploit resource booms such as fall mast, deer, and spring fish spawns—and Classic Stallings contexts, which represent a period of increased sedentism as groups became more place-based. By comparing organic residue data from these contexts, we explore how shifts in settlement strategies influenced the selection and processing of food resources in pottery, shedding light on cultural dynamics and human-environment relations during this transitional period.

Barvick, Kathleen (University of Arizona)

[353] *Odd One Out: Resisting Symmetry in the Painted Designs of Salado Polychrome Pottery*

Salado polychromes, a suite of decorated ceramic types that became extremely popular across Arizona and

New Mexico in the late 1200s through the mid-1400s, display a wide variety of painted motifs in red, black, and white. Most vessels are laid out with repeating patterns, displaying rotational symmetry in two-fold, three-fold, four-fold, or other numbers of repetitions. However, the repetitions of the motifs are not always exact; very often, one of the repetitions has an “odd one out” element, deliberately contrasting with the other motifs and design elements. This kind of asymmetry is particularly common in depictions of serpents. Using a corpus of hundreds of Salado Polychrome vessels from multiple museum collections, I analyze the distribution of these “odd one out” elements in otherwise rotationally symmetric designs across the Southwest and over time. I use both traditional design analysis to examine how this deliberate breaking of the design symmetry fits with other elements of the painted designs, and how different communities of practice of potters across the Southwest in the Pueblo IV period deployed this aspect of symmetry/asymmetry in their Salado polychrome pottery.

Barzilai, Omry [99] see Belmaker, Miriam

Basafa, Hassan [308] see Lu, QinQin

Basanti, Dilpreet (Northwestern University)

[167] *Isotopic and NAA Investigations into Globalizing Social Communities in Ancient Aksum, Ethiopia AD 50–800*

This talk presents stable isotope and neutron activation analysis (NAA) results to examine the development of social and geo-local communities during the globalizing punctuations of ancient Aksum, Ethiopia. Aksum (AD 50–800) was the capital of a major polity well-known for its central role in the Indian Ocean trade. Aksum’s most notable material features are its monumental funerary stelae located in a central cemetery now called the Stelae Park. $\delta^{18}\text{O}$ isotopes from available human remains demonstrate minimal variation, perhaps indicating a shared water source for this community. In contrast, NAA results show greater variation in multiple components for grave good pottery at each tomb. Taken together, these data may suggest a geo-local community buried in the cemetery whose social networks expanded beyond these boundaries. While much material culture at Aksum appears to facilitate the development of larger abstracted social communities during this period of globalization, Stelae Park burial traditions instead value experiential and indexical material cultures that rooted communities back into the local. Stable Isotope and NAA reflect an output of these overlapping community spheres that help to demonstrate how death became a dimension of the local within the wider Aksumite negotiations with cosmopolitanism. *****This presentation will include images of human remains.**

Bataille, Clement [376] see Paris, Elizabeth

Batbayar, Tumurochir [115] see Ciolek-Torello, Richard

Batbayar, Tumurochir [122] see Ramirez, Estevan

Batista, Justin [179] see Hedlund, Jonathan

Batista Barbosa, Jordana [199] see Silva, Rosicler

Batres, Kimberly, Neil Duncan (University of Central Florida), Brigitte Kovacevich (University of Central Florida), and Michael Callaghan (University of Central Florida)

[65] *Residue Analysis of Ceramic Vessels from the Lowland Maya Site of Holtun, Guatemala*

Building on previous research, this poster presents new paleoethnobotanical findings from the examination of nine ceramic vessels/sherds from the lowland Maya site of Holtun, Guatemala, that span from the Preclassic through the Terminal Classic periods (800 BC–AD 900). This study expands on earlier work conducted on ceramic sherds associated with burial and cache offerings from Holtun. Each whole vessel and fragment were subjected to starch analysis, a method used to determine plant taxa on a microscopic level. The results gathered from this starch residue analysis builds on earlier evidence that indicates our ability to recover diverse plant remains from archaeological contexts and illuminate patterns of grave offering types, social class, and variety in ritual diet.

Bauer, Alexander [223] see Rose, Nicole

Baustian, Kathryn [75] see Garcia-Putnam, Alex

Baustian, Kathryn [113] see Harrod, Ryan

Bazarsky, Alexandra (University of San Diego), Tawny Tibbits, Marieka Brouwer Burg (University of Vermont), and Eleanor Harrison-Buck (University of New Hampshire)
[284] *Cutting Edge Insights: A Newly Analyzed Ancient Maya Obsidian Assemblage from the Mid-to-Lower Belize River Valley*

Obsidian was used by the ancient Maya to create tools, weapons, and symbols of status. Archaeologists have analyzed these objects to better understand ancient trade and production systems, as well as socioeconomic and ideological spheres. While obsidian and obsidian sources have been thoroughly examined in many parts of the Maya world, e.g., Honduras, Yucatán, Guatemalan Highlands, and parts of Belize, little has been analyzed in the mid-to-lower reaches of the Belize River Valley. To begin to fill this void, we introduce an obsidian assemblage from the Belize River East Archaeology (BREA) project. We report on the results of field-based X-ray fluorescence, used to assess obsidian geochemistry and provenience, as well as morphological analyses that have shed light on production and temporal change. In this paper, we describe our findings and develop inferences for understanding the ancient Maya obsidian economy in this segment of the Belize River Valley.

Beach, Isabel (Boston University), Zachary Dunseth (University of California, San Diego), and Wade Campbell

[103] *Dung Microremains as Archaeological Evidence of Pastoral Practices: Exploring Low-Impact Methodology to Understand Early Navajo Sheepherding in Northwest New Mexico*

The Spanish introduction of sheep to the US Southwest in 1598 CE and their embrace by non-colonized early Diné (Navajo) communities in northwest New Mexico represent an important Indigenous cultural transformation in the history of North America. Not only were Diné lifeways and social organization impacted in ways that are still visible in Navajo society today, but pastoralism physically reshaped the environment of the region. These pericolonial processes have been poorly understood due to the lack of suitable zooarchaeological materials at early Navajo sites. The Early Navajo Pastoral Landscape Project (ENPLP) investigates the potential for low-impact methodology melding experiential ethnoarchaeology, geospatial modeling, and an assortment of archaeological field and lab techniques to evaluate an array of questions regarding Navajo pastoral practices and their roles in Diné society throughout history. Here, a minimally invasive methodology was developed for identifying early Navajo sheepherding sites through the identification of calcitic dung spherulites in archaeological soil samples associated with likely corral/pen enclosures. While a dung spherulite-focused approach has been successfully employed at dozens of sites worldwide, the results of the ENPLP analyses suggest that this approach may not be reliable for the early Navajo context, perhaps due to environmental or vegetative factors.

Beach, Timothy (University of Texas, Austin), and Sheryl Luzzadder-Beach (University of Texas, Austin)

[109] *Wetland Field and Paleosol Geoarchaeology of the Three Rivers Region, Belize and Beyond*

The view of archaeology from Fred Valdez in the lineage of his advisor Gordon Willey at Harvard allowed for a big tent archaeology that included ecology and technology of past societies. Our work in the Three Rivers transboundary region has fit into that part of the science and humanity of archaeology. We have used the whole tool kit of geoarchaeology and environmental archaeology to explore ecology and technology through the doppelgänger of landesque capital and human impacts from geospatial to pedological to multiple proxies. One persistent theme has been the positive adaptations of wetland agroecosystems to climate and environmental change, and we have documented more of these systems—through mapping, excavating, and multiproxy laboratory analysis—in the Three Rivers than any other part of Central America. In contrast we have also documented numerous paleosols that in some cases imply maladaptation. Here we contrast these positive and negative adaptations in this region where Fred Valdez has collaborated with us in the wider purview of his decades of project direction and help with conceptualization.

Beach, Timothy [325] see Baldwin, J. Dennis
 Beach, Timothy [114] see Character, Leila
 Beach, Timothy [52] see Dunning, Nicholas
 Beach, Timothy [52] see Luzzadder-Beach, Sheryl
 Beach, Timothy [107] see Ploetz, Chris
 Beach, Timothy [109] see Smith, Byron

Beane, Keegan [112] see Ahlman, Todd

Beaty, Kristine [297] see Ward, Emily

Beauchemin, Patience, Kalina Kassadjikova (University of California, Santa Cruz), and Lars Fehren-Schmitz (UCSC)

[297] *aDNA Extracted from Textile Fibers from Los Molinas, Peru*

Little ancient DNA work has been done on archaeological textiles due to the difficulty of extracting sequenceable DNA from dyed materials in which the presence of various pigments often inhibit biochemical analyses. However, DNA extracted from textiles would add an additional line of evidence in regard to, for example, choices of raw materials, husbandry practices, and trade of domesticates. A preliminary sample of textile fibers from Los Molinas, Peru (0–400 CE) have shown promising results for DNA retrieval. In this study we extract DNA using a hair-targeting extraction protocol from textile fibers and use this information to determine the raw materials (cotton vs. wool), including, when possible, the specific species, and examine how these choices of raw materials vary over time and between contexts. Genetic results allow us to distinguish between the specific camelid species used for wool in instances when morphological evidence is insufficient or when species were cross-bred. The results we present show a pilot application of the continually improving paleogenetic methods and open the potential for further archaeologically and contextually informed analysis of textile fibers.

Bebber, Michelle (Kent State University)

[85] *Principles of Modern Artistic Design in Late Pleistocene Clovis Stone Biface Technology*

For nearly a century, scholars and avocationalists alike have been fascinated with Late Pleistocene North American Clovis lithic technology. Of interest here is that, although a magnitude of research has been devoted to understanding the performance characteristics of Clovis lithic technology, less scholarship has been devoted to evaluating the aesthetic characteristics of Clovis stone tools despite the fact that many scholars have commented—often quite passionately—on the aesthetic effect of Clovis bifaces. But what *precisely* is it about Clovis bifacial stone tools that stimulates such widespread and enthusiastic appreciation? Here, to address this question, established Principles of Art and Design—(1) Symmetry, (2) Composition/Balance, (3) Rhythm/Movement, (4) Proportion/Ratios, (5) Color/Material Choice, and (6) Craftsmanship/Skill—were used to describe the unique visual appeal of Clovis stone tools. This approach informs our modern aesthetic relationship with Clovis technology while also elucidating patterns of artistic expression embedded within Clovis cache bifaces.

Beck, Robin [50] see Rodning, Christopher

Becker, Rory (Eastern Oregon University)

[123] *Electrical Resistivity Tomography in Archaeological Applications*

Electrical Resistivity Tomography (ERT) produces 2D depth profiles similar to a single ground-penetrating radar (GPR) slice. While earth resistance is a technique commonly employed during broad area archaeological prospection surveys, the tomography method is generally utilized to model sediment depths or delineate subsurface archaeological features. Though the most common probe arrays for conducting resistivity tomography surveys are the inline arrangements such as Wenner and Schlumberger (and their variants), the pole-pole probe array is the preferred array for use with a GeoScan Research meters. The RM15 and RM85 units are common in archaeological prospection and so expanding their applicability to ERT surveys makes it a useful method for subsurface geophysical investigations in archaeological applications.

Bédard, L. Paul [174] see Vandeveld, Ségolène

Bedell, Jessica (Cal Poly Humboldt, Cultural Resources Facility), Barbara Klessig (Cal Poly Humboldt), and Nyah Hawkins (Cal Poly Humboldt)

[90] *Analysis of Pyramidal Loom Weights: Investigating Textile Practices from Excavations at Crnobuki Gradiste, Pelagonia, North Macedonia*

This poster presents research focusing on the pyramidal loom weights uncovered at Crnobuki Gradiste in the Pelagonia region of North Macedonia. Building on previous findings that suggest significant activity at the site, our study examines the loom weights' clay composition, temper, slip, and imprints to reveal both manufacturing techniques and other aspects of the artifacts. We investigate whether the materials were locally sourced or imported to explore the origins of the artifacts. Environmental context is provided through the analysis of soil samples for radiocarbon dating and botanical remains. Experimental archaeology was used to replicate manufacturing processes, offering deeper insights into the loom weights' functional roles. This poster illustrates how integrating material analysis, experimental methods, and environmental data enhances our understanding of ancient textile practices and their broader significance.

Bedell, Jessica [90] see Hawkins, Nyah

Bedell, Jessica [39] see Klessig, Barbara

Beekman, Christopher (University of Colorado, Denver), and Verence Yunuen Heredia Espinoza (El Colegio de Michoacán)

[180] *Residential Excavations at Los Guachimontones, Jalisco: Household Activities and Population Estimates*

Research on the Teuchitlan Culture of central Jalisco has prioritized the monumental architecture, with less consideration of household activities and practices. We recently initiated a long-term project to excavate a sample of households from the center to the periphery of Los Guachimontones. We excavated Group 39 in the upper Loma Alta sector of the settlement. Our goals were to better understand household activities, including craft production, household ritual, and any specialized use of space. We present here a description of the excavations and a summary of our findings. We compare some of our results to the previous excavations of the more centrally located residential groups La Joyita A and B at Los Guachimontones.

Beekman, Christopher [180] see García Ayala, Gabriela

Beekman, Christopher [180] see Heredia Espinoza, Verence

Begay, Richard [362] see Bellorado, Benjamin

Begg, Sean (University of Nevada, Reno), and Christopher Morgan (University of Nevada, Reno)

[190] *Tracking Changes in Mongolian Herding Activity and Settlement Patterns in Response to Climatic Events*

Mongolian hunter-gatherers underwent a widespread transition to pastoralism during the Late Bronze Age (3.4–2.3 ka). As early herders left little material trace, not much is known about their population distribution or land-use patterns, especially in climatic context. Late Bronze Age pastoralists would have been vulnerable to summer droughts and extreme winter weather events (*dzuds*). Modern pastoralists are subject to the same climatic pressures. As they move from place to place, fecal soil stains are left by livestock herds. These stains are visible on freely available Landsat imagery. In this project, we train a machine learning classifier to identify soil stains on the landscape via their spectral signature. We identify changes in the spatial patterning of these features year-to-year. Using stains as proxies, we assess how behaviors and settlement patterns change in response to climatic events. This poster reports the results of the analysis and how they may be useful as a model for interpreting the sparse material record left by Late Bronze Age herders.

Beggen, Ian (University of Michigan)

[382] *Reexamining Early Foraging Occupations of High-Altitude Plateaus*

In 2006, Aldenderfer reviewed evidence of human occupations of the world's high-altitude plateau regions (Ethiopia, Tibet, and the Andean Altiplano), noting the deleterious effects of living at high altitudes: hypoxia,

extreme cold stress, and low primary productivity of ecological systems. Aldenderfer argues that in these three high plateau regions with robust signatures of early human occupations, foragers did not exploit these areas until late in the Pleistocene or early in the Holocene because of the relative difficulty these environments would have presented to foraging peoples. In this paper, I update Aldenderfer's review of early human occupations of high-altitude plateaus across the world, providing new data concerning the earliest habitations of these regions. I arrive at new conclusions concerning the marginality of these locales, generally finding that biological and cultural adaptations to living at high-altitude were developing earlier than previously understood. Moreover, I argue for a reconceptualization of what it means for these regions to be called marginal—a conceptualization based on archaeological data that offers more credence to the idea that high-altitude plateaus can actually be preferred environments for foraging populations.

Beggen, Ian [386] see Brown, Matthew

Beglane, Fiona [65] see Calistri, Hannah

Begotka, Nicolas [111] see Gillreath-Brown, Andrew

Behrensmeyer, Anna [373] see Pobiner, Briana

Beier, Samantha [198] see Zimmermann, Mario

Belardi, Juan [88] see Gutierrez, Maria

Belcher, Megan

[58] *Swelling or Shrinking? Using Carbonization Experiments on Goosefoot (*Chenopodium berlandieri*) to Measure the Effects of Charring on Seed Size*

Charred seeds often present obstacles for paleoethnobotanists interpreting their data. Seed size continues to be an important variable in characterizing paleoethnobotanical assemblages, and the effects of charring and carbonization on ancient seeds is well studied for some species but not for others. It is important to understand these effects since during carbonization, seeds may or may not maintain enough of their qualitative morphology to be diagnostic. The morphological changes associated with carbonization may present in a variety of ways: seeds may or may not pop, swell, or distort, leading to an increase or reduction in diameter or testa thickness. Furthermore, to assess domestication status, seeds must be well preserved enough to observe seed diameter, the shape of the seed margin, and/or the texture and thickness of the testa. This paper focuses on one formerly domesticated crop from eastern North America, goosefoot (*Chenopodium berlandieri*). I will build on my previous research on experimentally charred goosefoot (Belcher et al. 2023) in an effort to understand the quantifiable effects of carbonization on goosefoot seed morphology and to help correct measurements of ancient specimens for these effects. Additionally, these results may be relevant to others studying small-seeded annual crops in the Americas and beyond.

Belinskiy, Boris [345] see Mullins, Tyler

Belisle, Veronique (Millsaps College), and Hubert Zuayer Quispe-Bustamante (Zuayer Consultores & Ejecutores S. A. C.)

[386] *Wari Soft Power in Middle Horizon Cusco: A Bottom-Up View*

Many scholars have suggested that Wari architecture outside the Ayacucho heartland was a sign of direct imperial administration. This view assumes deep political impact on local populations, with shifting allegiances, a profound reorganization of how groups interacted with one another, and changing values about what was desirable, prestigious, and powerful. Following this argument, many have proposed that the Cusco region, with its typical Wari architecture, saw significant changes in local politics upon Wari arrival. To verify hypotheses about Wari political power and impact in Cusco, this paper evaluates whether Wari presence altered local dynamics and shifted regional alliances, and examines how (and if) Wari colonists contributed to increasing social inequality in the region. We examine continuity and change in regional hierarchies, elite

displays of status, and feasting through time. While the evidence suggests that Wari hard power—military and economic—was minimal in the Cusco region outside the area immediately surrounding the Wari settlements, Wari appears to have enjoyed some level of soft power. However, instead of imposing changes or bringing novel ideas to Cusco, Wari colonists intensified political processes that had already developed locally prior to the Middle Horizon.

Belisle, Veronique [386] see Brown, Matthew

Belisle, Veronique [386] see Quispe-Bustamante, Hubert

Beller, Jeremy (University of Bergen), Karen van Niekerk (University of Bergen), Mostafa Fayek (University of Manitoba), Pieter-Jan Gräbe (Terra Search Geological Consultants), et al.
[284] *Hunter-Gatherer Mobility and Lithic Procurement in the Southern Cape: Results of Artefact Provenance from MSA Blombos Cave, South Africa*

Archaeological research in the southern Cape of South Africa continues to emphasize the region's crucial role in understanding the emergence of cultural modernity among early modern humans. However, certain aspects of subsistence behavior, particularly the strategies for procuring raw materials and the associated patterns of mobility, remain insufficiently explored. These are fundamental to the success of hunter-gatherer communities, influencing their adaptability and resilience in varying environments. The predominance of silcrete tools in the Middle Stone Age (100–85 ka BP) layers at Blombos Cave underscores the preference of this raw material for creating a variety of tools. This study explores the mobility patterns and lithic procurement strategies exhibited by the inhabitants of Blombos Cave, utilizing petro-geochemical analyses. The findings reveal consistencies to regional sources located over 25 km from the site, suggesting that these early modern humans were highly mobile, transporting raw materials over considerable distances. This movement reflects a deep understanding of the landscape and offers broad insights into the economic and social behaviors that underpinned their way of life. This research marks the first comprehensive study of silcrete materials from Blombos Cave, providing robust data on silcretes in the southern Cape and offering deeper insight into lithic characterization strategies.

Bello, Charles

[340] *Introduction to Session and Opening Remarks*

Introduction to the session on Collaborative and Community Archaeology, outlining the history of this decade-long SAA symposium.

Bello-Hernandez, Cynthia (Université De Montréal), and Katie Miller Wolf (University of West Florida)

[321] *Unraveling Ancient Maya Funerary Rituals: Investigating Rare Cremation Practices at the Site of Ucanal through Bioerosion Analysis*

The discovery of two cremation burials at the Maya site of Ucanal, Guatemala, in 2019 and 2022 is significant as this practice remains extremely rare during the Classic period (250–950 CE) in the Southern Maya Lowlands. One of the burials, Burial 20-1, was unusual in that it contained four individuals, exhibiting varying degrees of thermal exposure that had been deposited among construction fill of a royal pyramid and lacked a formal tomb, raising questions about the events that took place. The other burial, Burial 21-2, was an adult individual found within a ceramic urn. Advances in techniques for analyzing bone microstructure in archaeological contexts allow us to broaden our understanding of the sequence events surrounding and after death. This study examines evidence for bioerosion on these burned human remains in order to better understand if the bodies were buried prior to cremation or if the cremation was immediate. Histological analyses will be compared to images obtained using micro-CT scanning, a noninvasive method for analyzing human remains. This comparative research advances the potential for nondestructive sampling in the future and refines our understanding of cremation funerary practices in the Maya Lowlands. *****This presentation will include images of human remains.**

Bellorado, Benjamin (Arizona State Museum, University of Arizona), Eric Heller (University of Southern California), Noah Pleshet (University of New Brunswick), Richard Begay (Navajo Nation), and Octavius Seowtewa (Zuni Pueblo)

[362] *The Bears Ears Digital Cultural Heritage Initiative (BEDCHI): A Collaborative Project Bridging Ethnography, Archaeology, Stewardship, and Tribal Perspectives in Southeastern Utah*

The Bears Ears Digital Cultural Heritage Initiative (BEDCHI) is a collaborative project that brings together tribal representatives, federal land managers, museum professionals, archaeologists, ethnographers, and students to document important cultural sites in the Bears Ears National Monument. By focusing on the integration of new technologies and Indigenous perspectives about the importance of these places and the larger area, our team is striving to develop virtual-reality and augmented-reality experiences of select cultural sites that can serve the needs of descendant communities and other stakeholders. This presentation outlines two recent workshops in the BENM that introduced students to photogrammetry technologies and ethnographic interview techniques while working in partnership with representatives from the Navajo Nation and the Pueblo of Zuni. The products and process created during the workshops help educate the public about the tie's descendant communities maintain with the BENM landscape, help tribal peoples revitalize connections to the natural and cultural landscapes of their ancient homelands, assist federal land managers to preserve and protect the cultural landscapes of the BENM, and integrate students into an immersive and collaborative project that bridges ethnography, archaeology, museum studies, land management, and tribal interests in Southeastern Utah.

Bellot-Gurlet, Ludovic [378] see Queffelec, Alain

Belmaker, Miriam (University of Tulsa), Avishay Oz (Israel Antiquity Authority), Yoav Tzur (Israel Antiquity Authority), and Omry Barzilai (Haifa University)

[99] *The New Archaeological Park at the Early Pleistocene Site of 'Ubeidiya, Israel: An Example of Landscape Archaeology Preservation*

'Ubeidiya, Israel, is an early Pleistocene site with a remarkable history of 0.5 million years of human occupation and detailed climate and environmental changes record. Discovered in 1960, the site has been systematically excavated, with the most recent excavation in 2021–2022. However, a period of neglect left the site vulnerable to elements and vandalism, necessitating an immediate response and highlighting the need for a more comprehensive approach to site management. Efforts have been initiated to safeguard the site and make it accessible to the public through a robust network of collaborations involving governmental agencies, academia, NGOs, and local stakeholders, facilitated by national governmental funding. The successful inauguration of the first phase of the park in 2023, which garnered national and international acclaim, is a testament to these efforts. Further expansion of the park presents unique challenges in landscape archaeology preservation, particularly concerning conserving clay sediment cross-sections and the scarcity of tangible remains to capture visitors' imagination. We present our 10-year plan, which strongly emphasizes education, utilizing pathways, visualization, and interactive artifacts to enlighten visitors on human evolution and climate change, promote collaboration among the community, academia, and government, and bridge scientific knowledge with climate change-related initiatives.

Belmaker, Miriam [332] see Iovita, Radu

Belmaker, Miriam [233] see Schumacher, Emily

Belmaker, Miriam [190] see Williams, Nancy

Bemmann, Jan (Rheinische Friedrich-Wilhelms-Universität)

[323] *The Chinggisid Crisis (1330–1370) and Its Archaeological Evidence on the Mongolian Plateau*

What does the term “crisis” mean and what are archaeological indicators of a crisis in general? How can archaeology contribute to the ongoing debate about the Chinggisid crises (1330–1370)? The term crisis defies a precise definition and is often used as synonym for collapse, decline, disaster, dissolution, and fragility. In this analysis it is used as an umbrella term for serious threats to social order, be they natural or human.

Archaeological sources can certify armed conflicts, economic decline, legitimacy, disease, and natural disasters/climate change. The two fields of armed conflicts and legitimacy are dealt with in more detail. A prime

source is the long-standing and multifaceted research on the capital Karakorum. We see hastily abandoned rooms, burnt down landmark buildings, and a mass grave. The last Khan of the Yuan dynasty Toghun Temür (1320–1370) refurbished the huge pagoda of the Buddhist monastery in Karakorum and erected a monumental inscription stele on the back of a turtle in front of the monastery. Toghun Temür tried to tap the good fortune of Karakorum and the Orkhon Valley to enrich his legitimacy. But all the individual observations taken together cannot be solidified into a single event or woven into a story of decline.

Ben-Dor, Miki

[279] *The Allure of Proboscideans: Rethinking the Effect of Large Prey Attractiveness on Human Evolution*
The ubiquity of Proboscidean remains in early archaeological sites across the Old and New World underscores their significance in human prehistory. However, ethnography-based estimates of Proboscidean hunting returns have consistently undervalued their exceptional attractiveness as prey during the Paleolithic period. This study presents a critical reevaluation of three key parameters—encounter rates, pursuit costs, and target function—to demonstrate the unique appeal of Proboscideans to early human hunters. Crucially, the human body's limited ability to convert protein to energy (approximately 35% of energetic requirements) necessitates obtaining 65% of energy from non-protein sources; namely, fats and carbohydrates. Proboscideans represent a highly profitable and dependable source of large quantities of fat, which, as ethnographic evidence and interpretation of archaeozoological data corroborate, was humans' major prey choice criteria. We expound on the role of targeting fat in the extinctions and declines in populations of Proboscideans and other large prey. We then propose the need to energetically cope with that decline as a unifying driver of human evolution. This unifying hypothesis provides a novel framework for understanding human evolution and behavioral/cultural change, integrating dietary needs, hunting strategies, and environmental factors into a cohesive narrative of our species' development.

Benedict, John [275] see Boulanger, Matthew

Benfer, Adam (Faculty of Archaeology, Leiden University)

[315] *The Abundant Shade of Plaza Ceibas in Late Prehispanic Central America*
Living hundreds of years, ceiba trees (*Ceiba pentandra*) have long functioned as monuments to ancestral spirits, cosmological order, and chiefly authority among Indigenous populations throughout Central America. While these giant trees are often cosmologically charged and considered sacred or divine, there is substantial variety within Indigenous worldviews regarding ceibas. Among some cultures, the ceiba is the central axis of the world, providing the very infrastructure that upholds the cosmos. Sometimes, ceibas are perceived as gateways to the spiritual realm and psychopomps, guiding ancestral spirits to their supernatural home. In other instances, ceibas shelter powerful forest spirits (e.g., *ixtabay*) to be feared and respected for their roles in protecting the animals and plants of the forests. Often the tallest and most enduring trees in forests throughout Central America, ceibas are perceived as active supernatural forces that commemorate ancestral spirits, model the universe, and affect the well-being of humans and the rest of nature. Taking a multidisciplinary approach, this paper considers the chronology and ontological factors that might have led to the widespread practice of planting ceibas in central town plazas throughout some regions of Central America while other communities have actively avoided these trees.

Benites Segura, Jordi (UNMSM)

[172] *¿Montículos o Jircas? La importancia de su formación en el devenir de un paisaje: Una perspectiva desde Valle Alto de Chingas (sierra norcentral del Perú)*
El montículo, como un tipo de sitio que implica la formación de elevaciones, representa una categoría ampliamente utilizada en el estudio arqueológico andino-amazónico. Sin embargo, aunque es una herramienta valiosa, en la práctica tiende a unificar importantes variaciones formales de carácter artificial o semiartificial, limitando así, en gran medida, la comprensión de su significado dentro del paisaje. Por otro lado, la existencia de términos locales que se refieren a estas formaciones, como el caso de "Jirca" en nuestra área de investigación, actúan como conceptos que se aproximan de manera más adecuada a su significado cultural, simbólico y funcional, abarcando no solo la forma física, sino también las relaciones que la población mantiene con ellas. De acuerdo con esta premisa, la presente ponencia se ofrece como una propuesta exploratoria,

basada tanto en el estudio arqueológico, que incluye la caracterización formal y cronológica, de una conglomeración de 9 de estas formaciones en el Valle Alto de Chingas (sierra norcentral del Perú), como en el análisis etnográfico, que implica el reconocimiento de su importancia dentro del devenir del paisaje mediante la formación de nuevos significados, vínculos y recuerdos. *****Esta presentación incluirá imágenes de restos humanos.**

Bennett, Matthew [211] see Maryon, Sarah

Benson, Erin [102] see Betzenhauser, Alleen

Bentley, Nicholas (Texas A&M University)

[96] *Geoarchaeology and Site Formation Processes of the Lady Bug Site (8JE795): A Late Pleistocene Quarry Inundated by the Aucilla River, Florida*

The Lady Bug archaeological site (8JE795) lies on the edge of an inundated sinkhole submerged by the Aucilla River in northwest Florida. Within this mid-channel sinkhole are datable late Quaternary deposits as well as exposed chert bedrock used as a quarry before the site was inundated. During the summer of 2023 and 2024, excavations were conducted at this archaeological site to evaluate its geoarchaeological context and its potential to resolve long standing conflicts regarding the chronology of late Pleistocene and early Holocene material culture within the southeastern United States. These excavations and subsequent micromorphological and geochemical analyses of collected sediment samples reveal a complex suite of site formation processes throughout the late Quaternary. Moreover, at least two in situ cultural components were recognized, which aid in interpreting site availability and site use within the Aucilla River Basin.

Bentley, Nicholas [53] see Halligan, Jessi

Bentley, Nicholas [88] see Sauser, Macayla

Benzonelli, Agnese (University of Cambridge), Sebastian Rivas-Estrada (Corporación Universitaria Minuto de Dios, Bogotá, Colombia), Joaquín Otero Santillán (INGETEC, Bogotá, Colombia), Jasmine Vieri (University of Cambridge), and Marcos Martín-Torres (University of Cambridge)

[374] *Manufacture, Use, and Value of Gold among the Muisca (400 BC–AD 1600): The Case of Nueva Esperanza (Colombia)*

Nueva Esperanza (400 BCE–1600 CE) is widely recognized as one of the most important Muisca archaeological sites in Colombia and the most extensively excavated settlement. The site includes more than 3,400 burials, domestic and ritual contexts, with a comprehensive archaeological record that comprises ceramics, goldsmithing, lithics, and numerous spindle whorls. Its gold artifacts represent the largest collection of Muisca goldwork recovered from a well-documented archaeological context, making it a key focus of the REVERSEACTION project (www.reverseaction.org), which emphasizes the study of complex and luxury technologies in non-state societies. We present the analytical study of over 200 gold artifacts from the site, using optical microscopy, X-ray fluorescence (XRF), scanning electron microscopy (SEM-EDS), and inductively coupled plasma–mass spectrometry (LA-ICP-MS). Grounded in contextual associations and radiocarbon dating, the results provide a detailed insight into the sourcing, manufacture, use, and deposition of the gold objects. Through a formal assessment of the technical complexity and depositional contexts, we explore the movement of raw materials and objects, the coexistence of technological traditions, collective action, and the social value of gold. Integrating goldwork analysis with studies of associated individuals and contexts allows us to examine diachronic changes in raw materials, technology, craft organization, and social complexity.

Benzonelli, Agnese [49] see Martín-Torres, Marcos

Berdan, Frances (California State University)

[97] *Aztec Royal Prerogatives: The Importance of the Kings' Things*

This paper examines the role of material things in the lives and fortunes of Aztec kings in the latter years of the Triple Alliance empire. Royal things ranged from expansive palaces (very big things) to a wide array of

specific styles of clothing and body adornments. Exquisitely crafted and well-chosen things controlled by kings were laden with intense symbolic meanings and also carried messages of asymmetrical power, cemented relations with mortals and gods, and/or served practical purposes. They contributed substantively to the persona, lifestyle, power, prospects, and religious aura of every Aztec king. With this in mind, the importance of royal things is assessed in the context of their acquisition and disposition, including tribute, merchant consignments, symmetrical and asymmetrical gift-giving, marketplace exchanges, and distribution of specific things by the king to his people, allies, and even enemies.

Berenson, Sydney, and Olivia Navarro-Farr (College of Wooster)

[226] *Ethics and Stelae Repatriation in Guatemala: A Study of the Life History and a Proposed Restitution Plan for Stela 34 from El Perú-Waka'*

This work aspires to contribute to the ongoing discourse on cultural heritage and enhance practices surrounding the restitution of significant artifacts by focusing on Stela 34, a pivotal monument from El Perú-Waka' (henceforth Waka'). Attention is paid to its historical journey and the ethical implications of its acquisition and repatriation. Commissioned by Lady K'abel, the Kaanul queen who ruled at Waka' between 672 CE and 692 CE, the stela features numerous signatures and elaborately executed carvings in high relief. Looted in the 1960s and subsequently circulated within the art market, it was eventually acquired by the Cleveland Museum of Art. I employ a comprehensive methodology, utilizing epigraphic, historical, and archival sources, to discuss the artifact's complex life history. I also propose an advocacy plan to both address the irreversible harm resulting from its removal from the site while exploring ethical pathways for its repatriation. By integrating archaeological ethics and indigenous perspectives, I propose lessons from the past can inform better practices and enhanced ethical standards for repatriation in Guatemala.

Berg, Angela [75] see Stackelbeck, Kary

Berg-Hansen, Inger Marie [345] see Calvo Gómez, Jorge

Berganzo-Besga, Iban (University of Toronto), Felipe Lumbreras (Computer Vision Center, Autonomous University of Barcelona), and Hèctor Orengo (Catalan Institution for Research and Advanced Studies)

[341] *Computer Vision Best Practices in Computational Archaeology*

Landscape archaeology has progressed enormously in recent years thanks to the introduction of computer vision (CV) new technologies (Argyrou and Agapiou 2022). Besides, machine learning (ML) has demonstrated its application to other archaeological fields beyond site detection (Berganzo-Besga et al. 2021); for example, the identification of recovered data, such as geochemical analysis (Oonk and Spijker 2015) phytolith detection and classification (Berganzo-Besga et al. 2022), and the identification of ceramic fragments (Wright and Gattiglia 2018) among others. This lecture is intended to be a guide for the application of ML in archaeological research through a list of best practices. Both training and validation approaches will be presented. To do this, the most common problems encountered by archaeologists will be taken into account, such as the low-density of archaeological features to be detected and the small amount of training data available (Berganzo-Besga et al. 2023). Likewise, a series of methods will be shown to deal with the high number of false positives present in the algorithms. The main objective of this talk is to present a comprehensive guide on the design, application, and validation of CV methods, the most applied technology within the field of computational archaeology, for automated archaeological features identification.

Berganzo-Besga, Iban [67] see Kyle-Robinson, Lachlan

Berganzo-Besga, Iban [67] see Pugliese, Melanie

Berger, Elizabeth (University of California, Riverside), Jenna Dittmar (Edward Via College of Osteopathic Medicine-LA), and Ruilin Mao (Gansu Antique Archaeology Institute)

[79] *Overkill in Bronze Age Warfare: An Update on Violence at the Mogou Site, China*

Bioarchaeological investigations of skeletons from the Mogou cemetery in Gansu Province, China (1750–1100 BCE) have found 11.1% of adults suffered from violent cranial trauma (40/360). This is a very high incidence

for the region and time period. Injuries were most frequently observed on the skull and both males and females were affected. Blunt- and sharp-force injuries, as well as those inflicted by projectiles, were observed. Further, the injuries had clear lethal intent: 32/40 individuals suffered perimortem injuries; 22/40 had two or more cranial wounds, 15 of which had three or more wounds (one had at least 18 stab wounds to the cranium); and several had severe injuries to the face or disabling injuries to the postcrania. The number and severity of the injuries lead us to describe them as cases of “overkill.” This presentation will review the evidence for the type of violent interaction that may have led to these injuries: we hypothesize these individuals were victims of raids that were carried out not solely for the purpose of resource acquisition but as part of feuding or other intergroup conflict with an emotional component. We will also discuss the significance of this violence in its broader sociotechnical context. *****This presentation will include images of human remains.**

Bergin, Sean [114] see Barton, C. Michael

Bergmann, Christine (University of South Florida)

[157] *Pollen Analysis Exposes a Dynamic Environmental History at Pozuelo, Peru*

Pozuelo (PV.57-52) is located on the south coast of Peru in the lower Chíncha Valley, approximately 200 km south of Lima. Pozuelo is one of the earliest known U-shaped mound complexes on the south coast of Peru, dating to the Initial period (approximately 1200 BCE). The site also represents the earliest occupied region in the Chíncha Valley, as evidenced by radiocarbon dates and ceramic analysis. Although the environmental landscape of the valley is currently a barren desert bustling with agricultural fields, this was not always the case. Geostatigraphic and pollen analyses of soils and sediments, as well as previous research at Pozuelo, reveal an initial occupation on a wetland landscape which lacked agriculture, yet had evidence of specialized pottery and semi-sedentism. The unique origins of Pozuelo were only the beginning of a complex interplay between humans and their ever-changing environmental setting from initial occupation until final abandonment of the site.

Berikashvili, David (University of Georgia), Sean Field, and Ian Kuijt (University of Notre Dame)

[350] *The First Use of Lidar Technology on a Large-Scale Archaeological Site of Samshvilde (South Caucasus, Georgia)*

The multicultural Archaeological Complex of Samshvilde, in the South Caucasus (Southern Georgia), has been intensively excavated for the last decade, with a particular focus on the Citadel and Sioni Cathedral area. However, due to the large scale of the site, important questions, such as the layout of the main fortification system and the urban planning of the medieval city, remained unanswered. To answer these and other important issues of Medieval Samshvilde a lidar survey was conducted to scan the whole territory of the site in the Summer 2024. A DJI Matrice 350 RTK and attached Zenmuse L1 scanner were used to conduct a high-resolution, high-accuracy lidar survey of a 0.25 km² area. Despite a dense canopy, the use of this nondestructive technology produced impressive results, changing our understanding of the topography of the “Royal Area” and expanding the size of the city’s defensive walls. Thus, the presentation will show how modern technologies can contribute to the study of large scale archaeological sites.

Bernabeu Auban, Joan [114] see Barton, C. Michael

Bernard, Hayden (Indiana University, Bloomington), and Ryan Kennedy (Indiana University)

[87] *Reconstructing Fish Harvesting across Three Centuries in the Chesapeake Bay Area*

The relevant historical and documentary sources demonstrate the significance that seafood plays in the lives of people from the Chesapeake Bay area, both as an economic industry and as shaping culinary identity. The Chesapeake Bay Watershed is North America’s largest estuary, occupied by a wide variety of aquatic and non-aquatic fauna. Even with this significance, the archaeological literature on fish remains from the Chesapeake Bay is limited and tends to focus on earlier periods in history. In this poster, we use zooarchaeological data from fish remains collected from a variety of sites in Maryland and Virginia, most of which span the eighteenth, nineteenth, and early twentieth centuries, to explore this research gap. Through

this analysis we are able to reconstruct trends in fish supply, demonstrate the relevancy of historical sources, visualize the spatial distribution of fish remains, while also showing how archaeological fish are useful in connecting past human activities to the local estuarine ecology in both direct and indirect ways. In addition to exploring how fish were harvested in the past and how these activities connect to modern harvesting techniques, we also highlight potential avenues for future research in this region.

Bernard, Hayden [288] see Kennedy, Ryan

Bernard, Henri (Universidad Veracruzana), Mayra Manrique (Universidad Autónoma de Campeche, Mexico), Michelle Naya (Universidad Nacional Autónoma de México), and Jose Luis Ruvalcaba Sil

[378] *Following the Source of Greenstone in Mesoamerica: In the Search of Geological References on the Southeastern Border of the Olmec Region*

Mesoamericans attributed mystical and magical powers as well as healing properties to *Chalchihuitl*, or greenstone, which also symbolized social power, beauty, water, fertility, life, perfection, and sacredness. Historical sources and archaeological contexts confirm that Mesoamerican cultures valued specific colors and qualities in greenstones. Recently, elemental analyses have been carried out on greenstone collections at the Museum of Anthropology in Xalapa using nondestructive spectroscopic techniques, and the results bring greater clarity on the diversity of prehispanic greenstone materials used on the Gulf Coast of Mexico: the only known source of jadeite is the Motagua Valley and Alta Verapaz, Guatemala, while the source of Olmec serpentines is reported to be in Tehuiztingo in the current state of Puebla—yet we still lack good geologic comparisons to link the sources and the objects. In the search for exchange networks in Mesoamerica, an exploration to locate sources of extraction for greenstone materials was carried out in the state of Chiapas on the southeastern border of the Olmec region. These studies were carried out using the same techniques implemented for prehispanic objects, which provides for an adequate comparison and more accurate interpretation of the results.

Bernard, Henri [344] see Richter, Kim

Bernardini, Wesley [298] see Solometo, Julie

Bernier, Selena

[37] *Indigenizing Archaeology: Disassembling the Old Copper Culture*

The Old Copper Culture (OCC), as a general term, is an archaeological culture that has been studied for decades and still continues to be used as an identifier in American archaeology. Throughout these studies there seems to be something crucial missing: Indigenous perspectives. I argue that Indigenous Traditional Knowledge is necessary for the interpretation of copper materials in archaeological contexts, as it would create a stronger narrative to frame what is already known spatially and contextually in the archaeological literature. By examining Indigenous Traditional Knowledge of copper in the Lake Superior region, the priority of interpretation lies in Indigenous stories of land and water, which creates a more holistic archaeological narrative. In this paper, I utilize an Indigenous archaeological framework to explore the strengths and weaknesses of OCC literature and to provide a richer and more culturally specific story of Indigenous presence and the deeper meanings of copper.

Bernstein, Isabella

[237] *These Objects Have Seen Death: Critiquing American Archaeological Excavation Practices in Martial Law Philippines*

Philippine archaeology has largely been shaped by colonial interaction, particularly by American missionaries, military members, and scholars. This imperial gaze, despite the Philippines gaining independence in 1946, has created a legacy of artifact extractivism and human objectification. During the Martial Law period (1972-1986) enacted by Ferdinand Marcos, American-led archaeological projects occurred in tandem with ongoing dictatorship and extrajudicial killings that took place throughout the archipelago. In this paper, I will discuss how objects found in regions with mass graves and torture sites during the Marcos period were continually

reconstituted by their environment, spatially and temporally, both by archaeologists and the Philippine Constabulary. This anti-colonial critique of archaeological ethics aims to host a conversation about object biography, personhood, agency, and placemaking.

Berquist, Stephen [376] see Alaica, Aleksa

Berryman, Judy [380] see Walker, William

Bertin, Emily

[323] *Identifying Elite Maya Residential Spaces: Distribution of Polychrome Potter across the Maya City of El-Peru Waka'*

Rediscovered in the 1960s by petroleum workers in modern day Petén, Guatemala, the ancestral Maya city of El Peru-Waka' has been the subject of archaeological investigation since 2003. Located at the crossroads of two major trade routes and with a dynasty fully engaged in the geopolitics of Classic period, Waka' is one of the longest surviving Maya cities with an occupation of nearly a millennium (ca. 100–1000 CE). Building on over a decade of ceramic and settlement studies by the Waka' Archaeological Project (PAW), this poster compares the spatial distribution of polychrome and non-polychrome pottery from over 300 residential test excavations across much of the city's urban core and immediate hinterlands. The spatial association of higher densities of polychrome and bichrome pottery with larger-scale residential architecture compared to lower-scale household architectural residences reinforces its distribution as a potential marker of Classic Maya class differences and inequality. The present analysis provides an additional indicator of household inequality across the Waka' urban landscape.

Berube, Eloi (Université de Montréal)

[290] *The Use of Plants at Río Verde: Macrobotanical and Microbotanical Data*

This paper discusses the use of plants at Río Verde through the lens of paleoethnobotany. I will present the results of the macrobotanical analysis from the two field seasons (2022 and 2024) and the preliminary results of the microbotanical analysis of the samples collected in 2022. By combining macrobotanical remains (mainly seeds), phytoliths, and starch grains, this paper allows to examine the relationship between the ancient inhabitants of Río Verde and their environment. This paper will mainly address foodways, plant practices, and explore the way botanical remains might have been discarded during the Classic-Postclassic transition.

Bethard, Jonathan [215] see Zejdlik, Katie

Bettinger, Robert (University of California, Davis)

[126] *Are Mountains Marginal?*

Mountain environments, the treeless parts above 10,000 ft specifically, are traditionally viewed as less productive, more difficult to access, and more physiologically challenging, and for those reasons, marginal to their subalpine counterparts. The ideal free distribution (IFD) of Fretwell and Lucas (1969) provides a means of testing this “marginal mountain” hypothesis in eastern California, casting the White Mountains alpine zone against subalpine environments of Owens Valley. IFD holds that patches vary in initial user fitness, user fitness declining as the number of patch users increases. Patches conferring highest fitness are used first, then by successively more users, eventually prompting use of the patch conferring the next highest initial user fitness. Thus, use of marginal patches lags use of patches conferring higher initial user fitness. The White Mountains alpine zone is not marginal in this sense. Time-sensitive projectile point distributions show no alpine lag, indeed near contemporaneous initial use and trajectories of overall change in the White Mountain alpine and Owens Valley subalpine zones, likely reflecting the seasonal abundance of Bighorn sheep in the alpine zone. Alpine and subalpine both show near-identical lags in residential relative to overall use, both reflecting the regional shift to residentially staged hunting.

Bettis, Art [183] see Joyce, Judith

Betts, Chelsea (University of Connecticut), Leore Grosman (Institute of Archaeology), and Natalie Munro (University of Connecticut)

[65] *A Zooarchaeological Approach to Feature Formation Histories at the Natufian Burial Cave of Hilazon Tachtit, Israel (12,000 cal BP)*

Given its position on the doorstep of the Neolithic, the Natufian period was marked by significant socioeconomic change. A gradual shift to sedentism and ultimately, agriculture was accompanied by the increasing visibility of new spiritual practices. Hilazon Tachtit, a 12,000-year-old burial site in northern Israel, is home to the earliest shaman burial and funerary feast. The cave also includes the remains of 28 individuals interred in a variety of contexts. Some of these contexts are of clear anthropogenic origin, but others have more complex formation histories involving both anthropogenic and natural processes. Because the site is located inside a cave, it also served as a shelter for other species such as birds and carnivores that potentially impacted site deposits. For this paper, we carefully selected and applied a suite of faunal analyses to address the relative contribution of natural and cultural taphonomic agents to a variety of spatial contexts. Delving further into their formation histories will enable further investigation of each feature's ritual significance.

Betzenhauser, Alleen (Illinois State Archaeological Survey), and Erin Benson (Illinois State Archaeological Survey)

[102] *From Tragedy to Triumph of the Commoners*

Archaeologists tend to focus on the most visible sites and the elites and leaders who directed their construction, at the expense of understanding the lived experiences of the vast majority who built and supported them. While much of Tim Pauketat's research centers on Cahokia, North America's first and largest Indigenous city north of Mexico, he devoted a significant part of his career to researching those sites and people who left less visible marks on its history. Tim's investigations in the Richland Complex and prodigious use of datasets derived from compliance archaeology broadened perspectives on what it meant to be Cahokian and the significant roles "commoners" played in founding and sustaining the city. Here we reflect on Tim's influence on our explorations into Cahokian farmsteads and farming communities in the countryside and urban neighborhoods at Cahokia and East St. Louis. The results of this research have contributed to broader discussions of urbanization, community, foodways, and inequality far beyond Illinois.

Bevan, Andrew, Xiuzhen Li (UCL Institute of Archaeology; School of Archaeology, University of Oxford), and Michael Charlton (UCL Institute of Archaeology)

[392] *A Collaborative Research Initiative on Iron Use in the First Emperor's Mausoleum and Qin Dynasty*

A collaboration between the Terracotta Army Museum and UCL has for many years been investigating the crafting methods and logistical organization behind the making of the Terracotta Army and the First Emperor's mausoleum. Bronze, clay, wood and other resources were all deployed on a massive scale and their monumental use at this funerary site provides important wider clues about everyday marshaling of resources by the Qin Empire. It can also be compared with other systematic new industrial crafting methods that were emerging in other near-contemporary, large-scale empires across Asia and Europe during the first millennium BCE. While we have previously focused on bronze and terracotta, two new recent agendas consider wood and iron. This paper will introduce the second of these: a project called "Qin Imperial Iron, Tomb M1 and the First Emperor's Mausoleum: Character, Context and Consequence." In contrast to bronze weapons, the hundreds of iron tools and small number of weapons found within the mausoleum have received far less attention so far, and in particular, new excavations at ancillary tomb M1 and the East Gate have yielded insightful finds.

Bevan, Andrew [392] see Charlton, Michael

Bevan, Andrew [392] see Li, Xiuzhen

Bevan, Andrew [392] see Yang, Ying

Bevis, Betsy [225] see Ljung, Emma

Bey, George (Millsaps College), Tomás Gallareta Negrón (INAH Yucatán), and Leslie Cecil (Stephen F. Austin State University)

[171] *Landa's Auto de fe and the Destruction of the "Idols" of Maní: Petrographic and Chemical Analysis of Incensarios from Maní, Mexico*

In 2015, an archaeological rescue program was carried out in Maní, Yucatán, related to improvements in the main square with the aim of designating Maní as a "magical town." The excavations produced numerous fragments of the "idols" destroyed during the so-called *auto de fe* organized by Diego de Landa in Maní (1562) punishing the Maya population for continued "pagan" practices. This presentation presents details of this uniquely important historic event and provides an analysis for the first time of the archaeological evidence of what happened at Maní. Landa gathered the idols from the entire region (Yucatán); in fact, Scholes and Adams noted (1938) that he gathered both local idols and those from as far away as the Coba region. The *incensarios* identified in the excavations are of the Late Postclassic and contact period type (AD 1000–1500) classified at Chen Mul modeled. Forty Chen Mul fragments were analyzed by INAA and petrographic analysis, and the different chemical groups are compared to similar Postclassic pottery and clays from Mayapan, Santa Rita Corozal, Laguna de On, and the Petén Lakes region to determine from where the destroyed *incensarios* came. The petrographic analysis will help test the historical hypothesis regarding the various *incensarios* collected.

Bhattacharyya, Tiyas (University of Oregon)

[61] *Fauna from Funan: Investigating Human-Animal Interactions at Angkor Borei, Cambodia (500 BCE–500 CE)*

In this paper, I will present preliminary results of a study where I analyzed select zooarchaeological remains from the Early Historic / Pre-Angkorian site of Angkor Borei, Cambodia, excavated as part of the Lower Mekong Archaeological Project (LOMAP). Angkor Borei is one of Southeast Asia's earliest urban centers, located in the Mekong Delta region of southern Cambodia. It was also a prominent trading center from the late first millennium BCE to the first millennium CE. Initial identification by previous scholars found both wild and domesticated fauna along with all major local taxa (e.g., water buffalo, pigs, cattle, chickens, crocodiles, various species of deer, rice rats, fresh and brackish water fish species, elephants, etc.). By examining trends in animal taxa and comparing these shifts between select contexts at Angkor Borei (e.g., burial, residential, industrial), I will discuss proposed shifts in human-animal-environment interactions and how these may coincide with diachronic changes in sociopolitical organization, the subsistence economy, and religious practices.

Biagetti, Stefano

[103] *The Long Road: The Role and the Limits of Ethnoarchaeology in the Study of Pastoralism*

In the mid-twentieth century, pastoralism was largely misunderstood, particularly within the context of land degradation. Major international bodies placed the blame for widespread desertification and environmental damage in drylands on pastoral practices. This narrative dominated policy and research in the 1950s and 1960s, fostering misconceptions about the nature of pastoral livelihoods. However, with the emergence of new rangeland ecology, scholars began to recognize the unique characteristics of pastoralism, such as its opportunism, flexibility, and adaptability to highly variable environments. These insights have reshaped the understanding of pastoral systems, framing them as not only resilient but also inherently sustainable strategies for managing drylands. The role of archaeology and ethnoarchaeology has been pivotal in dismantling myths and stereotypes about pastoralism. Today, we can study ancient herding communities like never before, thanks to new techniques and technologies. In developing new approaches to early pastoralism, the ethnographic present has often provided crucial information. This presentation will explore the evolution of thought around pastoralism, from its early vilification to its recognition as a "green" practice, emphasizing the importance of integrating traditional knowledge with modern ecological and archaeological insights.

Bianchi, Rachele

[80] *Linkages between Copper and Bronze Technological Styles and Pastoral Movement in Late Chalcolithic and Early Bronze Age Central Asia*

The socioeconomic impact of pastoralism, particularly sheep grazing, is one of the more thoroughly investigated themes in contemporary ethnohistoric and archaeological landscape studies for Central Asia, particularly in relation to practices of vertical and horizontal transhumance. However, the cultural implications of pastoralist

practices in relation to metalworking techniques of the Late Chalcolithic and Early Bronze Age of Central Asia remain relatively understudied. In this paper I discuss geographical patterns in technological style, shaped by compositional and metallographic data collected from copper and bronze artifacts from different cultural contexts across Central Asia, to delineate the “metalscape” of the Late Chalcolithic and Early Bronze Age. I compare these patterns to possible seasonal patterns of pasture availability I reconstructed using modern precipitation, temperature, hydrology, and vegetation data, due to the limits of the extant published paleoecological data, to propose that pastoralists’ patterns of horizontal and vertical transhumance would have been instrumental in establishing and maintaining interactions across the steppes and mountain ranges of Central Asia, including technological knowledge and practices for metalworking.

Biehl, Peter (University of California, Santa Cruz)

[99] *Education and Training in the Archaeology of Climate Change*

As a matter of fundamental importance to the archaeology (and heritage) of climate change, climate-change studies should become a common feature of archaeology (within anthropological and classical archaeology) curricula in both undergraduate and graduate studies. Teaching and training in the archaeology of climate change has not yet been the focus of recent statements of professional organizations such as the 2021 EAA Kiel Statement nor the 2022 SAA Statement on Climate Change and Cultural Heritage and is also missing from its otherwise excellent resources on Teaching of Archaeology. This paper scrutinizes resources of other professional organizations as well as curricula in anthropology programs across the country with a particular focus on graduate programs and will present best practices (including from other countries). The paper argues that in order to train the next generation of archaeologists and heritage managers we need to rethink our curricula to provide the students both general knowledge of the archaeology of climate change and specialized skills for the field and lab. This seems especially important in times of shrinking anthropology graduate programs both in time to degree and cohort sizes but an increasing demand for our contributions to research, advocacy, and policymaking.

Bielenberg, Henry [65] see Stauffer, Kaeleen

Biiri, Bwenaua [173] see Matisoo-Smith, Lisa

Bini Ahmed, Khalfan [322] see Randolph, Clare

Binkowski, Griffon [378] see Kovacevich, Brigitte

Birch, Jennifer (University of Georgia), Christian Gates St-Pierre (Université de Montréal), Seungyeon Hong (University of Georgia), Brita Lorentzen (University of Georgia), and Sturt Manning (Cornell University)

[50] *Evaluating Sixteenth-Century Population Movement in the St. Lawrence River Valley: A Radiocarbon- and Huron-Wendat-Based Perspective*

Between Cartier journeying down the St. Lawrence Valley in 1535 and Champlain traveling the same route in 1604, the Iroquoian populations inhabiting those shores relocated elsewhere. The apparent disappearance of the St. Lawrence Iroquoians is both a touchstone in the Canadian historical imaginary and a very real question related to the identities and histories of contemporary Indigenous peoples. In this paper, we discuss the preliminary findings of the current phase of the Dating Iroquoia project, a collaborative effort between the Huron-Wendat Nation and academic archaeologists at US and Canadian institutions. We highlight the cutting-edge methods being employed by the project to resolve issues with multiple intercepts in the radiocarbon calibration curve during the sixteenth century, present preliminary findings, and develop interpretations of dates and data from a Huron-Wendat perspective. In doing so, we hope to provide a model for larger-scale efforts toward building better chronology for fifteenth- to eighteenth-century eastern North America through careful sample selection and identification, radiocarbon dating, and collaborative research agendas.

Birch, Jennifer [50] see Brannan, Stefan

Bird, Darcy [385] see Gauthier, Nicolas

Bird, Douglas [117] see Chen, Jennifer

Birkmann, Joseph (UNM)

[98] *Rethinking Agrodiversity in the Early Agricultural Period Southwest: Upland Cultivation of Maize and Squash at McEuen Cave, Safford, AZ*

Despite the wide variety of environmental settings and sites attributable to the Early Agricultural period (EAP) in the Southwest, the current narrative regarding the arrival of agricultural production as an economic strategy remains primarily focused on the alluvial corridors of large rivers like the Santa Cruz in Tucson, AZ. In 1997 and 2001 Bruce Huckell, Lisa Huckell, and M. Steven Shackley conducted a limited program of test excavation at McEuen Cave, a large rockshelter located within the Fishhooks Wilderness Area near Fort Thomas, AZ, deep within the uplands of the Mogollon Rim. The shelter contains a rich record of perishable and nonperishable artifacts and an impressive assemblage of cultigens, including maize and squash. The results of these investigations and subsequent dating efforts by Birkmann have yet to be widely available. In this paper, we provide new chronometric data on the EAP and Ceramic period occupation of McEuen cave, discuss the evidence for upland cultivation of maize and squash within the broader Fishhooks Wilderness Area, and discuss the implications of this site for our understanding of the arrival of maize and squash cultivation during the late-Middle Archaic in the southern Southwest.

Birkmann, Joseph [190] see Murphy, Beau

Bischoff, Robert (Arizona State University)

[228] *Analyzing Material Culture Correlations with Multilayer Networks in Southwestern Archaeology*

Multilayer networks consist of multiple layers of connections between the same set of nodes. Rarely applied in archaeology, this framework provides an opportunity to analyze different types of material culture in one analysis. This poster describes the results of a multilayer network analysis in the US Southwest consisting of typed projectile points, typed ceramics, sourced ceramics, sourced obsidian, and architectural features. The dataset consists of nearly 600 archaeological sites dating between AD 1100 and AD 1500. The sites come from Tonto Basin, Zuni, Hopi, Kayenta, and Flagstaff regions including sites in between. The results demonstrate how communities can be detected through the use of multiple types of material culture and how different types of material culture networks are correlated.

Bischoff, Robert [223] see Ferguson, Jeffrey

Bishop, Jack (Harvard University)

[155] *Materiality in Video Games: Gaming as a Lens for Public Engagement with the Archaeological Gaze*

Video games have become the largest entertainment industry in the world, outstripping film and music combined in revenue. As a medium that requires direct participation by the player, it can be a powerful tool for public engagement. The use of the archaeological gaze can be found in titles from major publishers such as Halo and Mass Effect and games from independent developers such as Outer Wilds. Here, the term “archaeological gaze” refers to narrative and gameplay elements that reflect or involve the approach to material investigation that is the foundation of archaeology rather than to games that are simply set among ancient ruins such as *Tomb Raider* and *Uncharted*. This paper analyzes the common ways in which video games use the archaeological gaze in their active engagement with players who may have little to no exposure to archaeology, particularly as a discipline of study. The findings of this analysis can be used in the creation of interactive exhibits and other public outreach projects to improve engagement with a variety of audiences, especially younger ones.

Bishop, Jessica

[379] *Where Is the Horse and the Rider? Considering the Militia Horses of the Black Hawk War through a Zooarchaeological Lens*

Human-animal interactions in conflict have resulted in the injuries and deaths of millions of livestock, pets,

wild animals, and military animals, leading to human subsistence issues, long-term environmental impacts, and animal welfare concerns. This work focuses on human-animal interactions during the Battle of Kellogg's Grove during the Black Hawk War of 1832. The war, while typically viewed as a regional conflict, engulfed numerous Native groups along the frontier of the expanding nation. A militia was raised from the local settlers, many of whom brought their personal horses to war. During the battle, a group of militia horses were killed while isolated from their riders, thus removing a mobile unit from the war. Despite its importance, the exact number and final location of the militia horses killed remains unknown. Identifying the remains and establishing osteobiographies of these animals could reveal details of the previous relationships between the militia and their horses as civilians, while also providing missing context to the horses' later deaths in battle. This example highlights the significance of zooarchaeological research to the study of conflicts and demonstrates how expanding the repository of historical, zooarchaeological specimens with accompanying analyses can enhance our understanding of human-animal entanglements in wartime periods.

Bishop, Jessica [379] see Hamdan, Emadeldeen

Bishop, Katelyn (University of Illinois, Urbana-Champaign), and Jenny Davis (University of Illinois, Urbana-Champaign)

[373] *Decolonizing North American Zooarchaeology*

Efforts to decolonize archaeology have amplified in the last few decades, as they have in other disciplines. By and large, these efforts have yet to extend robustly to zooarchaeology. In many ways, however, zooarchaeology is well-positioned to make unique contributions to the decolonial program. This is especially true, and pressing, for North American zooarchaeology, but broadly applicable across other parts of the globe. Drawing on Indigenous studies, animal studies, and models of Indigenous science, this paper discusses some preliminary ideas concerning how zooarchaeologists working in North America might recognize the ways that our work is inherently structured—and limited—by its Western origins and the colonial history of its parent discipline, as well as the possibilities and benefits of addressing those legacies and incorporating other epistemological and methodological frameworks, thereby contributing to the overall goal of decolonizing archaeology.

Bishop, Katelyn [373] see Garcia, Isabella

Black, Casey

[300] *Mammoths Can't be Carnivores: Assessing the Relationship between Archaeological Sites and Mammoth $\delta^{15}\text{N}$ Values*

The use of stable isotope analysis allows for archaeologists to better understand diet in prehistory and the relationship between humans and animals. Nitrogen isotopes are frequently used to indicate an organism's trophic level, since $\delta^{15}\text{N}$ values generally increase as trophic levels increase. Despite being herbivores, mammoths possess uniquely high $\delta^{15}\text{N}$ values that lack a definitive cause among geologists and paleontologists. The analysis of variance between $\delta^{15}\text{N}$ values in six different mammoth sites located in Wyoming as well as one modern elephant were utilized to determine if there is a relationship between cultural modification and $\delta^{15}\text{N}$ values. These results were then applied to three major explanations for the trend of high $\delta^{15}\text{N}$ values in proboscideans, which include the environment, nursing/weaning, and starvation. This research seeks to understand whether patterns of cultural modification and $\delta^{15}\text{N}$ values are apparent, which could allow for a greater understanding of why proboscideans typically yield high $\delta^{15}\text{N}$ values. If strong trends between archaeological sites and $\delta^{15}\text{N}$ values are apparent, isotope analysis could be utilized as a proxy for determining the likelihood of human involvement in mammoth kill and butcher sites, which would benefit the study of PaleoIndigenous archaeology significantly.

Black, Valda, Alison Barton (Harvard University), Kalina Kassadjikova (University of California, Santa Cruz), David Reich (Harvard University), and Lars Fehren-Schmitz (UCSC)

[297] *Differences in Kinship Structure between Chanka Moieties: An Ancient DNA Study*

The Chanka were a cultural group that lived in Andahuaylas, Peru, during the Late Intermediate period (LIP; AD

1000–1400). At the beginning of the LIP, the Chanka moved into smaller communities at higher elevations and utilized an agropastoral lifestyle. Similar to other groups throughout the Andes during the LIP, the Chanka experienced high degrees of violence and built fortifications around their communities. While these behaviors indicate the Chanka communities may have been violent toward each other, researchers also say that the Chanka held alliances with marriage between the moieties of their multilevel kinship system. This study looks at the Chanka sites of Cachi and Ranracancha, the upper and lower moieties of the Chanka kinship system, to observe whether there is evidence of marriage between them. In addition, we look to see if there are similar patterns of kinship within and between burial structures and sites. Using ancient DNA, kinship patterns were observed using the degree of relatedness and runs of homozygosity in the Relationship Estimation for Ancient DNA (READ) and Kinship INference (KIN) programs. Results show no evidence of intermarriage between Cachi and Ranracancha, and instead identified significant kinship structure differences between the sites.

Blackwood, Emily

[226] *To Post or Not to Post: That Is the Ethical Question*

As advances in and incorporation of new technologies in archaeological research and discourse becomes the new norm, archaeologists have the opportunity to revisit the ethical parameters involved with such implementations. When and how and from whom is permission sought? Who has the right to make these decisions? Existing guidelines for creating and using digitally rendered objects are often vague, overlooking issues of rights and ownership. Prioritizing the creation of 3D models over human agency undermines efforts to build community and promote equitable collaborations. With growing access to and affordability of technology it is essential to address concerns about digital colonialism, data management, public communication, etc., before digital methodologies become commonplace within the field.

Blair, Elliot [240] see Tranberg, Austin

Blakeslee, Donald (Wichita State University)

[121] *Quiviran Connections: Glimpses of the Ancestral Wichita Macroeconomy*

Various scholars have estimated the sixteenth-century population of Quivira at up to 200,000 people, and we have clear evidence that the population of one town approached 20,000 residents. This raises the question of why so many people concentrated in one part of the Great Plains. Historic documents suggest that exports from Quivira reached both the Atlantic and Pacific coasts and deep into what is now Mexico. Other than tobacco pipes, however, Quiviran exports did not preserve in archaeological contexts. Imports, on the other hand, included ceramics, chipped stone, and minerals that originated from places from the coastal plain of Texas to North Dakota, and from the Mississippi valley to the west coast of Mexico.

Blakey, Janet [364] see Johannesson, Erik

Blasco, Jimena, Eugenia Villarmarzo, and Elena Saccone

[185] *From Shadows to Spotlight: Reassessing the Vital Yet Undervalued Roles of Women in the Care of the Uruguayan Archaeological Heritage*

Since the first historicizations of archaeology in Uruguay, the “pioneers” or “fathers of national archaeology” have been at the center of the story. Without detracting from their merit, their work was sustained and supported by the work of many women who, in addition to carrying out fieldwork, were especially responsible for the organization, conservation, and socialization of the collections. They played a key role in the creation of museums and guarantors of their permanence and management. These tasks correspond to the reproductive and community management roles defined in order to analyze the sexual division of labor from a gender perspective. In general, these are tasks with less social recognition, made invisible and reproduced within academic and professional activity. However, it is thanks to this work that it is now possible to access these collections. In our presentation we will reflect on the analysis of the dynamics and relationships produced around the formation and management of two public collections in Uruguay: Maeso and Oliveras. At the same time, we will analyze the correlation between this invisibility and some of the challenges that the conservation and socialization of cultural assets of archaeological interest are currently facing in our country.

Blaser, Andrea (University of Michigan Museum of Anthropological Archaeology UMMAA)**[293]** *Museum Collections and Metadata: Creating a Plural Approach within a Collections Management System*

The UM Museum of Anthropological Archaeology (UMMAA) is now over 100 years old and curates a materially diverse, global collection. A research-centered mission, as well as an emphasis on processual archaeology, has deeply influenced UMMAA's collections and associated records. This legacy data reflects norms of the times, curatorial priorities, and a commitment to notions of universality. Understanding both the harm and misinformation caused by forcing Indigenous material culture into rigid, hierarchical structures, my data management explores ways that we can bring decolonization efforts into UMMAA's legacy data. Aided by the opportunities of a newly implemented Collections Management System, as well as institutional drive for an online collections search tool, I am developing ways the museum's metadata and interface structures incorporate and, in some cases, prioritize Indigenous ways of knowing their own material culture. Through ongoing collaborations with Native American communities, Filipino culture bearers, and museology peers, UMMAA's collections data is changing to reflect the plurality of the material the museum stewards.

Blecha, Erika [128] see Kidwell, Jasmine

Blecha, Erika [337] see Rosen, Arlene

Blédou, Brou Ehivet Senen [229] see Kienon-Kabore, Timpoko Hélène

Blegen, Nick [69] see Munene, James

Bleuze, Michele (California State University, Los Angeles)**[104]** *Theoretical Considerations in Maya Subterranean Bioarchaeology*

Subterranean bioarchaeology is a contextual construct that emerged from subterranean archaeological investigations, but its theoretical underpinnings have not been defined. The subfield is concerned with human skeletal remains recovered from funerary and non-funerary contexts from caves, rockshelters, cenotes, chultuns, sascaberás, and a host of natural and artificial subterranean chambers. At the heart of subterranean bioarchaeology is the recognition that the type of deposition must be determined on a deposit-by-deposit basis given the diverse and growing number of types of subterranean spaces. As such, the subfield heavily draws on archaeoethnology. One of the goals of subterranean bioarchaeology is to reconstruct the structure, organization, and ideology of past societies from the systematic analyses of human remains within their depositional context, which requires meaningful engagement with theory from the humanities, archaeology, and biological anthropology. This paper discusses theoretical considerations in subterranean bioarchaeology to help contextualize and guide interpretations of human osteological assemblages from subterranean spaces. Particular attention is given to non-funerary contexts because these deposits provide opportunities to explore the symbolic function and agentic capacity of deceased individuals in ritual spaces and in certain cases reconstruct the health of people in antiquity without the constraints of the osteological paradox. ***This presentation will include images of human remains.

Bleuze, Michele [104] see Fricano, Ellen

Bleuze, Michele [104] see Gonzales, Eric

Bleuze, Michele [104] see Jokela, Amanda

Bleuze, Michele [381] see Mousalu, Marineh

Bleuze, Michele [104] see Prout, Michael

Bleuze, Michele [104] see Saldana, Melanie

Bloch, Lindsay (Tempered Archaeological Services LLC)**[370]** *Regional Journal Publishing: Continuity and Change*

There is an inherent conservatism to journal publishing. When selecting a venue, the savvy author will typically identify which journals have published articles in a similar style or on a related topic. Editors will assess manuscripts to ensure they are relevant to the journal scope and of general readership interest. Regional archaeological journals are structured by the prevailing topics and theoretical orientations within an area, with a tendency to continue publishing in the same way over time. However, by operating at a smaller

scale, regional journals may sometimes be more responsive to disciplinary shifts in research interests and practices. By openly acknowledging that publishing is political, we can take concrete steps to advance ethical and inclusive practice in publishing. I discuss my experience as editor of *Southeastern Archaeology* during such a period of change.

Bloch, Lindsay [32] see Ardren, Traci

Bloch, Lindsay [114] see Rutkoski, Ashley

Bloch, Lindsay [66] see Torvinen, Andrea

Blodgett, Clayton [76] see Totsch, Jessica

Blom, Deborah (University of Vermont), Luis Callisaya Medina, and Ruth Fontenla

[65] *Skull Bowls and Reciprocal Research at the UNESCO World Heritage Site of Tiwanaku, Bolivia*

During recent community-based reciprocal research at the site of Tiwanaku, Bolivia, we responded to requests to analyze a set of human remains removed from a museum display in 2010 after a roof collapse destroyed a display case. These remains mainly consisted of 66 crania that were collected or excavated by Carlos Ponce Sanginés and the Bolivian Institute of Investigation at Tiwanaku in the 1950s. Found this summer in the collection were six skull bowls from a single possibly Inka context from the Kalasasaya sector of the site. While ethnohistorical documents reference the Inkas drinking from the heads of their enemies, actual descriptions of skull bowls found in Andean archaeological contexts are relatively rare. Furthermore, unlike descriptions of these receptacles, which include most of the cranium, the bowls in Tiwanaku were formed from only the skull vault and have been labeled *tutumas* because of their similarity to drinking gourds used today in lowland areas of Bolivia. Here we present information about the production and use of these skull bowls through the analysis of burial contexts and macro- and microscopic observations of these unique remains. *****This presentation will include images of human remains.**

Blomster, Jeffrey (George Washington University), and Víctor Emmanuel Salazar Chávez (George Washington University)

[296] *Creation in Termination at Early Formative Etlatongo, Oaxaca: Maize, Sacrifice, and Olmec Imagery*

The emergence of sedentary and sociopolitically complex societies represents a fundamental transformation in Mesoamerica. At the highland site of Etlatongo, in the Mixteca Alta of Oaxaca, Mexico, recent excavations have explored later Early Formative (1400–1000 cal BCE) public space, a ballcourt, recovering a large assemblage of macrobotanical, faunal, and human remains, as well as figurines and ceramics. The termination of Etlatongo's ballcourt wove together many fundamental emergent Mesoamerican tropes and different ontological understanding of objects and living things. A round of commensal events, featuring a variety of cuisines and objects, marked the ballcourt's termination, resulting in the depositions of different maize varieties, some of them likely specific to the region, exotic faunal remnants, fragmentary human remains, unique figurines, including ballplayers, and a rich variety of pottery with both local and Olmec-style designs. In its termination, the ballcourt reveals the mutually constitutive animating energies of important Mesoamerican imagery and the subsistence, maize, that was already established as the main staple of the Etlatongo community. In the ballcourt's termination, we see the generation and establishment of basic elements of Mesoamerican life, politics, and ritual, which contributed to increasing complexities in cosmology, ontologies, and society at Early Formative Etlatongo.

Blomster, Jeffrey [347] see Vidal Guzmán, Cuauhtémoc

Blong, John (Washington State University), Justin Holcomb (Kansas Geological Survey, University of Kansas), Roger Amerman (Whitman College), and Jordan Thompson (Washington State University)

[96] *Finding the First Americans in the Bitterroot Mountains: Geoarchaeological Research in the Clearwater River Drainage, Idaho*

Archaeological research in the Pacific Northwest has established the importance of this region for understanding the initial settlement of North America. Archaeological sites and Indigenous oral histories

provide evidence for human occupation in the Late Glacial period, suggesting this may have been an initial entryway into North America. However, we have relatively few well-documented archaeological sites in this region that we can use to understand this period of initial settlement. Given the dynamic landscape history of much of the Pacific Northwest region, finding Late Glacial sites starts as a geoarchaeological research problem. Our research is focused on geoarchaeological and ethnogeological investigation of the initial settlement of the Clearwater River drainage in the Bitterroot Mountains, Idaho. Our primary focus is on the Kelly Forks Work Center Site on the North Fork of the Clearwater River, where our research has revealed deeply buried and stratified late Pleistocene to late Holocene archaeological deposits, including a Western Stemmed Tradition component. We are expanding our research to other locations in the Clearwater drainage, focusing on geoarchaeological investigation of Late Glacial deposits and ethnogeological investigation of Nimíipuu oral history to establish the timing of initial settlement and better understand the process of settling into this region.

Blong, John [107] see Thompson, Jordan

Blumenfeld, Dean, Eunice Villasenor Iribe (Arizona State University), and Christopher Morehart (Arizona State University)

[89] *Recent Investigations at Hacienda del Rincón de Guadalupe, Mexico: Examining Community Life at the Colonial Estate*

This paper presents findings from an ongoing archaeological investigation of Hacienda del Rincón de Guadalupe, a middle to late colonial mining hacienda located in the contemporary municipality of Apaxco, Mexico. The hacienda was a colonial institution engaged in a complex interplay with the broader economic, social, and political landscape of Mexico, transforming local environments and drastically reshaping local communities. Haciendas were also internally complex, often hierarchically organized according to class and racial boundaries. A dominant landowner, or hacendado, occupied the highest rung of the social ladder with various classes of workers comprising the rest, many of whom were bound to the hacienda via debt peonage. Drawing from both the archaeological record and surviving historical sources, we examine the interactions between land, labor, and community life at the colonial estate. We consider how the hacienda both shaped and was shaped by its constituent parts as well as responded to the broader social, political, and economic landscape.

Blythe, Jeffrey [302] see Jonsson, Emily

Boaretto, Elisabetta [384] see Shemer, Maayan

Bocinsky, Kyle (University of Montana), Shamsi Daneshvari Berry (Western Michigan University), Jeffery Clark (Archaeology Southwest), Keith Kintigh (Arizona State University), and Scott Ortman

[385] *Developing a Research Loom for Weaving Stories of Sustainability*

Looms are essential tools for weaving—they provide the necessary structure to produce even, consistent fabric. By simplifying and accelerating the weaving process, looms also encourage creativity and experimentation. Often, the archaeological research process resembles the woven arts: we weave stories about the past from the warps and wefts of archaeological, environmental, and contemporary data. The Role of Human Networks in Sustainable Development project seeks to weave stories of sustainable development in Ancestral Pueblo societies of the US Southwest. Sustainable development, which combines prosperity, inclusiveness, environmental sustainability, and peace, depends not only on technological advancements but also on social dimensions rooted in norms, values, and institutions. Before we began weaving these stories of sustainability, however, we had to build the research loom. This presentation will highlight two interoperable research tools: cyberSW for analyzing archaeological data on settlements and artifacts and SKOPE for accessing paleoenvironmental reconstructions. By integrating these tools with regional bioarchaeological data on human wellness from the HNDS-BIOARCH project, we are assessing how local and regional network structures contributed to sustainable development from AD 800 to 1600. Ultimately, our work aims to weave stories of sustainable development in ancient societies into the fabric of knowledge used to address contemporary challenges.

Bocinsky, Kyle [385] see Davis, Kaitlyn
 Bocinsky, Kyle [385] see Mills, Barbara
 Bocinsky, Kyle [385] see Stodder, Ann

Boeda, Eric (Paris Nanterre University), Christine Hatte (Paris-Saclay University), Aline Govin (Paris-Saclay University), Jeremy Jacob (Paris-Saclay University), and Christelle Lahaye (Bordeaux-Montaigne University)

[165] *Cultural Evolution in the First Settlements of South America*

Understanding the chronology and earliest settlement patterns of the Americas cannot be achieved without studying past relationships between man and the environment. Adapting, moving, or even disappearing in response to climatic fluctuations are the expected reactions. In order to discriminate between these different scenarios, we have (1) undertaken to characterize the chronology of human occupations in various South American countries (Brazil, Argentina, and Uruguay); (2) to reconstruct paleoenvironments as close as possible to the sites studied; and (3) to place these reconstructions of potential paleoresources in a broader paleoclimatic scheme. So far, human presence has been attested for at least 40,000 years. By reconstructing past climatic and environmental variations in these regions and the availability of raw materials, and by revealing the cultural and technological identity of past societies, our projects aim to highlight the evolution of the relationship between man and the environment during the Pleistocene and Holocene. This human paleoecological reconstruction will enable us to formulate hypotheses on potential routes of intra-continental diffusion and settlement. These hypotheses will be derived from the model established individually for each site, and from the recontextualization of archaeological data from the literature within a continental-scale paleoclimatic scheme.

Boeda, Eric [165] see Ramos, Marcos Paulo
 Boeda, Eric [165] see Viana, Sibeli Aparecida

Boehm, Andrew [179] see Andrews, Brian

Boerger, Caroline, and Kaitlyn Elizabeth Davis (Northern Arizona University; Chronicle Heritage)

[298] *Untangling Legacy Data: A Siteless Survey of the Citadel Pueblo Agricultural Catchment in Northeastern Arizona*

Cultural resource management professionals are no strangers to the challenges that accompany legacy data stewardship. Past collection methods, outdated site definitions, and the digitization of existing data often lead to inaccurate, overlapping, and missing data. Highly dense cultural landscapes that have been carved into discrete archaeological sites in the past often exhibit some of the most convoluted data. This poster presents the results of revisiting previously surveyed areas at Wupatki National Monument in northern Arizona using a siteless survey approach, relict plant tallies, and archival and ethnographic research. The goal of this project was to utilize adapted methodologies in a federal land management setting to examine issues of data collection, data gaps, legacy data management, and public interpretation on a landscape scale. Standardizing feature classes and using modified methods revealed that what had been previously recorded as discrete sites are in fact part of a larger connected landscape. This revelation has led to a deeper understanding of landscape use and the distribution of agricultural fields that once sustained the Citadel Pueblo community.

Bogaard, Amy (University of Oxford; Santa Fe Institute)

[111] *Pushing the Envelope, from GINI to EXPLO*

Tim Kohler's research is a masterclass in collaboration-building, openness and strategic thinking, all managed with good humor—and acronyms. Here I aim to show how lessons from Tim's work in the Southwest and on the GINI project inform Oxford research on EXPLO, an ERC synergy project with the Universities of Bern and Thessaloniki. EXPLO's focus is Neolithic settlement along upland lakeshores in northern Greece and the southwest Balkans. Waterlogged preservation opens up new perspectives on land-use practices and climatic "envelopes" of early farmers in these cooler, wetter zones, alongside Neolithic dispersal further north, into temperate Europe.

Boileau, Arianne (Mount Royal University), Kitty Emery (Florida Museum, University of Florida), George Kamenov (University of Florida), and John S. Krigbaum (University of Florida)

[288] *Stable Isotopes, Stable Lives: Animal Management and Trade at Contact Period Lamanai, Belize*

The Spanish colonial period in the Maya area was marked by significant disruptions to traditional Indigenous institutions, leading to the breakdown of long-distance networks and forced changes in subsistence economies. However, these disruptions were less pronounced in the Spanish borderlands. At Lamanai, Belize, we examine the persistence in animal management practices and participation in regional and macroregional exchange networks using a multi-isotope approach ($\delta^{13}\text{C}$, $\delta^{15}\text{N}$, $\delta^{18}\text{O}$, $^{87}\text{Sr}/^{86}\text{Sr}$, $^{206}\text{Pb}/^{204}\text{Pb}$, $^{207}\text{Pb}/^{204}\text{Pb}$, $^{208}\text{Pb}/^{204}\text{Pb}$). Our findings indicate that wild animals such as deer, peccary, tapir, and freshwater turtles, continued to be hunted post-Spanish contact. The Maya of Lamanai also practiced turkey husbandry, as shown through the intentional feeding of maize foods, and raised dogs on-site. Although Eurasian domesticates were rare at Lamanai, the few pigs and chickens were also fed a maize-based diet. All these animals were acquired/raised locally or regionally, with the exception of one nonlocal deer, which hints at the persistence of some exchange networks during the colonial period. Overall, these results suggest that the Lamanai community maintained economic stability despite the broader social, political, and economic transformations of the colonial period.

Boileau, Marie-Claude [61] see White, Joyce

Boisvert, Marie-Ève [373] see Gates St-Pierre, Christian

Bolender, Douglas [107] see Catlin, Kathryn

Bolster, Alyssa (Brown University), Andrew Scherer (Brown University), and E. Moises Herrera-Parra (Brown University)

[343] *Imparting Vitality in Death: A Case of Perimortem Dental Modification at the Late Classic Maya Site of Lacanja Tzeltal*

The Classic Maya modified teeth in order to impart new qualities, maybe even protections, on an individual. Specifically, modifications that replicated the *ik'* sign (wind, breath) on the anterior teeth have been linked to the notion of vitality. Could this vitality be viewed as extending into death? In 2023, the co-authors excavated and analyzed the remains of a nonadult individual (12–16 years) in an elite house group at the Late Classic Maya site of Lacanja Tzeltal, the seat of the kingdom of Sak Tz'i'. Life course reconstruction revealed that this individual suffered in their final years, likely from a systemic infection, which may have contributed to their death before reaching Classic conceptions of adulthood. Yet, a decision was made to modify this individual's teeth, either at or around the time of death, in the traditional *ik'* style. This rare case of nonadult modification, paired with a sustained childhood disease experience, invites nuance to our current understanding of Maya body modifications. These actions constitute care in a previously under-theorized sense: rather than being life-sustaining, this modification was most likely intended to serve its purpose after death. ***This presentation will include images of human remains.

Bond Reis, Lucas, Thiago Pereira (Federal University of Santa Catarina), Fabiana Teerhag (Federal University of Santa Catarina), Lucas Bueno (Federal University of Santa Catarina), and Gabriela Oppitz (University of São Paulo)

[157] *Placemaking, Resistance, and Transformation in the Upper Itajaí Valley, Brazil: Indigenous Histories across Temporal Divides*

This paper integrates 28 novel radiocarbon dates to contextualize Indigenous placemaking practices in the Upper Itajaí Valley, spanning from the present to the middle Holocene (~3000 BCE). The Laklänõ-Xokleng, Kaingang, and Guarani communities have endured various forms of colonial violence since the European invasion, continually preserving and transforming their identities through oral traditions and communal memory within the Terra Indígena Ibirama Laklänõ and surrounding areas. Although written records reflect a biased pro-colonizer perspective, they nonetheless reveal political and social practices shaped by Indigenous presence, such as the construction of roadways and the establishment of the Santa Thereza Military Colony. The long history of Indigenous occupation is also inscribed on the landscape through archaeological sites,

including pithouses, rockshelters, shell and earthwork mounds, and lithic and ceramic assemblages. By examining the diversity of placemaking practices reflected in settlement patterns and technologies, this research synthesizes over a decade of investigations, offering new insights into the resilient and transformative strategies of Indigenous communities in the Upper Itajaí Valley.

Bondarenko, Dmitry (Russian State University for the Humanities)

[113] *The Rise of Complexity among the Bini (West Africa)*

The paper examines the rise of sociopolitical complexity among the Bini of modern Nigeria. It is shown that this process took place mainly in the second half of the first millennium CE, was stimulated by the spread of agriculture and iron among the Bini, and is connected with their struggle for resources, in particular, with the Efa—the first settlers on the lands occupied by the Bini as a result of migrations in the first millennium BCE. The form in which a complex society raised among the Bini was the chiefdom. Further growth of sociopolitical complexity among the Bini led to the emergence, probably in the thirteenth century, of the Benin Kingdom. At the same time, it is emphasized that throughout history, the complication of the sociopolitical organization of the Bini was taking place through the reproduction at higher levels of the template of their substrate institution—the extended-family community. Using the case of Bini, the paper examines general issues important for studying the processes of rise, transformation, and functioning of complex societies: the relationship between military and peaceful components, profane and sacred, individual and collective power in their dynamics.

Bongers, Jacob

[45] *Human Vertebrae-on-Posts: Mortuary Politics and Persistence in Colonial Southern Peru*

What does the development of ritualized behaviors say about how Indigenous peoples endured political turmoil? This study examines how local communities in the Chincha Valley of southern Peru confronted European colonialism through mortuary practice. After dominating the Chincha Valley of southern Peru in the Late Intermediate period (LIP; AD 1000–1400), the Chincha Kingdom fell under rule by the Inca and Spanish Empires during the Late Horizon (AD 1400–1532) and colonial period (AD 1532–1825), respectively. Archaeological and bioarchaeological research in this area reveals over 500 mausolea and cists and diverse forms of postmortem body manipulation. Radiocarbon dating of 40 samples from these graves suggest changes in mortuary practices that coincide with Inca and Spanish imperial interventions. I focus on the colonial period, when Chincha groups remade their dead in response to widespread European looting by threading human vertebrae onto reed posts. I draw from the theoretical framework of *residence* to understand this practice as a strategy for continuing in—and adapting to—a new political regime. This talk contributes a new perspective on mortuary politics, demonstrating how graves and bodies become contested and how postmortem body modification enabled local communities to maintain relationships with their dead during crisis. ***This presentation will include images of human remains.

Bongers, Jacob [193] see Osborn, Jo

Bonneau, Adeline [174] see Armitage, Ruth Ann

Bonneau, Adeline [174] see Vandavelde, Ségolène

Bonthorne, Emma (Aditu Arkeologia)

[294] *The Archaeology of Historic and Modern Conflict in the Basque Country*

Between the eighteenth and twentieth centuries, the Basque Country was the setting for numerous large-scale conflicts, including the War of the Pyrenees, the Peninsular War, the Carlist Wars, and the Spanish Civil War. These conflicts deeply impacted Basque society and left an enduring legacy within the geographic and political landscape of the region. Thousands of battle casualties and large numbers of individuals summarily executed behind lines were buried in mass graves, which for the most part still remain undiscovered. This paper focuses on the archaeology of historic conflict burials in the Basque Country through a series of case studies, exploring the strategies employed in the disposal of the dead, the challenges in locating and preserving these sites (including long-standing political implications), and emerging trends that impact which sites are selected for excavation. This research not only enriches our understanding of the region's military

history but contributes to broader discussions on the ethics and responsibilities of uncovering and memorializing conflict-related burial sites. The findings underscore the importance of integrating the study of conflict burials into the wider framework of conflict archaeology, offering new perspectives on narratives of warfare during one of the region's most intense periods of conflict. ***This presentation will include images of human remains.

Bonthorne, Emma [294] see Walker, Mikaila

Borges, Caroline [167] see Wallman, Diane

Borges, Mathieu [227] see Dodd, Lynn

Borges-Eckert, Samantha (Arizona State University), John Murray (Arizona State University), Maria Eduarda Donegá, and Curtis Marean (Arizona State University)

[191] *A Preliminary Analysis of the Stone Artifacts from Pinnacle Point 5-6 South, South Africa*

The Pinnacle Point (PP) site complex, recently declared a UNESCO World Heritage site, is known for its abundance of evidence for early symbolic behavior such as pigment modification, shell collection for nonconsumption purposes, coastal foraging, bladelet technology, and the first evidence of heat-treated stone tools. This, coupled with its high-resolution dating sequence and associated paleoenvironmental record, makes it a prime site for investigating the evolution of human cognition and social behavior in South Africa from ~160–50 ka. Here, we present the preliminary lithic analysis of PP5-6 South, which has been dated using OSL to ~120,000 years ago. We compare the typological and technological attributes of the PP5-6 South lithic assemblage to contemporaneous occupations of *Homo sapiens* at PPI3B and the later occupations at PP5-6 North. The studied attributes include raw material, artifact class, cortex type, platform characteristics, and evidence of heat treatment. Our study aims to better understand human technological strategies over time during the Middle Stone Age.

Borges Vaz, Erika [60] see Martinez, Gustavo

Borowy, Haley (University of Maryland)

[217] *Exploring the Effects of Climate Change and Coastal Erosion on Maryland's Cultural Heritage*

Multiple archaeological and historic sites on properties part of Jug Bay Wetlands Sanctuary, Maryland, are threatened by sea level rise and coastal erosion. Located along the Patuxent river, a tributary of the Chesapeake Bay, Emory Waters Nature Preserve and the surrounding area are of notable concern. Until now, relatively little archaeological inquiry has been done at the three sites that are found within the preserve, especially directly along the coast. The shovel test survey conducted by county employees, interns, and volunteers revealed a rich, dense material history at a high risk to both coastal erosion and sea-level rise. It is hopeful that the results and research done in this project further emphasize the need to protect these sites, or at the very least, investigate them more before they are washed away.

Borrero, Luis (CONICET), and Fabiana María Martín (CEHA, UMG)

[382] *The Volcanic Desert, the Low Mountain Ranges, and the Process of Human Expansion to Ultima Esperanza*

Human dispersal in South Patagonia at the end of the Pleistocene proceeded at different rhythms, according to the location of barriers and distances between suitable places. Peri-Andean areas were difficult to explore, given the complicated topography and harsh winters. The only area with Late Pleistocene occupations relatively near the Pacific Ocean is Ultima Esperanza, Chile. After glacier retreat from Cerro Benitez, a treeless landscape with southern beech tree patches and large grazing animals characterized the region. The arrival of hunter-gatherers occurred ca. 12.7 ka., producing a strong but short archaeological signal recorded at Cueva del Medio and other sites. It was suggested that human dispersal into Ultima Esperanza using long-distance logistical mobility started at the Pali Aike Lava Field in the eastern steppe, the southern Late Pleistocene staging area recorded in America. Low-scale barriers existed between both regions, but geomorphological evidence points to the Llanuras de Diana as an entry corridor. The process of dispersal through a landscape dotted with bogs is discussed.

Borrero, Luis [88] see Gutierrez, Maria
 Borrero, Luis [301] see Martin, Fabiana María

Borrero, Mario (University of California, San Diego), and Geoffrey Braswell (University of California, San Diego)

[200] *An Overthrow of the Past: Tomb Reentry and Political Turmoil at the Classic Maya Site of Nim li Punit*
 The Terminal Classic (approximately AD 790–900) marked a time of significant social and political upheaval for Maya society. The site of Nim li Punit, located in southern Belize, experienced significant changes during the Terminal Classic period, ultimately leading to its abandonment by around AD 830. While we can note the overall effects of these major historical events, it can be difficult to isolate specific artifacts or features that definitively mark significant political or social transformations. Other Mesoamerican examples are often associated with the destruction of elite material culture, a clear break from the reverence the Classic Maya traditionally showed to the dead. The case examined here is the reentry and removal of cultural material (jade, bars, and shell beads) from two Early Classic Maya burials, which were re-offered as part of a Terminal Classic cenotaph. These actions suggest a shift in Maya practices and beliefs at the site away from traditional Early Classic authority, perhaps reflecting broader changing social and political dynamics during the Terminal Classic. *****This presentation will include images of human remains.**

Borrero, Mario [325] see Stroth, Luke

Borsa, Adrian [315] see Comer, Douglas

Borsodi, Sara (New York University), Radu Iovita (New York University), and Abay Namen (Nazarbayev University)

[332] *Reconstructing Stone Tool Function at Tikenekti-2, Kazakhstan*
 Understanding hominin interaction with their environment is crucial for identifying what parts of everyday life were integral to survival during the Late Pleistocene of Central Asia. Rapid changes in climate would have mandated adaptation by hominins traveling through or living in this region. This is especially true for the hominins following the “northern route” of expansion through Central Asia. Along this route is the newly discovered site of Tikenekti-2 (10–13 ka BP), whose assemblage is made of a variety of raw materials. This provides an opportunity to understand the raw material selection behaviors and stone tool function. Use-wear analysis helps us to reconstruct these behaviors. Unlike most assemblages knapped on flint and chert, the Tikenekti-2 assemblages contain lithics made of porphyry and siltstone, materials that have not previously undergone systematic use-wear analysis. Here, we present a project designed to create a use-wear reference collection using these local raw materials. After experimentation and documentation, these results were applied to understanding the use-wear patterns of archaeological tools. We aim to expand this reference collection and apply it to more Central Asian sites to better understand stone tool function and hominin adaptation to changing environments.

Boscan, Alana [202] see Hora, Elizabeth

Bose, Shibani (Independent Researcher)

[279] *The Elephant in the (Archaeologist's) Room: Vignettes from the Indian Subcontinent*
 Within the panoptic theme of elephant archaeology, this paper employs the prism of material remains to recapitulate the journey of the pachyderm in early Indian history and culture. In a land that is home to the largest population of Asian elephants, bones tell their own tales and so does iconography. While faunal remains affirm the antiquity and close association humans have had with this enigmatic species, embedded in the visual archive are discreet cues to sensibilities ranging from reverence to persecution that have defined human interactions with the mega mammal across millennia. In the quest for tangible relics that reflect how the animal was perceived and engaged with in antiquity, my enquiry commences with a synthesis of faunal evidence chronicling the human-elephant interface in diverse cultural contexts. It then proceeds to unsheathe glimpses of the mega herbivore from an impressive repertoire of rock paintings, terracotta, and stone sculptures found in different temporal and geographical settings in the subcontinent. By integrating these

elements of the archaeological record, my narrative attempts to sift through the rich but complex layers of a relationship fraught with paradoxes.

Bossio, Laura (University of Michigan Museum of Anthropological Archaeology), and Drosos Kardulias (University of Michigan)

[184] *Evaluating the Role of Warfare in the Upper Mississippian Transition of the Western Lake Erie Region of the Lower Great Lakes*

The Western Lake Erie region of the Lower Great Lakes witnessed immense change at ca. AD 1250. Late Woodland people, who were seasonally mobile on a dynamic riverine and wetland landscape, became settled village agriculturalists. Lifeways, pottery, and tool kits changed drastically. Two hypotheses to explain these changes have been debated since the 1970s—one hypothesis argues for local Late Woodland adaptation and the other argues for Upper Mississippian warfare and displacement. It is clear today that the foundational archaeological work in the Western Lake Erie region, rooted in culture-history, was subject to particular interpretive biases; stories of Indigenous conflict during the contact and colonial period were projected onto the past. The question remains—what role did warfare play in the Upper Mississippian transition in the Western Lake Erie region of the Lower Great Lakes? Combining archaeological, historical, and traditional data, this paper presents a methodology for assessing the role of warfare in the archaeological past. Presenting new fieldwork at the Buttonwood site (33-WO-7b), situated on the floodplain of the Maumee River Valley of northwestern Ohio, this paper investigates the relative roles of warfare, cooperation, and alliance in the Upper Mississippian transition of Western Lake Erie of the Lower Great Lakes.

Boswell, Alicia (UC Santa Barbara)

[374] *Moche Metals and Local Ideologies from Loma Negra, Piura, Peru*

Metal adornments such as headdresses, earflares, and other prescribed regalia were part of the ritual dress worn by Andean elites along with vestments of fine textiles and precious materials such as shell, stones, and feathers. In this paper I consider the design, imagery, and technology of Moche style metal adornments from Loma Negra in the Cerro Vicus region of the Upper/Alto Piura valley, Peru, dating to the sixth–seventh centuries. The furthest north Moche style metal regalia has been reported, this metalwork offers an interesting case study to consider technology transfer and local expressions of Moche ideology.

Boswell, Alicia [273] see Koons, Michele

Boucher, Anthony (AtkinsRealis), and Joshua Goodwin (AtkinsRealis)

[101] *Weathering Change: Responses to Climatic Change along the Black Warrior River*

During the Late-Mid-Holocene the southeast was impacted by dramatic changes in climate causing what appears to be a large shift in past people's interaction with the landscape seen through a regionwide restructuring of settlement patterns and the abandonment of significant places. Noting these conspicuous changes in the cultural landscape, this period has been given various monikers such as “The Millenium in Question” or “Bullen's Transitional Phase.” In western Alabama this span of time is known as the “Gulf Formational Stage.” The Creole Williams site, located on a relic natural levee along the fall line of the Black Warrior River in Tuscaloosa, Alabama, has provided evidence of occupation spanning a period of time from the Late Archaic to the Late Woodland. Using this site as a case study this paper explores how local inhabitants responded and negotiated with climatic and cultural changes occurring throughout the Southeast.

Boucicaut, Pascale

[201] *“100% afrodescendiente”: (Counter)mapping Heritage in la Ciudad Panamá*

During the summer 2018 I conducted ethnographic research with activists and community members in Panama's *movimiento afrodescendiente*. That year, preparations were being made for the capital city's quincentennial celebrations, including the fashioning of new landmarks and museums. Responding to concerns that the local and national government would overlook contributions of enslaved Africans and their descendants within the events, I distributed disposable cameras and began a three-month long collaborative “photovoice” project. In this paper I share findings from that project, as well as the contributions of my collaborators to the fields of folkloristics, heritage studies, and both historical and contemporary archaeologies.

Boudreaux, Tony [50] see Krus, Anthony

Boulanger, Matthew (Southern Methodist University), Brian Luetchford (North Texas Archeological Society), Ron Ralph, and John Benedict (Hill Country Archeological Association)

[275] *Last Tango in Paris: Partnership, Citizen Science, and the 1971–1972 Texas Archeological Society Field School Collections from Paris, Texas*

The 1971–1972 Texas Archeological Society field schools, cohosted by Southern Methodist University, resulted in the identification of 230+ archaeological sites in Central Texas and partial excavation of several of these sites. Few of these sites were registered with the state of Texas. Poor curatorial practices—including lack of interest and support from sponsors—in intervening years have led to these collections being inaccessible for researchers and public alike. We discuss our efforts to develop local partnerships aimed at creating hands-on collaborative relationships to increase public awareness of the curation crisis, and the, at times ugly, realities of archaeology. We find that citizen-science programs are ideal ways to address strong public interest and curiosity about archaeology, while also addressing the mountainous backlog of projects and data on which institutions sit. We conclude that curatorial repositories must adopt direct public involvement as a primary objective

Boulanger, Matthew [112] see Allen, Myriah

Boulanger, Matthew [223] see Jorgeson, Ian

Bounxaythip, Souliya [61] see White, Joyce

Bousman, Britt [112] see Allen, Myriah

Boutin, Alexis, Samantha Dollinger (Sonoma State University), Michael Konzak (Sonoma State University), Tristan Niles (Sonoma State University), and Christian Pease (Nellie Analytics)

[45] *Collaborative Approaches to Restoring Agency for Residents of the Sonoma Developmental Center’s “Home Cemetery”*

The Sonoma Developmental Center served thousands of residents who would today be described as disabled, mentally ill, or deviating from social norms. Many of the ~2,000 residents buried in its cemetery from 1892 to 1960 were placed in the SDC as children. Their grave markers featured only their initials and registration number, and even these were removed soon after the cemetery went out of use. Since the SDC’s closure in 2018, community members sought to visibly memorialize the cemetery and its residents. Their efforts, which included fundraising and consensus building among state agencies and politicians, culminated in the recent dedication of a large memorial. Since 2022, Sonoma State University has worked with these stakeholders to learn more about SDC residents’ lives and deaths through archival research and digital technologies, and to document the cemetery through noninvasive archaeological methods amid impending land transfer to California State Parks and redevelopment by private entities. This presentation demonstrates how, by uniting the university’s resources and expertise with the passion and knowledge of local communities, we are safeguarding the cemetery as a cultural resource. Our research centers the stories of the people buried there in an attempt to restore some of the agency that institutionalization stripped from them.

Bouzouggar, Abdeljalil (National Institute of Archaeological Science and Heritage)

[175] *Origins and Evolution of the Pleistocene Hunter-Gatherers in Northwest Africa*

A long-standing debate in Africa concerns the precise chronological and cultural relationship of the MSA (Middle Stone Age) to the LSA (Later Stone Age). In broad terms, the Northwest African MSA is represented by Levallois flake and blade industries that sometimes contain small cores and a range of potential projectile forms such as bifacial foliates and tanged points that define the Aterian. The MSA industries without tangs, which date from at least 300,000 years to 350,000 years, are attributed to early forms of *Homo sapiens* as well as the MSA with the tangs (Aterian), which dates to at least 145 ka. In contrast, the LSA (25,000–10,000 cal BP) is identified with a more recent demographic expansion of modern humans into Northwest Africa and is associated with a microlithic bladelet culture known as the LSA/Iberomaurusian. Recent fieldwork and dating programs in Morocco are raising the possibility of greater continuity in human populations from the MSA to LSA.

Bouzouggar, Abdeljalil [281] see Kuhn, Steven
 Bouzouggar, Abdeljalil [281] see Moubtahij, Zineb
 Bouzouggar, Abdeljalil [281] see Rezek, Zeljko
 Bouzouggar, Abdeljalil [281] see Ziani, Ismail

Bover, Pere [119] see Shimada, Izumi

Bowden, Bradley [206] see Lewis, Michael

Bowen, Corey (University of Illinois, Chicago)

[155] *Fourteen Years of Atlantis Questions: Reddit's AskHistorians as a Public Archaeology Field Site*

Combating pseudoarchaeology in popular discourse requires not only analyzing the rhetoric of its most vocal proponents, but understanding the misconceptions that predispose audiences to listen. Social media may permit a glimpse at those misconceptions in ways that classroom settings and traditional surveys cannot. With four million unique monthly users, the AskHistorians Reddit forum is the internet's largest public scholarship initiative and has been at the forefront of combating misinformation on social media. Its unique question-and-answer format has generated a large textual corpus of interaction between academic archaeologists and everyday readers curious about pseudoarchaeology. This paper builds on the experience of moderating AskHistorians to evaluate the utility of social media as a resource for studying public beliefs about archaeology and ancient societies. It identifies widespread, yet overlooked, ideas about the human past that hinder archaeology outreach and merit attention from public-facing archaeologists.

Bowen, Kristin (Bureau of Reclamation)

[95] *Challenges of Managing Navajo Reservoir*

Reclamation constructed the Navajo Dam from 1958 to 1961, creating the Navajo Reservoir. Consequently, Pueblo I habitations that were formerly lining river corridors became archaeological sites situated on the 159 miles of reservoir shoreline. This paper examines current actions involved with managing aging infrastructure, reservoir level fluctuations and site exposure, and NAGPRA implementation, from the perspective of a water management agency. Balancing dam safety, water rights, recreation, and protection of cultural resources in the four corners region involves legal compliance, working partnerships, and close coordination with Native American Tribes.

Bowers, Anna [372] see Fugitt, Alexandra

Bowler, John [189] see Cureton, Travis

Bowser, Brenda (California State University, Fullerton)

[103] *Women's Gardens, Long-Term Ecological Knowledge, and Deep Historical Insights in the Upper Amazon*

What is long-term ecological knowledge (L-TeK)? What do scholars expect of Indigenous people's historical knowledge? Where does history reside? Whose concepts of historical time are being considered? Over many decades, there has been a growing awareness among archaeologists and other scholars of the importance of understanding Indigenous ontologies and epistemologies that root knowledge in deep ancestral time. However, ethnoarchaeological approaches have tended to favor studies of material culture that is likely to be highly visible in the archaeological record—pottery, lithics, and settlement patterns—and fast science rather than slow science. What shifts are occurring in ethnoarchaeology, as an outcome of the growing awareness of TEK and related epistemological, ethical, and practical sustainability issues? Importantly, ethnographic studies of traditional management of plant resources have been integrated with archaeological research productively, contributing deep historical insights that connect the past to the present in meaningful ways that contribute to the practical goals of sustainability. This presentation will address this broad subject by focusing on long-term ethnoarchaeological research conducted collaboratively with Indigenous communities in the Sápara Territory of the Ecuadorian Amazon, based on studies of women's gardens.

Bowser, Ronda (Institute for Canine Forensics)

[243] *Advancing the Role of Historic Human Remains Detection Dogs: Expanding Capabilities in Archaeology and Preservation*

The use of Historical Human Remains Detection (HHRD) dogs has seen significant advancements, becoming increasingly vital in both archaeology and forensic investigations. These specially trained dogs possess an extraordinary ability to detect the scent of human remains, even those that have been buried or decomposed for centuries. Originally, their primary role was to locate recently deceased individuals, but their scope has since expanded to include historical and precontact contexts. This progress is due to improved training techniques, a deeper understanding of canine olfaction, and greater collaboration between archaeologists, forensic experts, and dog handlers. As the demand for HHRD dogs in historical contexts continues to grow, it is essential to push the boundaries of our understanding of their capabilities. This discussion will explore the knowledge and techniques necessary to meet the increasing needs in deploying these dogs for historical and preservation purposes. The discussion will include the individual training and efficacy testing needed for these unique tasks. By advancing our knowledge and refining training methodologies, we can fully harness the exceptional abilities of these dogs, making them even more effective in uncovering and preserving our history.

Boyd, Carolyn [174] see Steelman, Karen

Boyd, Douglas (Stantec Inc.)

[70] *Finding Tom Cook: The Untold Stories of Enslaved and Freedman Blacksmiths in Texas*

The Bolivar Archaeological Project in Texas highlights the meaningful contributions that CRM archaeology can make to African diaspora studies and local communities of color. Tom Cook was a freedman blacksmith who lived and worked in the predominantly white community of Bolivar in north-central Texas from ca. 1871 to 1898. His blacksmithing skills enabled him to be financially successful, and he became a landowner, business owner, a respected citizen in Bolivar. He also became a Methodist minister, a Prince Hall Freemason, and prominent leader in Denton County's black community. Cook was not an anomaly, however, and his life and career are representative of a widespread pattern of formerly enslaved blacksmiths who, upon emancipation, became businessmen, landowners, and leaders in their communities and local and state governments. While a few prominent African American blacksmiths in Texas are widely known, there are many more whose stories remain obscure and await rediscovery. The past 180 years has been an amazing journey for the Cook family, and this is a classic "untold story" in Texas history.

Boyd, Jay [227] see Demyan, Marcela

Boyd, Matthew (Lakehead University), Lisa Sonnenburg (Parks Canada, Lake Superior National Marine Conservation Area), Mengxi Lin, Ashley Lemke, and John O'Shea (Museum of Anthropological Archaeology, University of Michigan)

[277] *The Role of Paleoecology in Understanding Early Holocene Submerged Landscapes and Archaeological Sites in the Laurentian Great Lakes*

The Laurentian Great Lakes experienced profound fluctuations in lake levels following deglaciation in response to climate change, isostatic adjustment, and meltwater routing. At the same time, these water bodies acted as magnets for past hunter-gatherer populations, resulting in archaeological sites that are distributed across a wide range of elevations including in regions currently under water. The submerged landscapes that mark low-water phases during the early Holocene hold important clues for understanding the lives of early hunter-gatherer societies and the environments that they inhabited and utilized. This paper describes the application of pollen, macrofossil, and testate amoebae analyses to submerged organic and other sedimentary deposits on the Alpena-Amberley Ridge of Lake Huron, which was a terrestrial corridor ~9,000 years ago during the low-level Stanley Phase. We also briefly discuss the potential for recovery of contemporaneous deposits, and associated archaeological sites, in the Lake Superior Basin.

Boyd, Matthew [37] see Kooiman, Susan

Boydston-Schmidt, Ash [226] see Traxler, Loa

Bozkurt, Defne (Koç University)

[380] *Understanding Ritual Events within the Architectural Context of Building on a Cumulative Construct: The Case of the Çatalhöyük East Mound*

Looking at closure, abandonment, and subsequent foundation events as interlinked and sometimes overlapping actions opens the door to questioning rituals and “rules” and asking whether ritual emerges from practice or hovers above daily pragmatism. The Çatalhöyük East Mound (7100–5950 BCE), a deeply cumulative settlement in Central Anatolia, with uninterrupted Neolithic occupation, presents an ideal laboratory for understanding such processes and how they change over time. While at first glance Çatalhöyük seems to present strict rules regarding the building of successions of houses, a closer look at its elaborately documented archive may provide a different picture, especially considering the pragmatic realities of building on an unevenly subsiding accumulation of settlement layers. In other words, looking at the minutiae of such processes reveals the dynamics between abstract (in this case socio-ritual) and material forces that have continuously produced and modified both the mound and its people. This perpetual state of reciprocal and emergent “becoming” grounds the theoretical approach with which this paper aims to explore continuity, change, adaptation, and resilience. The periodic abandonment of buildings and the practices surrounding these actions provide the perfect case study for exploring this process of “becoming,” against ongoing discussions of what constitutes ritual. ***This presentation will include images of human remains.

Bracken, Justin (University of Utah Press)

[100] *Controlling Access, Channeling Water: Fortification and Hydraulic Architecture at Muralla de León*

Fortification is almost necessarily monumental in scale in order to be effective, requiring substantial modification to the built environment according to a coherent overall plan. Such landscape alterations tend to impact natural hydrological flows, and indeed many instances of fortification in the Maya world were designed with hydraulic implications in mind. Hydrology appears to have been a fundamental consideration in the design of the fortifications at Muralla de León, constructed in stages over centuries. This presentation considers the interplay of hydraulic and defensive architecture in this setting, assessing their relative significance and by extension the settlement patterns and function of the site through time.

Bratdmöller, Marcel [277] see Auer, Jens

Brady, James (California State University, Los Angeles), Michael Brennan (Search Inc.), Stanley Walling (Community College of Philadelphia), and Fred Valdez Jr. (University of Texas, Austin)

[381] *Results of ICP-MS Analysis of Speleothems Recovered from a Semi-subterranean Feature at Chawak But'o'ob, Belize*

During an investigation conducted in conjunction with the Rio Bravo Archaeological Survey directed by Stanley Walling, a number of fragments of stalactites were recovered from a small, enclosed feature at Chawak But'o'ob, located in the Programme for Belize Conservation and Management Area. The feature, dubbed Cave I, occupies a space beneath a protruding bedrock shelf that forms its ceiling. The eastern and southern walls consist of large blocks of the shelf that detached but remained leaning against the shelf, creating a dark space behind them. The ceiling was checked for the presence of drip water formations or scars indicating that stalactites had been broken and removed. None were noted and no water was seen entering the cave during or after rains. ICP-MS was performed on several stalactites and a ceiling sample. While the stalactites are clearly local, they did not come from Cave I. It is proposed that the speleothems were deposited in the cave to buttress its claim to being a real “cave.”

Brady, James [104] see Fricano, Ellen

Brady, James [104] see Gonzales, Eric

Brady, James [104] see Jokela, Amanda

Brady, James [381] see Mousalu, Marineh

Brady, James [104] see Prout, Michael

Brady, James [104] see Saldana, Melanie

Brady, James [104] see Verdugo, Cristina

Brandeberry, Anna [107] see Garrison, Thomas

Brandolini, Filippo (Massachusetts Institute of Technology)

[341] *GIS Modeling: Cross-Disciplinary Approaches between Landscape Archaeology and Ecosystem Services Science*
Historic agricultural practices have shaped landscapes, creating a heritage that is crucial for sustainable development. Agriculture, as the largest form of land use, has profoundly impacted ecosystems worldwide since ancient times. Preindustrial systems like terrace farming and agroforestry, once valued for their resilience, have largely been abandoned over the past century. However, these traditional rural strategies are now regarded as key pathways to sustainable agriculture, addressing challenges such as soil erosion, carbon sequestration, and water management. This paper explores how the ecosystem services science (ESS) framework can act as a bridge between economics, ecology, and landscape archaeology, particularly through GIS modeling. By employing the ESS framework, landscape archaeology offers insights into how past societies interacted with their environments, particularly regarding resource use. Studying ancient ecosystems through archaeological evidence enhances our understanding of long-term sustainability and resource management. Furthermore, landscape archaeology can inform modern ESS studies by providing a long-term perspective on human-environment interactions, evaluating the sustainability of ancient societies, and recognizing how historical activities have shaped present ecosystems. Integrating ESS into landscape archaeology has the potential to influence future research, conservation efforts, and policy-making by offering a deeper understanding of long-term ecological and societal dynamics.

Brannan, Stefan (New South Associates), and Jennifer Birch (University of Georgia)

[50] *Reframing Chronologies: Collaborative Approaches to Fifteenth- through Eighteenth-Century Indigenous and Colonial Archaeology*

The proliferation and sophisticated use of radiocarbon-forward research designs in eastern Woodlands archaeology are challenging outdated culture-historical classifications and outmoded chronological constructs, particularly as they relate to the centuries immediately preceding and following colonization. Taxonomic periodization based on ceramics, other formal artifact types, and European-manufactured objects is breaking down and furthermore holds limited relevance for contemporary descendant communities and their collaborators. In this introduction to the session, we outline how advances in radiocarbon dating—including sampling strategies, laboratory methods, and statistical modeling—are enabling researchers to refine chronologies and overcome challenges associated with calibration. We highlight macroregional possibilities for transforming understandings of settlement patterns, population movements, and material culture circulation by integrating archaeological, historical and traditional knowledge sources and the possibilities for generating new insights into Indigenous agency, the timing and pace of cultural transformations, and responses to colonial incursions. We see broad relevance on new research around these themes to academic, public, and private research sectors. Our objective for this session is to co-create a research agenda that address continental- to local-scale questions and fosters collaborations between Tribal and First Nations representatives, researchers, and cultural resource managers, with a focus on data sovereignty and meaningful research outcomes for all.

Brantingham, P. Jeffrey (UCLA)

[175] *The Physics of Landscape Exploration and the Design of Mobile Tool Kits*

Steve Kuhn has long pushed us to consider the decisions that go into the design and maintenance of mobile tool kits. Foragers must contend with variable raw material distributions, the economics of stone transport, the limits of lithic technological design, and the uncertainties inherent to foraging. Inspired by Kuhn's work, I use a neutral model to look at how mobility drives the exploration of space and may impact foraging uncertainty. At an abstract level, mobility produces an inner compact region of frequent, repeated exploitation and an outer diffuse region of infrequent encounters. In the inner compact region there should be few foraging surprises, while in the latter most moves expose potentially new foraging conditions. I argue that the design goals for mobile tool kits should be quite different in these two regions.

Brassell, Simon [229] see Meier, Trenton

Braswell, Geoffrey [200] see Borrero, Mario
 Braswell, Geoffrey [325] see Stroth, Luke

Braun, David [279] see Thompson, Jessica

Bravo, Bradymir (Caqui Estudios Interdisciplinarios En Huarochirí, UNMSM)

[45] *¿Muertos vivos, aun? El coleccionismo local y el desarraigo de los “ancestros” en Huarochirí y Yauyos, Lima-Perú*
 En Huarochirí y Yauyos, cada vez menos, los “muertos” guardados en sus tumbas desde tiempos prehispanicos, construyen un paisaje vivo que interactúa con las comunidades locales (con respeto, miedo y devoción) a través de narrativas orales, ritos y ceremonias festivas heredadas de tiempos remotos. Esto contrasta bruscamente con la imagen actual de los “muertos” guardados por las comunidades locales en museos improvisados expuestos a los visitantes. La historia de este coleccionismo no es reciente: los incas y la extirpación de idolatrías se apropiaban de los “muertos” locales, ¿el objetivo en común?, desarraigar a la población local de sus ancestros e identidad. En este escenario, al coleccionismo “científico” (XIX-XX), la Expedición Antropológica de Washington, las prácticas y políticas promovidas por Tello, debemos la herencia del coleccionismo local moderno. Mediante documentación de historias orales, entrevistas y casos de museos locales, notamos que los pobladores locales asimilaban estas prácticas, desplazando discursos nuevos, estrategias, convocando a sus especialistas, y reafirmando sus aspiraciones (razones y fines) para formar colecciones o hacerse cargo de colecciones preexistentes. Podría esto estar evidenciando que el poblador local actualmente desplaza una lógica diferente al pasado de entender el rol, importancia comunal y su autoidentificación con los “muertos” de su paisaje. *****Esta presentación incluirá imágenes de restos humanos.**

Bravo, Bradymir [200] see Aranibar Bazan, Adolfo

Brennan, Emily

[313] *Resiliency in the Reformation Era: An Analysis of Morbidity and Mortality Trends in Thirteenth–Eighteenth-Century Berlin*

Life course perspectives on health consider embedded experiences over time, accounting for changes in biological, social, and environmental contexts that can explain differential outcomes explained by life history trade-offs. Within this perspective, sensitive period models posit that risk exposure at specific times has lifelong effects on the structure and function of organs, tissues, and body systems. This project analyzed nonspecific markers of stress and cortical bone indices from skeletal individuals ($n = 243$) excavated from Petriplatz, the churchyard of St. Peter’s Church, dated to 1200–1717 CE, in medieval Cölln (present-day Berlin) in order to examine the effects of early life stress. Results indicate that experiencing such stress had a limited effect on morbidity across time but was significantly associated with mortality risk, with differential results based on sex and time period. During the late medieval period (ca. 1200–1500), early life stress was associated with an increased mortality risk, while during the early modern period (ca. 1500–1717) it was associated with decreased mortality in estimated females. These results can be interpreted in light of principles from developmental biology, the Osteological Paradox, and the changing social status of women in the post-Reformation period as a new gender hierarchy was solidified. *****This presentation will include images of human remains.**

Brennan, Michael [381] see Brady, James

Brenton, Barrett [225] see Hummel, Taylor

Breslawski, Ryan, Annette Romero (AR Consultants Inc.), Olivia LoGiurato (AR Consultants Inc.), and Kathryn Crater Gershtein (AR Consultants Inc.)

[207] *Zooarchaeological Insights into Early Caddo and Late Woodland Subsistence along Bois d’Arc Creek, Northeast Texas*

Between 2019 and 2021, AR Consultants Inc. excavated six sites in the Bois d’Arc Creek watershed, yielding abundant evidence for residential occupations spanning the prehistoric Woodland and Caddo periods.

Archaeofaunal analyses for three sites are now complete, with the fourth underway. This area of Texas sits at the prairie-woodland transition, providing access to diverse animal resources. The faunal assemblages are taxonomically rich, with abundant deer, turtle, bird, and rabbit remains. Bone surface preservation is generally excellent, allowing us to assess human butchery practices as well as the contributions of nonhuman taphonomic processes to assemblage formation. These data shed light on the resources that people relied on while living in this area, site occupation season, and how Bois d'Arc Creek subsistence compares to other areas of northeast Texas with evidence for Woodland and Caddo occupations. This talk will present our findings to date as well as discuss the advantages and challenges of undertaking a large multi-analyst archaeofaunal project in a CRM setting.

Brewer, Jaxson (Morehead State), Gillian Collins (Morehead State University), and Timothy Hare

[190] *Visualizing Artifact and Structural Distributions across Mayapan's Urban Core*

We examine the architectural and artifactual patterns distributed across the Postclassic city of Mayapan (AD 1150–1450), located in the Yucatán Peninsula of Mexico, by analyzing artifacts recovered from middens throughout the city. We synthesize data collected by the Carnegie Institute, which conducted extensive mapping and excavation at Mayapan during the 1950s and 1960s. We compile the classified data for analysis. By displaying the distribution of several artifact classes, we explore variations in their distributions across the city to reveal key patterns in urban organization, settlement history, social stratification, and economic activity. We focus on the variations in the distribution of tools, craft items, foreign products, and pottery to highlight key areas of craft production and consumption. Furthermore, by identifying where foreign products are most densely located and where those objects were produced, we enhance our understanding of trade and regional interconnectivity in the Postclassic period. The study's findings aid in understanding the nature of production activities and social structure throughout the city and how they reflect broader regional and interregional interactions. By connecting material culture and spatial data, we hope to contribute to a better understanding of Mayapan's place in the economic ecosystem of Postclassic Mesoamerica.

Brewer, Katherine

[220] *Conversion or Not Conversion: An Analysis of Puebloan Burial Patterns before and after the Introduction of Spanish Catholicism to the US Southwest*

Spanish colonization in the seventeenth century of what is now the US Southwest changed the social, political, and religious landscape of the area. One of the stated purposes of the Spanish for colonizing new territories was to spread the word of God as deemed by the Catholic Church. Therefore, with Spanish colonists into what became Nuevo Mexico came Franciscan priests who attempted to convert as many of the Puebloan groups to Spanish Catholicism as they could and enforce that conversion wherever possible. I will address these conversions efforts and analyze the success or lack thereof of the Franciscan priests through changes in Puebloan burial practices from precontact to postcontact in the pueblos of Abó, Awatovi, Gran Quivira, Pecos, and Quarai. I do so through the framework of hybridity, mortuary theory, and theory of conversion as well as through three separate models and the associated statistical analyses I used to analyze the data. I obtained all the data I utilized in this study from records of excavations and osteological analyses and used this data only after consultations with affiliated tribes. No burial imagery will be shown in the accompanying presentation.

Brewer, Simon [385] see Vernon, Kenneth

Brewer-Jensen, Ella [80] see Fenn, Thomas

Breyer, Kathryn (Bryn Mawr College)

[81] *Religious Glocalization in Western Sardinia: Assessing Change in Agrarian Cult Practices and Landscapes, ca. 500 BCE to 300 CE*

Local responses, cultural connectivity, and material entanglement have been key subjects in Sardinian archaeology since van Dommelen's work in the 1990s. Following the glocalization approach outlined by Roudometof, this paper foregrounds the adoption and integration of the cult of Demeter in Sardinia by locals

and outsiders alike. Introduced to the island by the Carthaginians in the late fourth–early third centuries BCE, the cult of Demeter reuses Bronze Age architecture and incorporates Punic and Roman inspired cult objects. Analysis of the entangled archaeological contexts in which the Punic and Roman cult objects were found is discussed and subsequently compared to other representations and practices of this cult found throughout the western Mediterranean. Likewise, the *longue durée* of cultic landscape of Sardinia is considered. Ultimately, the author argues for the relevance of glocalization and its resulting *glocality* to not only the study of religious and landscape transformations in Sardinia and the wider Roman world but also its relevance to other societies throughout antiquity and into the present.

Bria, Rebecca, Erick Casanova Vasquez (PIARA Peru), and M. Elizabeth Grávalos

[331] *Taskscapes and Mobility in Recuay Commensalism: A Preliminary Exploration in the Northern Callejon de Huaylas Valley, Ancash, Peru*

This paper explores the evidence for regional interaction in Recuay (and early Recuay, called Huarás) feasting in Ancash, Peru (300 BCE–700 CE). While commensalism has long been identified as a cornerstone of Recuay rituals, mobility has been less central to Recuay studies. Nonetheless, various lines of evidence suggest it, such as the Recuay’s heavy investment in camelids—animals long important to Andean trade—for feasting and other activities. The sporadic presence of exchanged materials associated with Recuay elites like metals, obsidian, and precious stones further suggest movement. In an effort to bring together new evidence for Recuay mobility and commensalism, our work examines survey data from sites across the northern Callejon de Huaylas valley, excavation data from feasting contexts at two of these sites named Pariamarca and Hualcayán, and results from material analyses. Landscape, architectural, and viewshed studies point to Pariamarca as a unique ritual place and ecological setting that people from other villages may have journeyed to for feasting events. Ceramic petrography and textile analysis indicate the movement of goods and people within and beyond the study area. With these data we draw attention to the taskscapes that shaped Recuay communities at different scales.

Bria, Rebecca [200] see Oliver, Kalei

Briceño, Jesús [182] see Mader, Christian

Bridgeman, Lauren (University of Arizona)

[364] *Rearranging the Cultural Landscape: Recognizing Reservation Reconstruction*

This presentation will explore how cultural creativity is employed by tribal nations as they redefine their relationships to traditional landscapes in the presence of colonial invasion. The federal reservation establishment enforced settler geographical boundaries on top of known cultural landscapes. Colonial boundaries restricted free movement for Native peoples throughout their traditional territory. For Native people’s movement and migration are directly intertwined in traditional knowledge, cultural resources, songs, prayers, and stories that embody community health and well-being. With federal boundaries delimiting movement of tribal communities, new migrations and shifting cultural landmarks reinvigorated tribal relationships to land. Embodying the surrounding land with fresh significance, despite the encroachment of federal boundaries, is active survivance. Drawing on examples from the Northern Plains, this presentation will explore how the Gros Ventre and Assiniboine Nations engage in active knowledge creation within their “reservation” landscape. Power in the land was always immutable; however, shifting migrations and relationships to the land emphasizes how people negotiate survival illuminating movement for future travelers.

Briggs, Rachel [376] see Pavao-Zuckerman, Barnett

Briggs, Rachel [50] see Rodning, Christopher

Briz I Godino, Ivan [376] see Speller, Camilla

Broderick, Lee [103] see Houle, Jean-Luc

Brokaw, Nicholas [52] see Ward, Sheila

Brooks, Allyson (Department of Archaeology and Historic Preservation)

[108] *Cultural Resource Management in a Changing Landscape of Federal and State Laws and Regulations*

Proposed changes in current federal and state laws and regulations that are the basis of cultural resource management are occurring on a more frequent basis. With the focus on renewable energy siting, and increasing types of infrastructure projects, our profession is experiencing increased streamlining proposals at the federal and state level. In Washington State exemptions for affordable housing projects are removing the ability of the archaeological community to identify potential impacts to cultural resources in urban areas. The Federal Advisory Council on Historic Preservation proposed using the regulatory concept of a program comment to exempt projects from Section 106 review without tribal, state, or federal consent. There is also a continuing number of congressional proposals on streamlining and exemptions that affect our work. These initiatives are, or will be, having an impact on the profession and business of cultural resource management, some of which is due to a lack of understanding of archaeology, both in terms of its value to society and the science of what we do. This paper will discuss the importance of paying attention to these proposals, responding through the public comment process and the need to express concerns over these proposals to Congress and state legislators.

Brooks, Emily (Arizona State University), and Joel Palka (Arizona State University)

[104] *Maya Cliff and Cave Burials in Tlalocan: Archaeological and Osteological Research at Lake Mensabak, Chiapas, Mexico*

In the Late Postclassic period (ca. 1300–1600), Maya at Lake Mensabak, Chiapas, Mexico, buried their dead and placed their ancestors' remains in specific cliff and cave shrines. Excavations and osteological analyses at these shrines have revealed that the majority of the individuals are adults, with an equal distribution of male and female remains. The burial patterns indicate collective rites for once active members of the community. Archaeological evidence related to pilgrimage shrines at Lake Mensabak suggests that people arrived at these select religious spaces for healing or they were interred at the shrines to transcend into the Other World. Ethnographic evidence from contemporary Lacandon Maya societies in the region and details from local rock art panels support the identification of Mensabak as a Tlalocan, a paradisaical land of the dead associated with a prominent water mountain as the abode of a rain and thunder deity. This presentation covers the archaeology of cliff and cave skeletal shrines at Lake Mensabak with Lacandon collaborators and the continuing osteological research on the well-preserved human remains in our joint endeavors to understand and appreciate their ancestors' past. ***This presentation will include images of human remains.

Broomandkhoshbacht, Nasreen [316] see Nelson, Elizabeth

Broughton, Jack [126] see Byers, David

Brouwer Burg, Marieka (University of Vermont)

[341] *Pitfalls and Potentials of Paleoenvironmental Modeling at the Quarter Century*

Our ability to model paleoenvironments has improved dramatically over the last 25 years with improved technologies, new insights, and growing databases of proxy information. Oftentimes, the data we harness for archaeological modeling has been collected by interdisciplinary colleagues who pursue different questions, scales, and scopes of research. These datasets engender various challenges that should be recognized, analyzed, and integrated. The benefits of doing so are manifold, expanding our investigative and interpretive abilities. In this paper, I address some of the challenges we face at the quarter century. Additionally, I advocate bringing an anthropological lens to archaeological computational model building and describe a case study in which ethnographic and ethnohistoric data are integrated into paleoenvironmental models to furnish them with depth and richness. In doing so, paleoenvironmental models can become testable, thereby increasing their utility as well as our understandings of past human-landscape interactions.

Brouwer Burg, Marieka [284] see Bazarsky, Alexandra

Brouwer Burg, Marieka [387] see Harrison-Buck, Eleanor

Brouwer Burg, Marieka [305] see Haverland, Fiona
 Brouwer Burg, Marieka [284] see Tibbits, Tawny

Brown, David (Texas Archeological Research Laboratory)

[105] *The Inka and Volcanos in Ecuador: A Quarter Century of Collaboration with Minard Hall and Patricia Mothes*

This paper discusses the critical influence that Pete Hall and Patty Mothes have had on my research into the historical presence of the Inka in Ecuador. An integral part of those studies over the last 25 years, from a decade of work at San Agustin de Callo at the foot of Cotopaxi Volcano to investigations at Inka fortifications and late pre-Inka sites in the northern highlands, Pete and Patty's presence has been essential to a deeper understanding of the Inka in the region. While some details have been presented in previous papers, this compilation offers a broader perspective on the Inka occupation and gives due credit to my longtime collaborators on related volcanic aspects. From devastating pre-Inka eruptions that may have facilitated their conquests to later eruptions that aided their demise, and a complex of interactions in between, the Inka saga in Ecuador was just one phase of the long interaction of volcanos and human culture in northern Ecuador.

Brown, Kaitlin

[110] *Unveiling Temporal Palimpsests and Pluralities during the Mission Era in Alta California*

This paper challenges prevailing interpretations of the Mission period (AD 1769–1833) in Alta California by exploring the often-overlooked complexities within and beyond its prescribed temporal boundaries. While the mission era has traditionally served as the primary lens for examining Indigenous-colonial interactions, this perspective frequently fails to capture the distinct nuances that emerged during and after the missions' operation. A significant challenge has been the scarcity of archaeological contexts capable of disentangling these intricacies. However, recent excavations at Mission La Purísima Concepción have revealed distinct temporal patterns, offering new insights into how the Native community navigated the Spanish (AD 1769–1822) and Mexican (AD 1822–1848) periods, and persisted well beyond mission secularization. These findings not only align with global shifts but also reflect the endurance of Indigenous communities navigating successive waves of colonization. The framework presented here bridges gaps in historical contexts, deepening our understanding of temporal pluralities and palimpsests in the archaeological record.

Brown, M. Kathryn [199] see Yaeger, Jason

Brown, Matthew A., Cory Look (Farmingdale State College, State University of New York), Reg Murphy (Museum of Antigua and Barbuda), and Tamara Varney (Lakehead University)

[233] *An Assessment of Archaeology and Archaeological Methods in Antigua, West Indies: The Last 30 Years*

Over the past three decades, archaeological research in Antigua has undergone significant transformation. This paper provides an overview of the evolution in methodologies and research questions that helped shape our understanding of Antigua's rich prehistoric and historic cultural heritage. Initially focused on traditional excavation and analysis techniques, our approaches have progressively adapted to address the pressing challenges posed by climate change, extreme weather events, rapid development, and coastal erosion. These environmental and anthropogenic factors have necessitated the integration of innovative technological solutions to safeguard and study archaeological sites. Key advancements which include the use of remote sensing technologies, GIS mapping, 3D modeling, integration of geoarchaeological techniques, and the use of aerial and underwater drones have enhanced our ability to monitor, excavate, and mitigate the impacts of environmental and anthropogenic changes on archaeological resources. Additionally, advancements in ancient DNA have allowed us to explore new ways of understanding past peoples, migration, kinship, and disease. This retrospective highlights the dynamic interplay between evolving research methodologies and the urgent need to protect and preserve Antigua's archaeological heritage in the face of contemporary challenges. By embracing technological innovations, we aim to contribute to a sustainable and resilient future for archaeological practice in Antigua. *****This presentation will include images of human remains.**

Brown, Matthew A. [233] see Look, Cory

Brown, Matthew Tyler (University of Michigan), Ian Beggen (University of Michigan), Hubert Zuayer Quispe-Bustamante (Zuayer Consultores & Ejecutores S. A. C.), and Veronique Belisle (Millsaps College)

[386] *Andesite Exchange Networks from the Formative to Middle Horizon in Cusco*

The Rumiqolqa quarry is well known as the main source of stone for some of the most impressive Inka constructions, however the quarry's use prior to the Late Horizon is less understood. During her excavations at the Formative site of Marcavalle, Mohr-Chavez hypothesized that the andesite used to make flaked tools at the site likely originated from Rumiqolqa with Minaspata as a main supplier. This paper presents the results of geochemical and GIS analysis of a sample of andesite from Late Formative and Middle Horizon contexts at the sites of Muyumoqo and Ak'awillay to test Mohr-Chavez's hypothesis of andesite exchange in Cusco. The geochemical and macroscopic data indicate that the majority of andesite originated from the Rumiqolqa quarry and provides support for an intensive, localized exchange network of andesite beginning in the Formative. Further, we model the potential trade routes taken using least-cost paths and ethnographic accounts of caravans. Overall, our study documents an intensive exchange of andesite beginning in the Formative, differential access/preference for this andesite, and the persistence of this exchange despite Wari intrusion into the Lucre Basin during the Middle Horizon.

Brown, Matthew Tyler [189] see Larsen, Leah

Brown, Matthew Tyler [194] see Marsh, Gabrielle

Brown, Matthew Tyler [223] see Phang Del Pozo, Patrick

Brown, Nicholas (University of Toronto)

[172] *Multispecies Migrations as Emplaced Knowledge in Chavín Calendars*

This presentation explores “pan-Andean” practices of placemaking and time-keeping during the first millennium BC across distant corners of the Chavín world, including Ancash, Pasco, and Ica (Peru). Relational analysis of the webs of beings in Chavín ritual arts can reveal commonalities and disjunctures in the emplacement of monuments, such as stone sculptures at the central highland temples of Chavín de Huántar and Chawin Punta, as well as painted textiles from the south coast cemeteries of Samaca, Karwa, and Coyungo. Visual links between these far-flung corpora form the basis for a new model of Chavín calendars that integrates embodied principles of solar orientation from ancient “crossed dances” with emplaced environmental knowledge of migratory animals like birds and whales. The cyclical fabric of space-time (*pacha*) in the Chavín cosmos can thus be framed in relational terms as a multispecies network of seasonal movements to and from the places archaeologists call ceremonial centers.

Brown, Samantha [156] see Starkovich, Britt

Brucker, Ryan [190] see Murphy, Beau

Bruhns, Karen (San Francisco State University)

[335] *No Toltecs Here: Why the Early Postclassic in El Salvador Is Not Due to a Mesoamerican Migration*

In much of Central America there has been a strong tendency to identify archaeological cultures with historic people and/or migrations from Mexico. In El Salvador the Early Postclassic Cihuatán Phase has been variously called Toltec, Aztec, and Pipil, although it is manifestly none of the above. Recent work at Cihuatán itself, along with the identification of a series of contemporary sites, suggests a far different scenario while tying El Salvador firmly into the greater Mesoamerican cultural and political sphere.

Brumbaugh, Laura (Washington State University)

[192] *Identifying Signature Flavors of Ancestral Pueblo Cuisine in the Mesa Verde Area*

This poster will begin to identify signature flavors of Ancestral Pueblo cuisine in the Mesa Verde area of the American Southwest. Many projects and undertakings include flotation samples and botanical analyses, but often little attention is paid to plants that appear in small quantities. Plants that are used as flavorings—like herbs and spices—are typically not the bulk of a diet, but they are an essential part of both the experience of a meal and the immense cultural significance of food. Using existing reports from excavations in the Mesa

Verde area, I will identify plants that are found in contexts related to culinary practices. I will then identify consistently co-occurring plant types, which could constitute signature flavor combinations. These results will inform future paleoethnobotanical research into Ancestral Pueblo cuisine.

Brumbaugh, Laura [326] see McAllister, Christine

Bruneau, Laurianne (EPHE-PSL University, Paris), and Mark Aldenderfer (University of California)

[85] *Introducing a Standardized and Adaptable Method for Rock Art Recording*

The authors advocate for the adoption of a standardized method for rock art recording since it is a reproducible archaeological record. As in any other field, standardization strengthens the reliability of data, facilitates comparative studies, and enhances collaboration. The method relies primarily on a multiscale approach to rock art (country, region, site, zone, rock, surface, motif, and scene) ensuring the record of its context. An alphanumeric code was set into place for every level by assigning a Unique Identifier to each object. This unique identifier is used to connect spatial, visual, and descriptive data. The latter relies on a crafted thesaurus proposing definitions and illustrations of hierarchical terms. This method is the outcome of a five-year research project on Himalayan rock art that was developed according to the current standards in the Digital Humanities and Open Science. It applies FAIR principles (Findable, Accessible, Interoperable and Reusable) and relies on open file formats. We believe it proposes an effective and simple enough way to gather a standardized dataset for rock art that could be adopted and adapted in other areas such as the Americas.

Brunso, Karen

[108] . . . and Tribes: Lessons from Our Worldview and Search for a Partner in Preservation

Indian tribes are often listed last in any preservation literature. This unfortunate placement in the language has left many tribal preservation officials feeling like the “last check box” in preservation processes, leading to many misunderstandings and hard feelings. It does not have to be this way. Tribes are looking to be treated as the sovereign nations they are and as integral partners in preservation. As the preservation community finds itself at a crossroads, unsure on what direction to take, it is time for them to listen to the lessons tribes have learned over the many years of advocating for their ancestors. If the broader preservation community is ready to listen to the tribes and be a meaningful partner together, we can navigate the crossroads together into a brighter future. It is through the long history of tribal sovereignty that provides lessons to the broader preservation community on how to navigate these crossroads.

Brunson, Katherine [288] see Witt, Kelsey

Bryan, Lucia (University of California, Santa Cruz), Lily Singman-Aste (University of California, Santa Cruz), and Eréndira Quintana Morales (University of California, Santa Cruz)

[229] *Into the Depths: Developing Tools to Examine the Deep-History of Fishing in the Kafue River Floodplain*

The Kafue River Floodplain is a critical freshwater resource in Zambia for local fisheries and communities. The Bantu-Mobility Project has worked on archaeological sites in this region that chronicle the settlement and movement of the Bantu-speaking communities and their trade routes during the sixth to sixteenth centuries. Our contribution to this project is to evaluate the socio-ecological impact of sustained fishing in the region through zooarchaeological analysis of excavated fish remains from one of the continuously occupied mounds called Mwanamaimpa. In order to do this, we have developed research tools for analyzing fish remains in a largely unstudied region. This presentation summarizes the preliminary results of the identification and analysis of species from the archaeological record and presents further research questions. To perform this investigation, we created a contemporary reference collection, applied size estimation equations to the applicable catfish bones, and created a qualitative and quantitative data entry form for a complete analysis of the collection. Our findings connect local practices and environmental change to the past movement of Bantu-speaking populations, helping sustain fishing practices for the communities that rely on these resources today.

Bryan, Lucia [59] see Singman-Aste, Lily

Bryant, Laura [186] see Shepard, Sarah

Bryant, Paula [379] see Meierhoff, James

Bryce, William (Southwest Archaeology Research Alliance), Michael Terlep (Forest Service), and Kristen Francis (Forest Service)

[298] *One Hundred and Fifty Shades of Projectile Points: 10,000 Years of Land Use and Early Agricultural Lithic Technology in the Far West*

We present current and ongoing research on 10,000 years of land use through projectile points in the Far Western Region, defined here as the northern Grand Canyon region and the Colorado Plateau-Great Basin transitional zone. The 2023 Kane wildfire on the North Kaibab Ranger District of the Kaibab National Forest burned 2,934 acres of Pinyon-Juniper woodlands exposing dozens of previously unrecorded archaeological sites. One site, AR03070304136, is a roughly three-acre multicomponent site extending from the late Paleoamerican period into the Protohistoric period that minimally encompasses 150 identified projectile points and hundreds of bifacial tools. Basketmaker II dart points from the Early Agricultural period comprise a large proportion of the identified projectile points. This poster characterizes site AR03070304136 and compares the Basketmaker II points with collections from other Far Western Early Agricultural sites. Our preliminary data show similar manufacturing methods and quantitative metrics between Far Western Early Agricultural points and Western Basketmaker II points of northeastern Arizona and southwestern Utah.

Bryce, William [189] see Cureton, Travis

Buchanan, Briggs [57] see Hamilton, Marcus

Buchanan, Briggs [57] see Kilby, David

Buchanan, Briggs [98] see Smallwood, Ashley

Buchanan, Briggs [190] see Williams, Nancy

Buchanan, Courtney (Forest Service), and Jennifer Perry (CSU Channel Islands)

[218] *A Tale of Two Ranches: Owners, Workers, and the Centering of Whiteness in the Stories of California's Channel Island Ranches*

Santa Cruz and Santa Rosa Island, two islands in California's Channel Islands National Park, were the homes of ranching operations from the mid-nineteenth century through the close of the twentieth century. The Channel Islands were home to the Chumash and their ancestors for over 10,000 years, until Spain claimed them as part of Alta California in 1542. The ranching operations that followed the forcible removal of the Chumash are a microcosm of the American West: ownership was passed from white Euro-Americans to white Americans, while the land and animals were tended by Spanish, Mexican, and Indigenous cowboys and vaqueros. In telling the stories of the ranches, most scholarship has focused on the owners and their families, rather than the workers who made the ranches run. Through recent archaeological fieldwork, this paper shifts the focus from the white owners to the non-white workers who lived and worked on the ranches.

Buchanan, Meghan (Auburn University)

[102] *"Even Before the Battle's Begun": Historicizing Violence and Warfare in the Southeastern United States*

Archaeological approaches to warfare and violence have traditionally been influenced by socio-evolutionary theoretical frameworks. The research stemming from these perspectives have focused on identifying external factors that caused warfare, the role of violence in the evolution of complex societies, and the use of violence by elites to gain prestige and power. In this paper, I discuss the impacts of Timothy Pauketat's theoretical and methodological perspectives on changing the ways in which many archaeologists now recognize violence and warfare as historical processes (learned, lived, experienced, and negotiated practices) rather than innate qualities of humanness or characteristics of certain types of societies. To highlight how Pauketat's theoretical influences have impacted my approach to researching warfare, I turn to two archaeological examples: the Common Field site, a palisaded, burned Mississippian town located downstream from Cahokia Mounds; and

Camp Watts, a Confederate Camp of Instruction in Alabama. Both sites highlight that violence and warfare were more than battles and politicking and that the power of archaeology lies in understanding lived experiences before, during, and after periods of heightened violence and conflict.

Buckley, Gina (University of Algarve, ICArEHB), and Bianca Gentil (Pennsylvania State University)

[106] *Bigote and Birkenstocks: A Mentor for the Ages*

We open this symposium with a tribute to Ken Hirth's illustrious career, celebrating his significant contributions as a scholar and applied scientist in archaeology over the last five decades. As two of Dr. Hirth's final students at Penn State, we honor our mentor for his invaluable guidance that helped launch our diverse careers. We will also briefly discuss our research in Mesoamerica to illustrate how his influence continues to shape our scholarly pursuits. This symposium honors Dr. Hirth's legacy and the lasting impact of his mentorship on future generations of archaeologists.

Buckser, Sarah (University of Colorado, Boulder)

[54] *Looking the Part: Assessing the Ability of Craniometrics and Morphological Indices to Distinguish Canis latrans Skulls from Canis lupus and Canis familiaris*

Although 3D geometric morphometric analysis is the preferred method of analyzing skull morphology in canids, many parties lack funding or training needed for such assessments. Instead, they must rely on the simpler and more affordable methods of craniometrics and morphological indices to create a species identification. North American canid identification must separate dogs, wolves, and a third canid species, *Canis latrans*, the coyote. Zooarchaeology lacks comparable datasets for craniometrics and morphological indices for coyotes, and the efficacy of such methods to distinguish coyote skulls from dog and wolf skulls remains unclear. This project measured 50 skulls from the CU Boulder Natural History Museum's vertebrate collections and compared the ability of craniometrics and morphological indices to group coyote specimens discretely. Results show coyotes have sufficient morphological overlaps with dogs and wolves to render most craniometrics or indices ineffective, although the measurement of the mandibular P1 tooth and the palatine M1 tooth showed promise in consistently separating dog, coyote, and wolf skulls into discrete groups. While craniometrics and morphological indices may be effective in separating dogs and wolves, the presence of *Canis latrans* makes morphological indices and craniometrics insufficient for identifying most early North American canids.

Budka, Marcin [334] see Korpershoek, Mirte

Budziszewski, Adam (University of Warsaw)

[330] *Burning Questions and Smoldering Answers: Cremation Burial Practices in Middle Balsas Region during the Postclassic Period*

Death is the terminal stage of human life. When studying this crucial element of life, it is challenging to consider such aspects as interaction or exchange. However, if we interpret the funerary ceremonies as a form of interaction between the living and the dead, a new interpretive lens opens where mortuary archaeology, bioarchaeology, and the archaeology of religion play crucial roles. This is particularly relevant for studying the cremation burial practices, since the transformation that human bodies undergo as a result of burning of remains of deceased significantly limits the ability to reconstruct the biological profile of the deceased in a traditional bioarchaeological approach. On the contrary, all the detectable alterations and agencies, both driven by fire or the participants of the funerary ceremony, provide valuable information about intentional ritual decisions, providing essential data for understanding of the past ideology concerning the appropriate treatment of deceased. This presentation explores recent findings on cremation practices in the Middle Balsas region of Michoacán, with a focus on the Los Tamarindos site. I will discuss how the assemblages of loose cremains reflect both the community's perception of the body of the deceased and their eschatological of local societies in Postclassic period. *****This presentation will include images of human remains.**

Bueno, Kaimana [293] see Schrader, Max

Bueno, Lucas [157] see Bond Reis, Lucas

Bugg, Travis [179] see Kinneer, Christopher

Buhmann, Dakota (University of Wyoming)

[321] *Cave of Souls: The Unidentified Remains of Upper Baraćeve Špilje, Croatia*

Since 2015, the University of Wyoming and a team of Croatian archaeologists have recovered human remains from Baraćeve Špilje, a cave located approximately 140 km south of Zegreb, Croatia, on the boarder of Bosnia and Herzegovina. These remains were highly fragmented, intermixed with faunal elements, and predominately documented on the surface. ¹⁴C dating of the remains has established two ages, ranging from the late 1300s to the mid-1400s. Little research has been done on these remains, leaving their identities and the circumstances of their death unclear for the excavators and researchers of the cave. To address this, over 4,000 fragments were examined to determine the minimum number of individuals (MNI) and demographics of the individuals interred within the cave. This analysis will attempt to provide context to the remains and pave the way for future research to give a narrative to individuals who have long since lost the ability to tell their own stories. ***This presentation will include images of human remains.

Buikstra, Jane (Arizona State University)

[339] *Contextualizing or Cancelling Aleš Hrdlička: Lessons from the Past*

In his carefully researched tome, *The Great Paleolithic War* (2015), David Meltzer demonstrates a remarkable depth of scholarship, carefully reading and evaluating 66 reference pages of primary sources. Included were 15 scholarly works by Aleš Hrdlička. Meltzer has thus critically engaged with the research products of a controversial figure in the history of American biological anthropology. Hrdlička and his research have been heavily critiqued for scientific racism, sexism, adherence to a eugenics doctrine, and many other viewpoints that are demonstrably unscientific today. For this reason, some would dismiss him and his entire body of work, thus cancelling a career that founded American biological anthropology and its flagship journal. This presentation will argue that rather than cancelling Aleš Hrdlička, we should—as Meltzer has—critically engage with the person and his career. We consider how this dominant professional succeeded and where he erred. We are encouraged to consider carefully how our work is impactful, not just academically but also socially. We are also reminded how important it is to be willing to listen and revise our perspectives in the face of weighty counterarguments. Thus illustrated are scientific values of objectivity, critical review, and social responsibility, as exemplified in Meltzer's scholarship.

Buikstra, Jane [316] see Nelson, Elizabeth

Bullen, Jonah (University of Tennessee, Knoxville), and Alison Damick (University of Tennessee, Knoxville)

[337] *The Archaeological Potential of North American Fungal Microfossils*

Fungi are ubiquitous across diverse landscapes and play critical roles in human societies, influencing global foodways, land use, and economies. In North America, the ethnographic works of various Indigenous groups document the significance of fungi as dietary items, medicine, fire tinder, and more. Despite their demonstrated importance, fungi are often overlooked in relevant archaeological literature due to the rare circumstances in which they are preserved. In this study, we report advancements on an experimental methodology that aims to develop protocols for identifying fungi in the archaeological record through the isolation and description of fungal microfossils (mycoliths).

Bulmer, Ryan [340] see Hawkins, Rebecca

Burentogtokh, Jargalan [123] see Eklund, Emily

Burentogtokh, Jargalan [86] see Greaves, Aspen

Burge, Keri (Harvard University), Irina Velsko (Max Planck Institute for Evolutionary Anthropology), and Christina Warinner (Harvard University)

[316] *Exploring the Potential of Tracking Human Migration through Oral Archaea in Dental Calculus*

Understanding human movement through time and space is a major goal of archaeogenetic studies. Though the field has predominantly made use of DNA from ancient human remains, dental calculus offers the possibility of indirectly tracing human movement using the commensal microbes ancient humans carried with them. Although oral bacteria are being increasingly studied, prominent commensal archaea, including the genera *Methanobrevibacter*, remain underexplored. Advancements in de novo genome assembly have allowed for a closer view of these enigmatic archaea, making it increasingly clear that ancient DNA previously identified as *Methanobrevibacter oralis* likely originates not from a single species, but rather from a group of unnamed species within this genus. In this study, we present a more complete view of the *Methanobrevibacter* phylogeny by analyzing 228 metagenomically assembled genomes (MAGs) from dental calculus and dental plaque samples dating from Neanderthals to modern humans across multiple continents. Building on the work of previous research, which identified three species clusters within this genus, we report the discovery of a fourth species cluster. Additionally, we analyze 54 MAGs from another oral archaea genus, *Methanomethylophilus*, with phylogenetic relationships revealing clear geographical clustering. This demonstrates the possibility of utilizing understudied commensal species as tracers for population migration.

Burger, Richard (Yale University)

[282] *Pacopampa and the Chavín Cult*

Before the extensive work at Pacopampa directed by Yuji Seki and Daniel Morales, I hypothesized that Pacopampa was linked to Chavín de Huántar by its involvement in the Chavín cult, perhaps as a branch oracle or shrine. More recently, I have argued that Pacopampa was a participant in Chavín's sphere of interaction. In this talk, I will briefly review how the new evidence revealed by Seki and his team affects the viability of these hypotheses.

Burgess, Blaine (Chronicle Heritage), and Bryce Pimsner (Chronicle Heritage)

[68] *A Cultural Resource Survey of Material Culture and Settlement across 4,500 Acres of the Grand Canyon-Parashant National Monument*

This poster summarizes Chronicle Heritage's recent survey of 4,500 acres in the Grand Canyon-Parashant National Monument (GCPNM). The Arizona Strip, particularly the GCPNM, sits at the western edge of the Ancestral Pueblo world, is adjacent to Fremont and Upland Patayan, and is encompassed by the ancestral homelands of the Paiute and Navajo. Archaeologists have historically overlooked the chronology of this portion of the Colorado Plateau and inconsistently incorporated it into local and regional cultural developments. While archaeologists have tended to focus on the abundant material cultural in the GCPNM dating to the Ancestral Puebloan Basketmaker II to Pueblo III (ca. AD 300–1200) periods, Chronicle Heritage's survey also provides a nuanced look at the Archaic period (ca. 7000 BC–AD 450). This was a critical period when lifeways at a nexus of major cultural traditions that eventually took shape. Newly recorded data, ceramic seriation, geospatial mapping, and existing archaeological evidence in the region augment our current understanding of Ancestral Pueblo chronology, settlement patterns, and interaction and provide insight into the antecedent cultural landscape that kickstarted centuries of substantial change.

Burgio-Ericson, Clinton

[220] *The First Bite: Archaeological Traces of Early Spanish Colonial Carpentry from Quarai and Pecos Pueblo*

Primary sources have long attested to the training of Indigenous carpenters in early colonial New Mexican woodworking. By the 1620s, Spanish craftsmen began introducing techniques based in the widespread Iberoamerican Mudéjar carpentry vernacular, which Pueblo artisans learned and used in constructing Franciscan missions. These accounts have received little study nor testing, based in the presumption that the 1680 Pueblo Revolt destroyed almost all early carpentry in New Mexico. In fact, scattered archaeological traces and remnants permit a partial reconstruction of early New Mexican carpentry and processes of cultural negotiation through the medium of woodcarving. Combining the contextualizing methods of archaeology with analysis of museum collections, this paper uses the earliest known archaeological remnants of colonial woodwork to explore the transmission and significance of pre-Revolt carpentry. It relies on

remnant artifacts from Quarai (ca. 1623–1628 CE) and Pecos (ca. 1620–1630s CE), now in the collections of the Maxwell Museum of Anthropology, the Center for New Mexico Archaeology, and the Pecos NHP. Surviving amid carbonized fragments and architectural remnants, the “bite” of chisels and gouges characteristic of these early carpenters speak to their technical faculty but also processes of intercultural negotiation, meaning making, and violence amid the entanglements of colonial New Mexico.

Burk-Hise, Kathryn [95] see Ryan, Ethan

Burke, Adam (Texas A&M)

[391] *Characterization of Coastal Plain Cherts from Florida and Georgia Using Petrography and ICP-MS: A Multimethod Approach for Ascribing Provenance to Stone Tools from Florida’s Late Pleistocene and Early Holocene*
Archaeological research on the Coastal Plain of the southeastern United States has yielded a rich assemblage of stone tools produced by late Pleistocene and early Holocene hunter-gatherers, but little research has been undertaken to quantitatively define and describe the variable stone resources from which these tools were made. Past efforts to characterize cherts in Florida have been largely microscopically and macroscopically descriptive, focusing on the microfossil inclusions and petrographic features of a small number of sampled quarry sites. This paper presents the results of a multimethod approach to the characterization of cherts and silicified corals from northern Florida and southern Georgia using petrography, solution introduction inductively coupled plasma–mass spectrometry (ICP-MS), and laser ablation ICP-MS (LA-ICP-MS) on a chert comparative assemblage of over 1,200 samples from more than 100 discrete sources. These data are then compared to Clovis, Suwannee, and Bolen projectile points to infer past mobility patterns in late Pleistocene and early Holocene Florida. A multimethod approach is recommended for characterizing cherts and chert artifacts from the Coastal Plain of the lower Southeast, with an initial focus on identifying the parent formation of the cherts followed by more intensive petrographic and geochemical analyses to arrive at discrete provenance.

Burke, Chrissina [87] see Chouinard, Natalie

Burke, Chrissina [293] see Schrader, Max

Burke, Ryan [361] see Pflieger, Gabriella

Burnett, Paul (SWCA Environmental Consultants), Kristin Barker (Beyond Yellowstone Program), and Lawrence Todd (GRSLE Inc.)

[122] *Intersecting Paths: Comparative Modeling of Archaeology and Wildlife Migration in the Shoshone National Forest*

We compare archaeological probability models developed for the Shoshone National Forest with wildlife migration data derived from GPS collars to explore correlations between past human activity and wildlife movement. By using the same environmental parameters for both archaeological and wildlife models, we identify overlapping and diverging patterns over time, pinpointing areas where human occupations coincide with modern wildlife corridors. While direct evidence of specific wildlife procurement is scarce in the Shoshone archaeological record, our landscape-level probability models provide insights into past resource procurement behaviors. Previous research showed a strong correlation between archaeological material and elk migration corridors, with the correlation decreasing but remaining strong as we extend further into the past. Building on this elk correlation, we now extend our evaluation to other species. This comparative analysis represents a step toward understanding the broader relationship between wildlife migration and human occupation within the Shoshone National Forest and offers a foundation for future research into multispecies occupational patterns.

Burns, Gregory [126] see Greenwald, Alexandra

Burns, Gregory [126] see Kievman, Hayley

Burns, Jeffrey [224] see Purcell, David

Burrillo, Ralph [68] see Steber, Matthew

Busby, Colin [377] see James, Steven

Busch, Matthew [125] see Vogt, Cassie

Bussiere, Lauren, Jeremy Elliott, and Eric Schroeder

[275] *Indigenous Data Sovereignty at the Paint Rock Archaeological Project*

The Paint Rock Archaeological Project is an ongoing community-based investigation led by members of the Comanche Nation, the Lipan Apache Band of Texas, and Coahuiltecan tribes. Working with archaeologists from the University of Texas's Texas Archeological Research Laboratory, researchers from Abilene Christian University, and members of the local community of Paint Rock, Texas, Tribal members and elders have advocated for the respectful investigation of a site of historic and spiritual significance to their communities, the Paint Rock petroglyph site. As the project planned its third year of work, it became apparent that a strategy for long-term collections care and data management was necessary to preserve the information generated by archaeological work at the site. In this paper, we discuss how by centering community values and goals while bringing in professional expertise, the project can ensure the value of the investigation data and the safety of recovered cultural items for future generations while preserving connections to ancestral practices.

Bussiere, Lauren [275] see Kitch, Katelyn

Bustamente, Eduardo [45] see Scherer, Andrew

Butler, Amanda, and Jeff Kruchten

[102] *Weaving Stories and Histories: Strands of Memories, Stories, and Dirt Archaeology*

Timothy R. Pauketat is a storyteller and a story maker. Throughout his distinguished career, Tim connects big histories with robust data through approachable storytelling. As a story maker, Tim entangled a rather large, and most often, very odd cast of characters who each have their own stories and histories with and about him. Amanda was drawn to Tim's work first through his work as a story maker before learning more about his storytelling. But it was his push into Cahokia's religious foundations by exploring the periphery that hooked her. For Jeff, his relationship spans states and decades, beginning as an undergraduate in New York. Tim inspired and encouraged our own investigations into Cahokia's religious foundations, drawing from Indigenous theories and oral histories. Specifically, building on Tim's and Thomas Emerson's research connecting archaeological aspects of the origins of a Mississippian religious movement to ancestral Caddoan peoples. The people of Cahokia have many living descendants throughout much of the Plains, Southeast, and Midwest today. Our work draws from northern Caddoan, particularly Skidi Pawnee, histories as recounted to James Murie at the turn of the twentieth century to examine a broader Cahokian religious movement, connecting oral histories with dirt archaeology.

Butler, Amanda [216] see Cossin, Zev

Buvit, Ian (WestLand Resources), Jennifer Hushour (WestLand Resources), Colin Christiansen (WestLand Resources), and Tyler McWilliams (WestLand Resources)

[183] *Formation Processes at Lawson Hills, a Turn-of-the-Century Mining Community in King County, WA*

CRM data recovery projects offer important opportunities to address both compliance and research questions. In 2024, a team of WestLand archaeologists excavated a portion of a turn-of-the-century mining town in southwest Washington State, focusing on two of 40 features believed to be houses and four of 20 features believed to be their privies. This paper describes data recovery efforts at Lawson Hills, focusing on cultural and natural formation processes at the site. Formation of these features began in the early 1900s when the ground was cleared of trees and pads were leveled for houses. Privy pits were dug into Pleistocene gravel and lined with wood. Each privy was sizeable enough to serve two community households separated by their property lines. Residents seemingly used them as both garbage dumps and privies. In 1910, a mining

disaster effectively closed the town and terminated use of the features. Since then, a variety of natural processes, especially fluctuating groundwater and soil formation, and unnatural processes, like looting, shaped what WestLand archaeologists excavated in 2024.

Buxeda I Garrigós, Jaume [89] see Pujals Blanch, Sonia

Byambatseren, Batdalai [79] see Wolin, Daniela

Byers, David (Utah State University), Ryan McGrath (Utah State Historic Preservation Office), Peter Yaworsky (Aarhus University), Theresa Popp, and Jack Broughton (University of Utah)
[126] *Ecosystem Control and Costly Signaling: An Integrated Analysis of Holocene Hunting in the Bonneville and Wyoming Basins, USA*

We explore and integrate different currencies that may underlie large-game hunting to guide a trans-Holocene analysis of variation in artiodactyl utilization using archaeofaunal datasets from predominantly open-air sites from the Bonneville and Wyoming basins. The available empirical data continue to suggest that artiodactyls yield consistently higher return rates than lagomorphs allowing us to leverage predictions from both the prey choice and energetic risk-gain models that the relative importance of artiodactyl hunting should scale closely with climate-based change in their abundance on the landscape. We document with modeled climate data that seasonal variables correlated with the relative frequency of artiodactyl hunting, but that summer temperature had a significant overriding effect in both regions. Controlling for the negative relationship between summer temperature and artiodactyl abundances, we then document enhanced artiodactyl hunting in general and bison more specifically during both the Fremont period in Utah and the Middle Holocene Housepit phenomenon in SW Wyoming. These results are consistent with a costly signaling hypothesis and the unique socio-ecological conditions of these contexts. Thus, climatic variation and its influence on artiodactyl abundances drives the overall trajectory of Holocene large-game hunting variation but measurable and more subtle influences of costly signaling are also detected.

Byers, David [64] see Maughan, William

Byers, David [372] see Popp, Theresa

Byers, David [196] see Welker, Martin

Byram, Jennifer (University of Arizona)

[293] *Taking a Different Strand: Approaching Perishable Collections in Dissertation Research*

Perishable material study often presents significant challenges in the form of preservation bias and loss during collecting practices. However, perishables are often even more difficult to study due to their frequent association with mortuary contexts and sacred sites in regions and contexts where their preservation is otherwise limited. This paper will present the research design process of an archaeology PhD student specializing in textiles and basketry of the US Southeast. Through frequent consultations and relationship building with Southeast Tribal Nations and Indigenous artists, the presenter has worked to engage with a topic that is relevant to the current interests of descendant communities while respecting the challenges presented by museum collections in the United States and Europe that often have poor provenance. This dissertation research addresses materials that are largely non-archaeological, coming from 1700 to 1830, using archaeological theories and methods to situate objects within the broader perishable material record from the US Southeast, both pre- and post-European contact. The presenter discusses how the project contributes to museum stewardship of perishable materials and how data will be integrated into reference materials and outreach with Southeast Indigenous artists.

Byrd, Rachael

[321] *Processing Change: Comparing Ancestral Secondary Cremations from the Phoenix Basin Preclassic and Classic Periods*

[WITHDRAWN]

Byrne, Emma [125] see Merchant, McKenzie

Caballero, Margarita (UNAM)**[290]** *Climatic Variability during the Classic to Postclassic Transition in Central Mesoamerica*

Central Mesoamerica has several lacustrine basins that stand out as particularly sensitive to moisture fluctuations. The lacustrine sediments they preserve represent good records of hydroclimate variability, which in this region are interesting because they can give a valuable paleoclimatologic background for the analysis of human–environment interactions during important cultural transitions such as the Classic to Postclassic. Dry climatic conditions during the late Classic (AD 600–900) have been associated to cultural demise around AD 900–1000, well documented around the Maya area. We present results from four multiproxy records that included biologic and geochemical data. The sites are located across central Mesoamerica, from the eastern lowlands of the Gulf of Mexico (Lago Verde), across the central highlands (S. Cruz Atizapán and Coatetelco), and western lowlands near the Pacific (Santa María del Oro). A series of dry events were marked by low titanium and changes in biological associations that pointed to shallower lake conditions. Dry conditions were present at all the sites during the Late Classic (AD 700–1000), giving a wider regional perspective of generally drier climates over most of Mesoamerica during this transition time.

Cabello, Gloria [199] see Sabo, Allison

Cabello, Gloria [117] see Torres, Christina

Cabrera, Kevin [321] see Teja, Melissa

Cabrero-Miret, Ferran (Universidad Estatal Amazónica)**[157]** *Settlement Pattern and Plant Use in Río Chico and Colina Boayacu Puyu, Upper Valley of the Pastaza River*

Río Chico and Colina Boayacu Puyu are two archaeological sites in the upper basin of the Pastaza River, in present-day Ecuador, that help to understand how the ancient inhabitants of the Upper Amazon lived. Río Chico is important for having unique crops in the basin since Regional Development, and for being today the oldest mountain village in this area, about 2000 years BC, inserting it in the same way in the Formative. Furthermore, the fact of having Puruhá ceramics can show long-distance exchanges between the ends of Regional Development and the Integration period. Close to the latter, the so-called Hill, or “Tola Boayacu Puyu,” on the banks of the Puyo River, a tributary of the Pastaza, is of equal importance: with diverse ceramics associated with different periods, and with remarkable paleobotanical remains, it confirms a type of use of land and a certain Amazonian “urbanism” that was already announced by nearby sites like Té Zulay. Both Río Chico and Boayacu Puyu Hill are framed in the idea of Amazonian monumentality, especially in the edge of the jungle, and of a common settlement pattern in the Upper Pastaza.

Cadieux, Agathe (Université de Montréal), Julien Riel-Salvatore (Université de Montréal), and Claudine Gravel-Miguel**[156]** *The Evolution of Osseous Technology during the Neolithization Process in Liguria, Italy*

Liguria, Italy, offers an ideal setting to study how hunter-gatherers adapted to the climatic, social, and political changes of the transition to the Neolithic. Additionally, Liguria is an interesting region to study this question since it was one of the first regions of the Western Mediterranean to be colonized by Neolithic agriculturalists and thus likely played a key role in the cultural transmission of new technologies westward in Europe. However, research on the Neolithic transition in Liguria is still scarce. A comparative study of the bone industry of the sites of Arma di Nasino and Arma dello Stefanin allows us to describe the use and production of bone tools. This provides insight into the daily activities of the populations of this region during this critical social and climatic transition, in addition to providing clues about the social organization and the knowledge of early Neolithic populations, who used new technologies to navigate the changing world in which they lived. These tools reveal shifts in lifeways and subsistence, which reflect the nature of social and technological changes during this pivotal period in the history of our species.

Caine, Alyson [117] see Torres, Christina

Cajigas, Rachel

[101] *A Coastal Landscape of Change: Late Holocene Sea-Level Fluctuations and Estuarine Resource Availability during the Early Woodland Period at the Creighton Island Shell Ring Site (9MC87), Georgia, USA*

Creighton Island shell ring (9MC87) is a crescent-shaped shell midden, approximately 40 m in diameter, that was constructed by Native Americans participating in multiseasonal, cooperative, and sustainable shellfish mass capture and fishing techniques during the Late Archaic period (3000–1000 BC). Recent archaeological investigations revealed that there were two discrete occupations at this site: the first was during the Late Archaic when people constructed the shell ring, and a second occupation, during the Early Woodland period, when people significantly modified the site by depositing a thick lens of shell midden material over the interior portion of the site. Radiocarbon dating and ceramic chronologies help characterize the reoccupation of the site and articulate it to changing sea levels and availability of estuarine resources throughout the late Holocene. The results of this research suggest that although the tradition of shell midden building had largely ended elsewhere in this region due to lowered sea levels and limited availability of marsh resources such as oyster beds, people continued this practice on Creighton Island, demonstrating the resiliency of these cultural traditions during times of environmental change.

Cajigas, Rachel [169] see Dober, Joseph

Cajigas, Rachel [240] see Tranberg, Austin

Calderón Vega, Alberto [56] see Fujita, Harumi

Califano, Matthew (University of Colorado, Boulder), Sean Kosman, Annabelle Lewis (University of Colorado, Boulder), Michelle Slaughter (SRI), and Lauren Hosek (University of Colorado, Boulder)

[276] *Layering Data, Building Connections: The Nederland Cemetery Research Project*

This paper presents preliminary results from ongoing archaeological and archival research on the historic Nederland Cemetery. With the first recorded burials dating to the early 1870s, the Nederland Cemetery has long served the residents of Nederland, Colorado, from the town's mining and milling origins to its modern role as a gateway to mountain recreation. The project has brought together professional archaeologists, the Nederland Area Historical Society (NAHS), students from area universities, and local volunteers and businesses. In consultation with NAHS and local officials, we identified two areas as major community needs: a comprehensive map of the cemetery with supporting documentation, and an exploration of possible unmarked graves. We discuss ongoing archival research and community outreach, and share the results thus far of pedestrian, geophysical, and canine surveys investigating potential unmarked graves. We emphasize the potential of GIS in cemetery research as an analytic and communication tool, highlighting our team's use of mapping software to layer datasets from different surveys and the development of a searchable map of the cemetery for online access. This project builds on local knowledge and care networks, aiming to further link past and present communities through data sharing and collaboration.

Calistri, Hannah, Rebekka Knierim (SWCA Environmental Consultants), Marion Dowd (Atlantic Technological University, Ireland), Rene Vellanoweth (California State University, Los Angeles), and Fiona Beglane (Atlantic Technological University, Ireland)

[65] *Through the Quern Stone: A View into Early Medieval Subsistence and Ceremonial Practice at the Monastic Site of Disert*

Disert—meaning a hermitage or a place apart—is a multiphase early ecclesiastical site that has served as a sacred place to the surrounding communities of County Donegal, Ireland, since at least the early medieval period. Today, it remains a site for spiritual pilgrimage, or *turas*. With the support of the local community, four seasons of excavation by Atlantic Technological University, Sligo, and California State University, Los Angeles, have investigated multiple ceremonial features at Disert, including a holy well, a *cillin*, or children's graveyard, and an enigmatic stone arch enclosure. Local tradition states that Saint Colmcille (St. Columba) founded the monastic settlement at Disert in the sixth century AD, when he looked through the central perforation of a quern stone and blessed all the land he could see. This poster presents preliminary results and interpretations of two additional rotary quern stone fragments excavated at Disert, analyzed using 3D

scans, reconstructions, and comparative data. Exploring the domestic and social functions of quern stones will improve our understanding of subsistence and ceremonial practices, and everyday life at Desert.

Callaghan, Michael (University of Central Florida), Jeffrey Ferguson (University of Missouri), Whitney Goodwin (University of Missouri), and Francisco Estrada-Belli (Tulane University)

[169] *Chemical and Mineralogical Paste Compositional Analysis of Preclassic Pottery from the Holmul Region, Guatemala*

In this paper we discuss the results and implications of a study that employed instrumental neutron activation analysis (INAA) on a sample of sherds from Late and Terminal Preclassic period serving vessels recovered in excavations from the Holmul region, Guatemala. Analysis revealed three primary paste groups, each associated with specific elemental concentrations and petrographic characteristics (analyzed in a supplemental study). Group 1 was characterized by high strontium levels and associated with orange ceramics. Group 2 contained ash temper with low calcium and chromium, while Group 3 had high calcium and low strontium, linked to red ceramics. The data suggest that the majority of Late and Terminal Preclassic period serving vessels were produced within the Holmul region by multiple units using relatively unrestricted paste recipes. However, some pottery in the study may have been produced outside the region using more restricted recipes, highlighting a complex ceramic production and exchange system during the Late and Terminal Preclassic periods. Findings will be discussed in relation to recent chemical and mineralogical analyses of Preclassic pottery at other lowland sites.

Callaghan, Michael [65] see Batres, Kimberly

Callaghan, Michael [169] see Moot, Dana

Callisaya Medina, Luis [65] see Blom, Deborah

Calvo Gómez, Jorge (Museum of Cultural History, University of Oslo), Almut Schülke (Museum of Cultural History, University of Oslo), and Inger Marie Berg-Hansen (Museum of Cultural History, University of Oslo)

[345] *Technical Systems in the Atlantic European Seashores: A Cross-Regional Perspective on the Stone Knapped Tools through Use-Wear Analysis*

The occupation and exploitation of coastal environments have been long discussed by archaeologists as a process in which the technology would have played a major role. While many early Holocene contexts along the Atlantic European seashores have delivered data related to the exploitation of marine resources, the functioning of the technological system remains rather poorly understood. These Mesolithic traditions in stone tool knapping are known in large geographical areas, both inland and along Atlantic seashores. Indeed, the use of tools might reflect technical traditions specific to living a coastal way of life, probably connected to the exploitation of the marine resources. However, very few functional analyses have been carried out to date. The ongoing study presented here seeks to deepen the characterization of the technical system of coastal populations through the functional study of the knapped tools from two European coastal areas: from the seashores of southeast Norway and the Bay of Biscay. Analyses of use wear in the stone knapped tools will bring a unique analytical frame to compare the technical traditions in both regions. The objective is to address the question of a potential specificity of techniques in the coastal sphere of Mesolithic hunter-gatherer groups.

Camacho Márquez, Uriel [349] see Tsukamoto, Kenichiro

Cameron, Asa (Yale University)

[278] *The History of Animal Sacrifice in Mongolia*

Animals fill numerous roles within the broader dynamic of human-animal relationships; from prey to pet, from mode of transportation to guide, from source of secondary products to guard, and numerous others. In archaeology, one of the most readily identifiable of these roles is sacrificial victim. Animals are used to consecrate buildings, to provide religious offerings and feasting opportunities, and companionship and sustenance for humans crossing into the afterlife. In Mongolia, sacrificed animals have been part of the

archaeological record since at least the Bronze Age (3000–1000 BC) and are a common component in mortuary contexts. Despite the frequency of finds, the evolution and significance of this phenomenon in Mongolia remains poorly understood. This paper charts diachronic changes in animal sacrifice through zooarchaeological and mortuary data from the Bronze Age onward, with a specific focus on what shifting patterns in animal sacrifice can tell us about alterations in human organizational complexity and ritual behavior across Mongolia and the Eurasian steppe.

Cameron, Asa [278] see Carolus, Christina

Cameron, Catherine

[113] *The Role of Captives in Status-Striving in Trans-egalitarian and Chiefdom Societies*

Ambitious leaders in trans-egalitarian and chiefdom level societies used a variety of approaches to achieve control over other people and the material wealth in their society. They organized or participated in raids and warfare, they led efforts to defend against raids of other groups, they hosted competitive feasts, and they put on elaborate ritual performances, which showed their power in communicating with the gods. Often overlooked is the role that captive people, taken during raids, played in these activities. Captives in trans-egalitarian and chiefdom-level societies were most often women and children, and these individuals played important roles in enhancing the status, wealth, and power of the individuals (generally men) who held them. This presentation takes a cross-cultural look at the role captives played in the efforts of aspirational leaders to build prestige and wealth. They created “wealth-in-people,” they created material wealth by laboring in fields or craft industries, they served as sacrificial gifts to the gods, and much more. Ethnohistoric, ethnographic, and historic accounts, primarily from North and South America, from times just after European contact are used to illustrate the ways ambitious people in trans-egalitarian and chiefdom level societies used captives to enhance their status.

Cameron, Catherine [55] see Hurst, Winston

Campaña Valenzuela, Luz Evelia [349] see Tsukamoto, Kenichiro

Campbell, Matthew [173] see Nims, Reno

Campbell, Renae [337] see Popper, Virginia

Campbell, Renae [275] see Warner, Mark

Campbell, Wade

[110] *Dendroarchaeological Explorations of the Diné-Hispanic Raiding Relationship in Eighteenth- and Nineteenth-Century New Mexico*

Accounts from Spanish- and Mexican-era New Mexico have long emphasized the central role that raiding and captive-taking played in defining the colonial relationship with the Diné (Navajo) during the eighteenth and nineteenth centuries. Much of the research to date has focused on understanding how New Mexicans experienced this history, including the impacts of Navajo “depredations,” the mounting of punitive military responses, and how acculturated Athabaskan (i.e., Navajo and Apache) slaves were incorporated into the multiethnic Genízaro communities that guarded the New Mexican frontier. However, these insights into the social, political, and economic impacts of Diné-Spanish raiding on colonial New Mexican society beg the question of how Diné communities experienced the same types of activities. While Diné oral histories clearly document the occurrence of raids by/of the Naakai (Hispanic New Mexicans) prior to the US-Navajo Treaty of 1868, we know very little about the frequency and intensity of such events, nor how Diné communities responded on a broader societal scale. This paper discusses the results of recent dendroarchaeological fieldwork at a series of Navajo defensive sites in the southern San Juan Basin to date and better understand the Diné side of the dynamic eighteenth- and nineteenth-century New Mexican raiding relationship.

Campbell, Wade [103] see Beach, Isabel

Campos Díaz, Lyla Patricia**[159] *Ethnography as a Methodological Alternative for Heritage Understanding in the Maya Highlands***

Heritage conservation and restoration practices focus primarily on the physical intervention of the object. Changes in the fabric are associated with a loss of information and knowledge that break a tangible link with the past; thus, restorers focus on stopping those changes from happening and maintaining the physical and chemical stability of the object to ensure its permanence for the future. However, other points of view and meanings associated with heritage are only sometimes considered or explored by professional restorers, such as those from the communities that currently use that heritage. In order to better understand these meanings, an ethnographic methodology approach can be an alternative. Through the case study of the Tojolabal indigenous community in the Highlands of Chiapas, in which the Catholic traditional feasts get intertwined with the significance ascribed to the Postclassic archaeological site of Tenam Puente, different meanings were discovered, proving that there is much more to understand from the objects if the communities are given the possibility to share their stories. This case study follows an ethnographic approach in which the community's knowledge is the critical component to deepen our understanding of their cultural heritage.

Campos-Hernandez, Cinthia (University of Wyoming), Hunter Claypatch, and Cristina García-Moreno (INAH Sonora)**[124] *Gradual Change in a Transitional Time: Comparing Thirteenth- and Fourteenth-Century Households in Sonora's Altar Valley***

The Trincheras tradition spanned north-central Sonora and extreme southern Arizona from approximately 400 to 1450 CE. Since the 1970s, archaeologists have argued that dramatic transformations around 1300 CE impacted the Trincheras heartland. This transformation, known as the Realito phase, included the migration of Papaguerían Hohokam into the region, the adoption of new cultural practices and trade networks, and an end to local decorated ceramic manufacture. This poster compares ceramic, paleoethnobotanical, and ground and flaked stone tool data from dated pithouses at two Altar Valley sites, El Poporo and La Potranca. We use this data to argue that migrations into the Altar Valley occurred gradually over multiple generations. The late thirteenth to early fourteenth century was also a dynamic period for experimentation with new foods and cultural practices. This study contributes to the growing literature on migration studies across the late precolonial Southwest/Northwest. Furthermore, this household-scale comparison offers a much-needed, nuanced, perspective into daily life within the Trincheras heartland.

Campos Martinez, Miriam [64] see Duenas-Garcia, Manuel

Cannon, Kenneth (Cannon Heritage Consultants Inc.), Molly Cannon (Utah State University), and William Eckerle (Cannon Heritage Consultants Inc.)**[369] *A Landscape Approach to the Development of Minimally Invasive Methods for Site Assessment in Eastern Wyoming***

Camp Guernsey's North Training Area (NTA) is located within the Hartville Uplift of eastern Wyoming, an area rich in archaeological resources, particularly extensive formations of toolstone-quality raw materials. Because of the potential for live training exercises to impact cultural resources, the Wyoming National Guard proposed the development of an experimental testing protocol for selected sites using minimally invasive methodologies that included geophysics and small-diameter auger probes. Minimally invasive testing was proposed for sample areas within a range of site types from a variety of landforms to assess the National Register of Historic Places significance of these areas within a landscape framework. The project results assess the utility of nested geophysical survey methodologies and flighted, hollow-stem, and hand-bucket auger techniques to test linkages between geomorphic settings and archaeologically preserved materials to answer questions about past human behavior in this dynamic landscape.

Cannon, Molly (Utah State University), and Anna Cohen (Florida State University)**[95] *Creative Mitigation: Historic Preservation Strategies from the Water Heritage Anthropological Project***

After nearly six decades of American compliance archaeology, archaeologists have developed a robust tool set for addressing historic preservation, including documentation through archival research, archaeological

excavation, ethnography, and National Register of Historical Places nominations. Other tools construct public education programs that raise awareness of heritage resources and their importance within communities. This paper reflects on best practices for historic preservation and meeting the mission of the agency, the academy, and the discipline using the Water Heritage Anthropological Project as a case study. In partnership with the Bureau of Reclamation, the WHAP investigates human water relationships in the arid West. We recognize that water shapes our institutions and communities, creating landscapes and important parts of our cultural heritage. A long-term perspective is valuable for highlighting past techniques for managing water, but equally important are conversations with current water users that can pair past and present water heritage. We offer examples from the project that use archaeological, geospatial, ethnographic, and archival data for investigating how water has shaped communities in the American West. As part of the research process, we create widely available products to educate and collaborate with the public about this history, deriving insight for contemporary water management.

Cannon, Molly [369] see Cannon, Kenneth

Cano, Martha [96] see Lopez, Carlos

Canuto, Marcello (MARI/Tulane University), Tomas Barrientos (Universidad del Valle de Guatemala), and Analy Montenegro (Centro de Investigaciones Arqueológicas y Antropológicas, UVG)

[159] *Lidar and Community-Engaged Archaeology in the Maya Biosphere Reserve*

We present the outline of the first project to systematically train members of various community-based forestry concessions in the Maya Biosphere Reserve (MBR) to conduct archaeological resource management using modern technology. We plan to train community members to use lidar data, digital maps, and advanced survey methods to record archaeological sites in two different forestry concessions. With these tools, local stakeholders will be able to accurately and efficiently record cultural resources in their concessions. Aside from boosting our archaeological understanding of this understudied portion of the MBR, this training will also allow for local communities to examine and report on the amount and impact of looting on the cultural resources located in their concessions. This partnership of archaeologists, government officials, and local stakeholders is unique to the MBR and will result in a protocol for long-term preventive protection measures, as well as the formation of a cadre of technicians trained to register and evaluate cultural heritage. This project is designed to be scalable and so transferable to other forest concessions in the MBR. Thanks to their archaeological technical training, this project aims to make members of community forestry concessions partners and allies with government institutions in charge of cultural management.

Cap, Bernadette [199] see Yaeger, Jason

Capriles, José (Pennsylvania State University), Calogero Santoro (Universidad de Tarapacá), Daniela Valenzuela (Universidad de Tarapacá), Eliana Flores Bedregal (Bolivia), and Francisco Rothhammer (Universidad de Tarapacá)

[182] *Findings of Neotropical Parrots in Archaeological Contexts of the Atacama Desert, Northern Chile*

Throughout the Andes including its desert coast, the colorful feathers of tropical birds brought from Amazonia were important markers of social prestige and relational wealth for political and religious elites during precolumbian times. In this paper we present a systematic review of the findings of specimens of tropical parrots and macaws recovered from archaeological sites in the Atacama Desert of northern Chile. Because the distribution of many of these birds is restricted to the tropical forests east of the Andes, they were likely imported into the area by means of complex long-distance networks of interaction. Archaeometric analyses of these findings suggest that it was during the Late Intermediate period that most of these birds were transported, that many arrived alive, and that they likely originated from different locations, all of which highlight the fluidity, scope and complexity of precolumbian transregional interaction networks.

Capriles, José [39] see Correa Lau, Jacqueline

Caraballo-Santiago, Angelica (University of California, Santa Barbara), Emily Zavodny (University of Central Florida), and John Krigbaum (University of Florida)

[308] *Insights into Faunal Identification and Collagen Preservation Using ZooMS at Otočac-Stari Grad and Piplica from Prehistoric Croatia*

The transition from the Copper to the Bronze and Iron Ages is shown through changing sociopolitical and economic organization reflected in faunal material. With ZooMS (Zooarchaeology by Mass Spectrometry), fragments unidentifiable through morphological analysis can be identified through chemical analysis. ZooMS was applied to 34 samples collected from Otočac-Stari Grad ($n = 27$), a Copper Age site with poor preservation, and Piplica ($n = 7$), a Bronze-Iron Age site with good preservation in Croatia. The aim is to compare the level of identification possible through ZooMS given differing levels of preservation. From the 34 samples, 31 produced identifiable spectra (91.2%) and the level of identification improved in 25 samples. Samples from Otočac-Stari Grad had a higher fail rate and lower level of ZooMS identification compared to Piplica. Due to preservation of the material, the C, E, G, and G peptides were missing from most spectra. While identification can be made without these peptides, the C and G peptides are important for differentiation between goat (*Capra*), sheep (*Ovis*), and deer (*Cervidae*). The B, P2, and D peptides were the most abundant and resistant to weathering. Future research will integrate ZooMS into larger faunal studies to supplement morphological analysis of animal husbandry.

Caraher, Bill [184] see Frey, Jon

Caramanica, Ari

[172] *The Absence of Evidence: Erasure of Prehispanic “Place” in Early Colonial North Coastal Peru*

The definition of “place” in early colonial north coastal Peru, was based, in part, on Iberian concepts of what constituted “good” land. Ethnohistoric analysis of archival evidence from the period reveals a friction between two distinct worldviews around land, water, ownership, labor, and likely, place. To arrive at a better understanding of both indigenous prehispanic and Spanish colonial concepts of place, this paper argues that it may be productive to ask, what kinds of prehispanic places were erased in the course of the establishment of the colonial state? By examining landscapes with evidence of prehispanic agricultural development and comparing these with early Spanish documentation, maps, and water censuses, it is possible to begin to tease out the fundamental differences underlying each society’s relationship to the north coastal environment.

Carballo, David (Boston University)

[289] *The Legacy of Deborah Nichols to Understanding the Formative to Classic Transition and Beyond in the Teotihuacan Valley*

Over her distinguished career, exceptional in both service and scholarship, Deb Nichols made enduring contributions to the archaeology of three major eras of precolonial central Mexico—the Formative, Classic, and Postclassic periods. Her research within the Teotihuacan Valley in particular spanned the transition to early villages, the intensification of agriculture through canal irrigation in Classic period Teotihuacan, and the Aztec period craft and trade center of Otumba. In this paper I engage with some of these aspects of Deb’s legacy to central Mexican archaeology with a particular focus on early Teotihuacan and processes of urban growth that saw formerly more rural areas develop into urban districts at Tlajinga and other parts of the city’s periphery. I discuss the transition from agricultural fields to residential zones and the eventual replacement of earlier housing with apartment compounds and elevated platform complexes.

Cardarella, Charlotte [65] see Kohl, Madeleine

Carenti, Gabriele [345] see Theodoropoulou, Tatiana

Carino Anaya, Tanya, and Ashuni Emmanuel Romero Butrón (Instituto Nacional de Antropología e Historia)

[199] *Digital Reconstruction of the Structure 12, El Meco, Quintana Roo*

The Proyecto de Investigación y Conservación “El Meco” seeks to use digital technology to preserve and create a digital recording of the previous interventions and the new activities that were related to the site. As

a result of those digital recordings, we elaborate a proposal on the architectural and decorative appearance of Structure 12 of the archaeological site by combining 3D point cloud models of the structure with 2D models of artwork and the topographic map made by other archaeologists who worked on the archaeological site. The digital reconstruction included (1) 2D artwork of the building, which identifies the architecture of the region (Costa Oriental; (2) use of lidar (this is just a preview of the use of the technology); (3) the use of highest resolution photogrammetry of building (i.e., columns, walls, colors, textures), which day by day are losing by erosion and other natural and biological factors; and (4) the generation of point clouds from the 3D data of the building. The creation of this 3D model will help scholars and tourists by providing a visual tool to generate more questions and to clarify a little bit more about how the life during the Postclassic period was.

Carlson, John, and John Hoopes (University of Kansas)

[378] *The Bourne Identity: A Unique Middle Formative Jade Figure from Río Pesquero, Veracruz: Rubber Ball Game Player and/or Lapidary*

A jadeite figure in the John Bourne Collection of the Walters Museum of Art, Baltimore, MD, has previously been identified and displayed only as a representation of an Olmec ballplayer. However, an examination of its sculptural and iconographic details reveals that, rather than representing a ballplayer, this carving is actually a representation of a lapidary artisan holding and adorned with the tools and products of his trade. This unique object may represent one of the first self-portraits of an Olmec lapidary artisan. This paper will present a reinterpretation of this object with a discussion of what we know about its provenance and its possible context. The object's new interpretation will draw on information about Olmec lapidary artisans and Olmec ballplayers and will undertake to situate this object within a relevant comparative cultural context.

Carlson, Meredith (University of California, Davis), Tamara Dogandžic (MONREPOS Archaeological Research Centre and Museum for Human Behavioural Evolution), Brendan Barrett (Max Planck Institute of Animal Behavior), and Nicolas Zwyns (University of California, Davis)

[234] *The Camera and the Trowel: Two Approaches to Tool-Using Primates*

Primate archaeology is a burgeoning area of inquiry that sheds light on the technological aspects of primate behavior and its implications for human evolution. However, primate archaeology also offers opportunities for the validation of archaeological proxies through actualistic study. Among living primates, behavior and site formation can be observed concurrently, offering insight into both phenomena. White-faced capuchins in Coiba National Park, Panama habitually use stone pounding tools, which produces a material record of hammerstones, anvils, and debris from processed foods. In 2022 and 2023, we collected linked behavioral and archaeological data from two capuchin tool use sites on the island of Jicarón, Panama. We monitored activity at the sites through video-based observation, producing a high-resolution behavioral dataset. During the same period, we monitored site formation through the accumulation of artifacts and food debris at the sites. Here, we present a comparison of these two approaches to primate stone tool use, comparing archaeological proxies of site activity with direct observations. These data provide novel perspectives on the application of archaeological methods to primate contexts and the interpretation of excavated collections.

Carmody, Stephen (Troy University), Gabrielle Purcell (Troy University), Simonetta Menchelli (University of Pisa), Madisen James (Troy University), and Gage Allen (Troy University)

[193] *Archaeobotanical and Faunal Remains from the Roman Harbor Vada Volaterrana*

In this poster we present updated botanical and faunal data and interpretations from the ancient Roman harbor of Vada Volaterrana, located in the modern province of Livorno, Italy. The harbor was supported by a network of structures immediately surrounding the port at Vada's San Gaetano site. A 2015 GPR survey identified a series of rectangular buildings of unknown purpose in the southern sector of this site. In 2019, a collaborative project between the University of Pisa and Troy University began investigating the cultural activity at San Gaetano's buildings I, L, and M, that included the recovery and identification of plant and animal remains. Samples collected during the 2017 thru 2024 field seasons are included in this updated presentation. Paired with architectural and artifactual data, our findings help uncover shifts in both subsistence patterns and cultural enterprises at this building complex.

Carmody, Stephen [101] see Strawn, James

Carney, Molly, Andrew Gillreath-Brown (Yale School of the Environment), and Shannon Tushingam (California Academy of Sciences)

[380] *Women and Menarche Lodges: Archaeological Evidence of Coming-of-Age Structures on the Columbia-Fraser Plateau*

Women's or menarche lodges are nondomestic structures noted within North American ethnographies as the places where a young girl spent her first menses, learning from the women around her as she moved into the next life stage. On the Columbia-Fraser Plateau, our previous work identified a small, burned structure with few artifacts, rubified sediment deposited above the structural remains, with a second fire lit atop. We interpreted the multiple burning and depositional episodes as a menarche lodge; during symbolic and ceremonial acts, people used fire as a transformative agent to shift the social status of an individual through the physical transformation of the material world. Here, we use a regional database of archaeological structures to assess the geographic spread and temporal depth of small, intentionally burned architectural features. We argue that additional examples of burned structures with comparable signatures are the remains of similar coming-of-age events, and that these structures were common in the past. Our findings suggest that these burned structures were integral to the cultural practices of Plateau communities, serving as physical manifestations of significant life transitions. This work highlights the importance of recognizing and interpreting such features to reframe and respect past social and ceremonial practices.

Carolus, Christina (Yale University), Asa Cameron (Yale University), Jessica Hendy (University of York), Joannes Dekker (University of York; University of Copenhagen), and Oliver Craig (University of York)

[278] *Unearthing the Origins of Agriculture on the Mongolian Steppe: New Data and New Perspectives*

Research into agricultural adoptions and dispersals of major domesticated plant taxa across the ancient Eurasian steppe has gained significant momentum in the past decade. Archaeobotanical data have clarified the antiquity and breadth of these processes, revealing the contours of agricultural developments throughout the Bronze and Iron Ages and linking them to a broader trans-Eurasian system of dynamic long-term social, economic, and biogeographic interactions. The prehistory of agriculture in the easternmost steppe—the Mongolian steppe—nevertheless remains an open question, persistently deemed an unexplained “outlier.” This paper addresses our evolving knowledge of the origins and development of agriculture on the Mongolian steppe and considers a range of new interdisciplinary data. Rather than isolation from the changing subsistence economies surrounding it, new archaeobotanical and biomolecular data suggest mosaic patterns of early agricultural participation on the Mongolian steppe that cohere temporally and spatially with better documented areas of the Eurasian steppe and Inner Asia. We posit that Mongolia's long-standing perception as an outlier to supraregional prehistoric agricultural developments reflects long-term research trends rather than prehistoric realities. Finally, we advocate strongly for standardized inclusion of archaeobotanical research design and sampling on excavations in the Mongolian steppe region in order to resolve ongoing research disparities.

Carolus, Christina [167] see Kalodner, Jacob

Carpenter, John [189] see Krug, Andrew

Carpenter, John [300] see Pailes, Matthew

Carpenter, Lacey (University at Buffalo), and Pedro Ramon Celis

[269] *Drafting Residential Architecture: Changes in Zapotec Residences from Formative to Postclassic Oaxaca*

This article will explore the origins and development of shared conventions in Zapotec residential architecture by synthesizing research from the Early Formative to the Late Postclassic periods in Oaxaca. Archaeologists in this region have contributed significantly to the methods for studying residential spaces and the theorizing of the role of households in broader sociopolitical change. This study examines the changes, influences, and traditions in the strategies of Zapotec residential spaces over time by comparing architectural features, and spatial organization from two case studies: El Palenque, a late Formative period capital center,

and Guiengola, a fortified city in the Isthmus of Tehuantepec occupied right before European contact. Both are dense, urban settlements with defensive concerns, allowing for an assessment of the durable, shared conventions in Zapotec residential space at the household and neighborhood scales. This research offers a long-term perspective on the sociopolitical dynamics, economic activities, and community life of Zapotec households.

Carpenter, Lacey [228] see Escalante Zarco, Angela

Carpenter, Michelle (University of Texas, San Antonio)

[302] *Dietary Differences of Hunter-Gatherers and Agriculturalists: A Temporal Investigation at the La Playa Site in Sonora, Mexico*

The examination of maize integration into Early Agricultural populations has resulted in a standard anthropological model to be developed concerning the expected trajectory into maize reliance. Exploring these expected changes through multiple datasets (e.g., land management, stable isotope analysis, and bioarchaeological evidence) at the site of La Playa in Sonora, Mexico, presents the opportunity to analyze a skeletal population that is representative of each phase of the Early Agricultural period. As agricultural practices are known to be revolutionary to prehistoric people, this presentation will highlight within one population the subtleties of dietary changes as the population changed from hunter-gatherer practices to agriculturists during the Early Agricultural period. This presentation seeks to compile additional stable isotope results for the interpretation of how Early Agricultural behavior at La Playa is representative of larger developments throughout the Greater Southwest through gender differentiation, mobility, and the transition to agricultural dependence.

Carpio, Edgar (Universidad de San Carlos)

[236] *Comparative Study of Obsidian Cores Technology from Different Sources in the Mayan Area*

The cores for the production of prismatic obsidian blades have different sizes and production techniques in each of the obsidian sources of the Mayan area. Therefore, a comparison is made to find out if these differences are related to the type of knife that is intended to be produced and also to the trade of these artifacts because the size and weight could be due to aspects of long-distance transportation.

Carr, Christopher [52] see Dunning, Nicholas

Carr, Christopher [239] see Vazquez-Alonso, Mariana

Carr, Philip (University of South Alabama), and Sarah Price (Wiregrass Archaeology)

[108] *Metamodern Archaeology and Mobile Bay Homelands: Translating Past, Present, and Future*

Archaeology at the crossroads accurately characterizes our present circumstances, if one takes crossroads to represent multidivergent, future paths with some leading to abrupt ends. To continue, integrative changes should demonstrate archaeology as the study of the past to both inform the present and to shape the future. As such, “metamodern” archaeological investigations contribute to problem solving, from local to international, through translating the past to understand present conditions, and to employ that translation for the desired future, while generating new knowledge, refining methods, and building theory. A more ethical, meaningful, and sustainable profession that has impact and consequence starts not with a 1970s loss of innocence but with an eyes-wide-open quest for humanity. In practical terms, simple, ground-truthing archaeological investigations and rote, technical reports serve as exemplars of failure. Fear and funding block an impactful future for archaeology. Small victories, such as agency archaeologists taking a chance on a novel proposal that provides funding for CRM mitigation beyond the typical excavation/technical-report model, and collaborative projects between THPO staff and archaeologists living in their homelands, demonstrate the promise of staying on our feet and pushing for change, as we go down to the crossroads.

Carr, Robert (Archaeological & Historical Society)

[371] *Colonial Expulsion and Assimilation in the Town of Tequesta, Miami River, Florida*

The indigenous town of Tequesta on the mouth of the Miami River was the site of two attempts of colonization and Christian conversion by the Spanish. The first was in 1567 by Pedro Menendez and the

second in 1743 by Jesuits. Both attempts ended largely in failure that included rebellion and the abandoning of the mission attempts; however, the long-term effect of contact was the creation of allies of convenience between the Tequesta and the Spanish resulting in the immigration of hundreds of Florida Indians to Cuba. This paper presents the results of archaeological excavations at the mouth of the Miami River revealing an assemblage of colonial artifacts, the largest in South Florida, including some that may be possibly associated with the Tequesta revolt.

Carra, Bernadette (WestLand Engineering & Environmental Services)

[43] *Ensuring Tribal Voice and Wishes during Archaeological Burial Recovery Activities*

For descendant communities, archaeological data recovery activities can be an anxious and painful time as ancestors are recovered and escorted to a new location for documentation and repatriation. Disturbance of burials and human remains is averse to Native American traditions and in many cases can only be conducted by certain medicine people. Yet today there are thousands of disturbances of ancestral remains yearly in Arizona alone as archaeological data recovery projects are conducted prior to land development. For most tribes in the Southwest, the respectful recovery, documentation, and repatriation of ancestors is the most important aspect of archaeological excavation. Westland's Tribal Monitoring Program, working with THPOs and traditional cultural practitioners, has developed strategies and protocols to ensure a tribal voice during burial recovery activities. This discussion explores the sensitivity training, communication protocols, collaboration goals, and best practices for working with Tribal Nations during ancestral remains recovery.

Carranza, Eugenia [60] see Martinez, Gustavo

Carroll, Jon (Oakland University)

[219] *Simulating Assyrians: The Siege of Tel Lachish*

The Assyrian siege of Tel Lachish in 701 BC was immortalized in stone reliefs that once decorated the walls of Sennacherib's palace at Nineveh. Archaeologists have long recognized the role these images played in glorifying Assyrian military and political power. The reliefs have also heavily influenced our interpretations of how the city of Tel Lachish was conquered. Computer modeling and simulation and drone photogrammetry are used to re-create the ancient landscape of Tel Lachish, and digital recreations of Assyrian equipment and tactics are used to test hypotheses regarding how the city fell.

Carson, Mike (University of Guam, UOG Station)

[183] *Geoarchaeology of Paleo-landscapes Can Account for Long-Term Records and Avoid Bias of Surface Surveys*

I will share examples of my work with geoarchaeology and paleo-landscapes in Pacific Islands areas, showing how our landscapes have changed in chronological order, as a practical framework for ascertaining where to look, how deep to dig, and what to expect of the archaeological record in any given location. In academic work and especially in resources management, this approach has been more productive than the standard procedure of a surface survey that necessarily favors later-aged periods and risks missing the deeper layers and older time periods.

Cartajena, Isabel (Universidad de Chile), Patricio De Souza, and Flora Vilches (Universidad de Chile)

[331] *Fish and Shell Remains from the Late Archaic Period in the Inland Region of the Atacama Desert: Insights into the Circulation and Consumption of Special Coastal Meals and Goods by Complex Hunter-Gatherers*

It has been suggested that hunter-gatherer social complexity becomes evident during the late Middle Holocene in the Atacama puna. The Loa River basin is a highly advantageous location, characterized by a concentration of water and biotic resources, and contains multiple human settlements. The Late Archaic is represented by the Chiu Chiu Complex, which encompasses more than 50 sites in the Chiu Chiu micro-basin. Of these, the RanL-140 site is particularly noteworthy. This is the first Chiu Chiu Complex site to date where an occupational sequence with three levels of solid architecture has been identified, dated between 5.1 and 4.7 cal ky BP. The site features an offering pit, a cache with projectile points, and numerous ichthyological and malacological remains. The latter corresponds to complete gastropods, shell fragments, and beads. This provides evidence of the movement of malacological materials and fish from the coast, more than 150 km

away. It allows us to understand the importance of the circulation and consumption of distant marine resources in a context of increasing social complexity.

Cartajena, Isabel [53] see De Souza, Patricio

Carter, Alison (University of Oregon), and Miriam Stark (University of Hawai'i)

[61] *Power, Prasat, and Periphery: Understanding Life in a Provincial Angkorian Village in Northwest Cambodia*
Provincial areas offer key vantage points for studying both the limits of state power and local agency in these regions. The Angkorian civilization was Southeast Asia's dominant regional power from the ninth to fifteenth centuries CE. Its cultural influence extended across much of mainland Southeast Asia by its twelfth-century apex, but little archaeological research has yet concentrated on provincial areas and their long-term relations to the Angkorian core. This paper introduces the site of Baset Village in Battambang province, northwest Cambodia, and presents results from four field seasons of research. Our work has found that people lived in Baset village for hundreds of years prior to the construction of a sandstone temple by King Suryavarman I in the early eleventh century CE, with habitation likely continuing into the modern era. Preliminary results also provide insight on daily life in Angkorian and Pre-Angkorian Cambodia, as well as how life in this village was impacted by the growth and expansion of the Angkorian state.

Carter, Alison [61] see Howell, Marly

Carter, K. (Wichita State University)

[299] *The Burning Question: A Study in Bison Dung Fuel Representation*

This study sets out to determine the applicability of using fecal spherulites and coprophilous fungal spores (CFS) as tracers for bison dung fuel use within the archaeological record. Modern bison dung and surrounding sediments were collected from the Konza Prairie Biological Reserve (KPBS) and analyzed for fecal spherulites and CFS. Following collection, the bison dung samples were subject to controlled burning, with data collected from the fire and associated firing zone. This process was repeated with a wood-fueled fire to establish a comparative basis for the differentiation between these fuels and to examine the potential recovery of fecal spherulites and CFS in postfired contexts. It is hoped that this study will clarify that both fecal spherulites and CFS will not only be useful tracers for dung-fuel utilization but further establish a baseline for understanding the spatial patterning of these remains within archaeological contexts.

Cartwright, Rachel (Independent Researcher)

[170] *Rebels in the Medieval North Atlantic*

From the eighth to the fourteenth century, the regions of the North Atlantic witnessed a myriad of political changes, including the development of large-scale trade networks, urban foundations, and some significant migratory processes. Some of these changes were through invasions, such as the Scandinavian occupations of parts of present-day Britain and the Norman invasion, whereas others were achieved through rebellious acts. This paper, however, will look at some of the failed attempts to cause political change throughout this region, using historical and archaeological sources. From the Battle of Clontarf in Ireland to the Eyjarskeggjar rebels during the Norwegian Civil War, several uprisings in the Medieval North Atlantic aimed to overthrow kingdoms and reorganize the power structures that ruled the region. Although the rebellions discussed in this paper ultimately failed, many of the attempts continue to live on in myth and legend, shaping how present-day peoples view their past.

Carvajal Contreras, Diana (Smithsonian Tropical Research Institute; Coiba AIP), and Ilean Isaza (Marcus Institute)

[56] *Tuna Fishing Tradition in Jicarita: Archaeological Investigations in the Coiba Archipelago, Panama*

Recent archaeological investigations into the marine traditions of Jicarita Island, located in the Coiba Archipelago in Panama, reveal a rich history deeply intertwined with maritime activities (cal 1290–1060 BP). This study sheds light on the maritime practices, technologies, and sociocultural aspects of the precolumbian population associated with procuring and butchering tuna fish (*Euthynnus lineatus*). Through a combination of zooarchaeology and artifact analysis, preliminary data of the fish bones suggest that black skipjack tuna was

smoked and preserved at the site, with the head and tail being disposed of there. The middle part of the fish was not found, indicating that the fillets were likely exported to other locations in the archipelago. Lithic artifacts were used to catch and scale this species. The findings offer valuable information about the region's maritime heritage and contribute to our understanding of prehistoric coastal societies.

Carvalho, Milena (ICArEHB), and Jonathan Haws (University of Louisville)

[156] *Late Neanderthal Subsistence at Lapa do Picareiro (Portugal): A Zooarchaeological and Taphonomic Study*
Identifying variability in Neanderthal behavior through time during the Late Pleistocene is critical for understanding the processes which culminated in the disappearance of Neanderthals on local and regional scales. One region, Portuguese Estremadura (central Portugal), has a growing Middle Paleolithic archaeological record with several key sites demonstrating the ecological plasticity of Neanderthals in their hunting strategies. Neanderthals in this region, seemingly gone by ~42 ka cal BP, exploited both sessile and fast-moving small prey such as rabbits and tortoises; consumed marine resources like mollusks, crabs, fish, seals, and dolphins; and targeted various medium- to large-sized ungulates like red deer, ibex, aurochs, horses, and roe deer. Lapa do Picareiro is ideally suited to study Neanderthal subsistence behaviors through time due to its large zooarchaeological assemblages corresponding to several Middle Paleolithic occupations. Preliminary analyses suggest both anthropic and non-anthropic contributions to these assemblages. Here, we present the results of a zooarchaeological and taphonomic investigation of levels MM, KK, and JJ, focusing on identifying the depositional agents responsible for the osseous accumulations, assessing whether Neanderthal subsistence behaviors varied or demonstrate continuity through time, and use available site-based and nearby paleoclimatic proxy records to contextualize their hunting decisions.

Carvalho, Milena [384] see Haws, Jonathan

Carvalho, Milena [235] see Real, Cristina

Casana, Jesse (Dartmouth College)

[350] *The Antarctic Archaeological Reconnaissance Project: Preliminary Results*
The conventional wisdom that Antarctica was untouched by humans prior to its discovery by British mariners in 1819 is not based on archaeological evidence, but instead is rooted in a tacitly racist belief that Indigenous peoples who lacked European sailing technologies were simply unable to get there. Yet just 500 miles north of the ecologically rich Antarctic Peninsula, maritime hunter-gatherers occupied Tierra del Fuego throughout the Holocene, and may have followed the annual migration of animals to Antarctica each austral summer. Evidence of seasonal hunting expeditions could be preserved on ice-free beaches and rockshelters, and numerous archaeological sites have been cursorily recorded on Antarctica's South Shetland Islands, but none have been well documented or securely dated. This paper presents preliminary results of a new archaeological project that is undertaking a systematic survey of the Antarctic Peninsula region, better documenting known sites, prospecting for previously undiscovered sites, and collecting scientific dating evidence. Results are reshaping our understanding of the human history of Antarctica, challenging long-standing ideas regarding the region's ecology, the colonization of the Southern Oceans, and global human migration more broadly.

Casana, Jesse [365] see Alperstein, Jonathan

Casanova Menendez, Martin [331] see Grant, Jennifer

Casanova Vasquez, Erick [331] see Bria, Rebecca

Casanova Vasquez, Erick [200] see Oliver, Kalei

Cascalheira, João [384] see Haws, Jonathan

Caseldine, Christopher (Arizona State University), and Allisen Dahlstedt (Arizona State University)

[186] *Guiding the Next Generation of NAGPRA Practitioners: Formalized NAGPRA Educational Opportunities at Arizona State University*

Expertise in NAGPRA has been traditionally gained through hands-on experience. Personal reflections published in books, lectures, webinars, workshops, the NAGPRA community of practice, and National NAGPRA all provided insights, but the process is often mystifying for those starting out. Recognizing the need for more substantial training opportunities, the School of Human Evolution and Social Change at Arizona State University launched an educational program focused on museum NAGPRA compliance in 2022. Over four semesters, undergraduate students learn how to collaborate with tribal partners and other stakeholders to move an unknown archaeological collection to repatriation. During their time in this learning track, students hear from tribal partners and NAGPRA practitioners at different career stages, gain experience leading a repatriation project, and practice skills they learn at a partner federal agency or museum. Students complete the learning track with two years of practical experience and a good foundation for leading NAGPRA projects. We will also discuss the forthcoming Museum Studies MA focusing on NAGPRA offered at ASU.

Caseldine, Christopher [346] see Ruth, Alissa

Casey, Shannon [189] see Lillios, Katina

Casillas, SJ (University of Colorado, Denver), Monica Eckels (University of Colorado, Denver), Amy Gillaspie (Archaeology Southwest), and Jamie Hodgkins (University of Colorado, Denver)
[88] Preliminary Zooarchaeological Faunal Analysis from the Jones-Miller Bison Kill Site in the American Great Plains
 The Jones-Miller Bison Kill Site was discovered in northeastern Colorado in 1972 by the Jones family while clearing their land for agricultural irrigation. An analysis was reported by Dennis Stanford in the late 1970s, revealing it to be a communal Paleoindian hunting site. Excavations uncovered over 40,000 skeletal elements of an extinct bison species, *Bison antiquus*, along with over 200 stone tools associated with the Hell Gap complex. Radiocarbon dating of the faunal remains places the site at approximately 10,800 BP. This study will focus on an analysis of a 2 × 2 m excavation unit, G106, of the larger 36 × 40 m bone bed. Thus far, 114 skeletal *Bison antiquus* elements have been examined using standard zooarchaeological methods. Humeri are the dominant skeletal element, MNE = 23, MNI = 9, 35% ($n = 8$) have cut marks, and 17% ($n = 4$) have carnivore tooth marks. The analysis suggests that humans were mainly butchering the forelimb, with carnivores gaining access afterward. This study will gain information about the placement of skeletal elements from *Bison antiquus*, as well as butchering techniques, preservation, taphonomy, and the role of nonhuman actors at this specific location. This research is important for providing insights about the hunting and processing behaviors of Paleo Native Americans.

Casillas, SJ [52] see Adam, Manda

Casillas, SJ [300] see Eckels, Monica

Casillas, SJ [65] see Stauffer, Kaeleen

Casimiro, Tânia (NOVA University of Lisbon)

[371] Globalized Histories through Local Material Stories: The Micro- and Macro-narratives of Portuguese Global Connections

The history of Portuguese globalization is often dominated by grand narratives of exploration and discovery, perpetuating a Eurocentric view of global encounters. However, material evidence from archaeological sites, together with historical evidence, offers alternative perspectives that challenge these official stories. This paper seeks to explore how both macro and micro material analyses provide a richer, more complex understanding of Portuguese encounters during the so-called “Age of Discoveries.” By focusing on the everyday lives of individuals—in different parts of the globe—through artifacts, diet, and spatial practices, this study reveals how local and global histories interlink in unexpected ways. For example, the adoption of non-European technologies and customs by Portuguese colonizers highlights the fluidity of cultural exchange, contradicting the notion of a one-sided imposition of European practices. Answering to the challenge of the session, this paper contributes to broader discussions on rethinking global histories by emphasizing the importance of material culture in constructing alternative narratives. It also considers how these stories can be effectively communicated to broader audiences to challenge and reshape popular understandings of the so-called “Grand Discoveries.”

Castañeda, Alejandra

[330] *Assessing Mobilities and Interactions between the Lerma Valley and Zacapu, Michoacán, during the Classic: Results of a Ceramic Analysis by Chaînes Opératoires*

This research focuses on the Lerma Valley, located at the interface between the lacustrine regions of Michoacán and the southwestern region of Bajío, and the Zacapu Basin. We aim to culturally characterize its populations during the Classic period (AD 200–600), using the technological approach of *chaînes opératoires*. From the characterization of technical traditions, defined as an inherited way of doing things and therefore the expression of a social group, we evaluate the degree of cultural kinship and the nature of interactions between potters, as well as the phenomena of human mobility that may have taken place between the regions studied. Our results highlight two technical traditions: productions made by coiling and by molding. We propose that the presence of the same traditions in the Lerma Valley and in Zacapu reflects a common learning path among the groups of potters, highlighting the existence of social links that may have consisted of kinship ties.

Castañón Suárez, Mijaely

[330] *Tingambato and the Interaction and Exchange Networks with Tierra Caliente and the Lake Region of Michoacán (AD 0–700)*

This presentation aims to address the development and changes of interactions and the exchange networks that Tingambato maintained with the lake region of Michoacán and Tierra Caliente from AD 0 to 700, as reflected in the ceramics. The study applied ceramic typological analysis and spatial distribution maps, accompanied by technological study of ceramic production (by “*chaîne opératoire*”) and petrographic analysis in thin sections to identify the probable sources of raw materials.

Castellon Huerta, Blas (Dirección de Estudios Arqueológicos INAH)

[48] *Las unidades habitacionales de Santo Nombre, Puebla: Aproximación a su distribución*

En esta comunicación se presenta un avance del estudio sobre la distribución espacial de asentamiento del periodo Clásico de Santo Nombre, Puebla. En particular, se muestran algunos indicadores arqueológicos constantes en las unidades domésticas cercanas al núcleo o epicentro del asentamiento. Por último, se hace una propuesta sobre su organización interna, la posible conformación de barrios periféricos y las actividades asociadas a estas concentraciones habitacionales del sureste de Puebla durante el periodo de 200 a 450 dC.

Castillo, Cristina [61] see Dierks, Zachary

Castillo, Karime

[89] *Glassmaking in Nineteenth-Century Jalisco, Mexico*

This paper contextualizes the production of glass in Guadalajara, Jalisco, Mexico, within the scientific developments taking place during the early nineteenth century, particularly in the field of chemistry. Glass recipes from a Mexican glass workshop reflect changes in the technology and the use of chemical compounds that radically differ from the colonial tradition. A comparison with contemporary batch books from North America highlights Mexican glassmakers’ participation in global glass developments, while the experimental replication of their glass recipes provides clues into the technology of the time.

Castillo, Noemi

[48] *Proyecto Arqueológico Sur del Estado de Puebla, Área Central Popoloca-Nguigua, Tehuacan*

Corresponde a un proyecto de investigación a largo plazo que se inició en los años 90 y continua con temporadas anuales hasta la fecha. Por ser un proyecto de continuidad de área, tenía como intención de limitar desde el punto de vista arqueológica la zona en que habitaron los pobladores indígenas desde el clásico hasta el momento de la conquista española, en base a las fuentes históricas y poner en valor a estos grupos llamados por los aztecas Popolocas y que ocuparon en su época de apogeo del Sur del Estado de Puebla desde la población actual de Tepeaca hasta la parte norte del actual estado de Oaxaca en la región conocida como coixtlahuacán. Actualmente ya delimitada el área geográfica y habiendo echo el recorrido en esta zona, se puede sin lugar a duda definir que durante el postclásico estos Nguigua o Popolocas durante su época de apogeo en el posclásico desde el punto de vista político conformaban cuatro grandes provincias cuyas cabeceras fueron Tecamachalco, Tepeji de Rodríguez y Tehuacán en el actual estado de Puebla y coixtlahuacán.

Castillo-Jiménez, Samuel [384] see Alcaraz-Castaño, Manuel

Castle, Victoria [347] see Badillo, Alex

Castleberry, Crystal (Colonial Williamsburg Foundation), and Eric Schweickart (Colonial Williamsburg Foundation)

[70] *From Excavation to Interpretation: Animal Burials in the Custis Garden*

For five years, the Colonial Williamsburg Department of Archaeology has been investigating Custis Square, the Williamsburg home of John Custis IV. The overarching goal for the project is to collect the evidence necessary to restore Custis' early eighteenth-century formal gardens, but restored landscapes and buildings in Colonial Williamsburg are more than a backdrop for costumed interpretation. Archaeological work at Colonial Williamsburg encourages our visitors to look beyond the carefully restored landscapes, buildings, and the mythologized "nation builders" to the many members of the community whose names do not appear in history books. Among the many artifacts and features discovered during the excavations at Custis Square have been the articulated remains of several animals placed within postholes and planting holes associated with the early eighteenth-century garden. These burials open new questions about the cultural traditions practiced by the people who once lived and worked at Custis Square. This presentation offers a forum through which to explore the cultural traditions of Europeans and enslaved Africans, how they relate to intentional burials of various animals at Custis Square, and the ways archaeological research can help provide a more complete picture of eighteenth-century society to Colonial Williamsburg's modern visitors.

Catacora, Andrea [107] see Whitley, David

Catlin, Alyssa

[313] *Childhood in the "Grove": An Examination of Places and Spaces of Children in Coconut Grove from 1886–1926*

Nestled in a vibrant Miami neighborhood is the diverse and historically rich area known as Coconut Grove, or simply the "Grove." Today, visitors to this neighborhood encounter trendy restaurants and million-dollar homes at its core. Meanwhile, West Grove remains predominantly populated by descendants of Afro-Caribbean immigrants who were part of the area's founding. Whether in the "Grove" or West Grove, this neighborhood boasts a time-honored history. The preservation of historic houses, public buildings, and transformed properties into museums in the neighborhood today illustrates this rich heritage. With that being said, the comprehensive history of the early Miami neighborhood tends to lean toward a narrow narrative of the founders and their pioneering of the region. However, by examining the facets of children's lives during Miami's pioneering period, historians and archaeologists can better understand the spaces and places utilized by these children. This article aims to reveal how its youngest inhabitants influenced the physical and social environments of this early neighborhood of Coconut Grove. By concentrating on the places and spaces children occupy, valuable insights into their daily routines, beliefs, and material items can give a holistic view of childhood within this region.

Catlin, Kathryn (Jacksonville State University), Douglas Bolender (University of Massachusetts, Boston), Karen Milek (Durham University), Grace Cesario (University of Iceland), and Melissa Ritchey (Washington University in St. Louis)

[107] *Dynamic Landscape Use at Kotið, North Iceland, at the Millennial Scale*

Kotið in the twenty-first century is a small, grassy space between eroded bedrock and managed wetland, used occasionally for grazing horses. Yet recent excavations have revealed that Kotið had a substantial and varied history of land use over the millennium since Iceland was first settled by the Norse in the late ninth century. Early domestic habitation was followed by three distinct periods of buildings for livestock in the tenth, fourteenth, and likely sixteenth centuries. These moments of infrastructure investment were punctuated by long periods when the land was used primarily for livestock grazing and outfield hay collection, much as it is today. Preliminary investigations of other small sites in the region suggest similar complex histories of changing land use. By integrating excavation and survey data, ethnohistoric and archival research, paleoethnobotany, zooarchaeology, and geoarchaeology, we discuss how a changing relationship to the land reflected changing political-economic and environmental conditions in Iceland over the last millennium.

Cattaneo, Roxana (IDACOR CONICET UNC), Julieta Nobile (Cicterra), and Andres Izeta

[66] *Characterization of Pottery in Characato and Ongamira Valleys, Southern Pampean Hills, Córdoba, Argentina: Compositional Analysis of Raw Material and Sherds Using XRD, FRX, and INAA*

A combination of mineralogical, geochemical, and petrographic analyses is utilized in studying both clay raw material and pottery sherds from archaeological sites located in the Ongamira and Characato Valleys (Córdoba, Argentina). By employing XRD, XRF, INAA, and crystallography to refine the diffraction patterns, we analyze the record of 18 clay potential sources and 78 pottery sherds from 16 archaeological sites dated between 1900 and 300 BP. In both regions, we interpret the archaeological remains as evidence of seasonally reoccupied encampments, using both rockshelters and also open-air sites. Our comparisons reveal an intravalley use of different sources, consistent with findings of other researchers at the macroregions level. The variability in mineral composition indicates multiple producers, the use of several sources, and diverse provenances within each microregion. The variability in mineralogical composition suggests multiple producers, the use of several local sources with diverse provenance in each region. This local sourcing suggests a lack of vessel transfer between regions, aligning with studies of different raw materials such as quartz and silcretes used in lithic technology, or firewood, which also indicate local use.

Cattaneo, Roxana [370] see Izeta, Andres

Cavero Palomino, Yuri [282] see Matsumoto, Yuichi

Cavero Palomino, Yuri [191] see Sjudahl, Julia

Cawley, James (Centerstar)

[340] *Ancient Footprints, Modern Voices: Empowering Indigenous Communities through Technology*

James Cawley, a cultural technologist and creative director of the Northwestern Band of the Shoshone Nation, demonstrates how interactive technology and digital storytelling can empower Indigenous communities. His presentation showcases his work at the discovery site of 12,000-year-old footprints on the United States Air Force's Utah Test and Training Range. Collaborating with the USAF, Far Western Anthropological Research Group, the Northwestern Band of the Shoshone Nation, and other Tribes connected to the site, James emphasizes cultural preservation, storytelling, and education, ensuring that the voices and histories of Indigenous peoples resonate through new digital platforms. Through digital innovation, Indigenous perspectives and voices are amplified, fostering connections across cultures and time while strengthening Native storytelling traditions.

Ceballos, Xanti

[199] *Investigations in the Northwest Plaza Group at Aguada Fénix, Mexico*

Aguada Fénix was located through a lidar (Light Detection and Ranging) survey in 2017 by the Middle Usumacinta Archeological Project (MUAP) in Tabasco, Mexico. Since its discovery, a research team has carried out archaeological excavations in the main platform and peripheral groups to understand the social dynamics during the Middle Formative in the region. The site is composed of a main platform (1050 BC) that exhibits a Middle Formative Usumacinta (MFU) pattern, which consists of a rectangular plaza defined by a row of low mounds and an E-Group at the center. A total of nine causeways extends from it to smaller plaza groups with the same spatial configuration. My research focuses on the Northwest Plaza group, a smaller replica of the main plateau, located at the west of it. The excavations, ceramic analysis, and radiocarbon dating aim to answer questions related to the chronology of the Northwest Plaza group, its contemporaneity to the main plateau, and the probably ritual use of the edge mounds located in both plateaus as well as the existence of similar access patterns. The data will inform about the role that ritual and public gatherings had in the early community building of the Preclassic Maya society.

Cecil, Leslie [171] see Bey, George

Cegielski, Wendy [114] see Barton, C. Michael

Celestian, Aaron [299] see Hoelzel, Chloe

Cerezo-Román, Jessica (University of Oklahoma), Emily Moes (University of St. Francis), Lexi O'Donnell (University of New Mexico), Nadia Neff, and Keith Prufer (University of New Mexico)

[36] *Cremation Mortuary Practices of Hunter-Gatherers from Belize during the Late Pleistocene and the Late Holocene*

We examine cremation mortuary practices from Saki Tzul and Mayahak Cab Pek, two rockshelters located in the Maya Mountains of southern Belize. The sites date from 12,000 to 3700 cal BP, spanning the Late Pleistocene to the Late Holocene. We build on performance theory and issues of identities to look at the life course of the individuals and the different stages of cremation rituals. We do this by reconstructing the biological profile of the individuals, examining thermal alterations, posthumous treatment of the bodies, and broader archaeological information from the sites. Preliminary results highlight the variation in cremation rituals between different individuals. The data suggest that most cremation contexts contain partial individuals; many may be secondary interments. Some individuals were highly burned while others were not, suggesting different levels of pyrotechnological efficiency and/or resource accessibility. The results glimpse the many ways foragers treated, buried, and memorialized their dead.

Cervantes Quequezana, Gabriela [273] see Cutright, Robyn

Cesaretti, Rudolf [289] see Smith, Michael E.

Cesario, Grace [107] see Catlin, Kathryn

Cetin, Ahmet Enis [379] see Hamdan, Emadeldeen

Chacón, Kenia [100] see McNeil, Cameron

Chacon de Hernandez, Marcia (Proyecto Cuenca Mirador)

[383] *Investigaciones en la Estructura 5A7.1 Grupo Sereque Complejo Danta*

Las Investigaciones en el Grupo Sereque, se han enfocado en la estructura principal conocida como Edificio 5A7.1, que corresponde al complejo La Danta. El grupo está ubicado al norte sobre una elevación y área de cantera conectado directamente a la primera plataforma de la Danta por una calzada de aproximadamente 500 m localizada a través del sistema lidar. La estructura presenta una arquitectura monumental compleja. Las investigaciones se llevaron a cabo como parte del programa de entender los orígenes y las dinámicas del desarrollo de la arquitectura preclásica monumental alrededor del Complejo La Danta, se nota un rol importante vinculado a la pirámide Danta y el sitio El Mirador. La estructura presenta características o rasgos constructivos especiales, como bloques megalíticos, un patrón de nivelación con bloques en la parte central de la estructura, esquinas redondeadas. Excavaciones ya han revelado el carácter único de su construcción, y las posibles funciones del edificio en el desarrollo cultural Preclásico.

Chadwick, William (Indiana University of Pennsylvania)

[183] *Geoarchaeology: A Tool to Focus CRM Archaeological Testing*

Geoarchaeology is the application of geoscientific knowledge and methods to answering archaeological questions. These questions can range from inter-site to intra-site scales across a multitude of landscapes. The application of geoarchaeology within CRM archaeological projects provides an opportunity to target potential archaeological resources within a landscape, thus relying less on systematic testing. This presentation will examine the integration of geophysics with geomorphology from CRM projects to create an understanding of the horizontal and vertical landscape(s) and archaeological features to facilitate the targeting of archaeological excavation to limit ground disturbance while obtaining maximized archaeological data. As the CRM discipline moves forward, the push is being made to limit ground disturbance during the initial stages of archaeological survey. This reduced ground disturbance is becoming preferred by many stakeholders to diminish negative impacts to the in situ archaeological record as part of the preservation ethic.

Chagoya Ayala, Itzel, and Veronica Perez Rodriguez (University at Albany, SUNY)

[290] *¿Cómo se regresa a una ciudad abandonada? Documentando la reocupación posclásica del Cerro Jazmín*
 Cerro Jazmín fue una importante urbe del Formativo tardío en el Valle de Nochixtlán, Mixteca Alta, Oaxaca. La ubicación del Cerro Jazmín fue estratégica como nodo entre los Valles de Oaxaca, la Mixteca Baja, Puebla y la Cuenca de México, lo que convirtió al Cerro Jazmín en una ciudad accesible, y a su vez, influenciada por los cambios regionales. Sumando las transformaciones climáticas que ocurrieron al final de la época Clásica, nuestras investigaciones han encontrado que la ciudad fue mayormente abandonada hacia el 300 dC, permaneciendo en ella una población menor y dispersa. A partir del año 1000 dC, el sitio fue reocupado y nuevamente transformado a un centro demográfico significativo. Las exploraciones en Terrazas 1152 y 912, que discutiremos en esta ponencia, nos permiten conocer cómo fueron reocupados, reutilizados, aprovechados y modificados los espacios y construcciones existentes, mientras que los datos de Áreas 17 y 18 nos permiten entender las partes de la ciudad posclásica que representaron ocupaciones y construcciones completamente nuevas. Se presentará una discusión sobre los posibles factores que intervinieron en el declive y resurrección de esta ciudad en las montañas.

Chagoya Ayala, Itzel [347] see Frykholm, Soren

Chai Andrade, Travis (Princeton), and Emma Ljung (Princeton University)

[225] *Escaping Aesthetics, Embracing Storytelling: How Indigenous Artifacts in University Museums Can Remediate Problems in the AP History Curriculum*

In 2022, 34.6% of US high schoolers took an AP test, US History being among the most popular subjects. Yet, despite heightened sensitivity toward Indigenous cultures and their histories, the AP History curriculum still displays shortcomings in this regard. Moreover, in college, many students encounter Indigenous cultures through one discipline only: Art History. Within this discipline, introductory courses often treat artifacts as aesthetic objects whose stylistic contents merit study even when original context, use, and provenance are unknown. For the unprepared student, this approach isolates the culture in the past: it is “over.” Yet, those stylistic contents only illuminate brief, temporal fragments of larger, longer stories. In effectively halting museum study and thus the aestheticizing approach to objects as *the* introduction to Native American cultures, the COVID-19 pandemic offered an escape from aesthetics by forcing educators to consider how Indigenous artifacts tell multiple stories, stories of past, present, and future. In fact, the same museum artifacts can fill important learning gaps inherited from the AP curriculum if educators center story rather than style. This paper uses an Alaskan harpoon socket at the Princeton University Art Museum to demonstrate how actively de-aestheticizing research assignments can generate productive learning outcomes.

Chala, Khaterine [315] see Sallum, Marianne

Champi Ojeda, Edith Cadmir [386] see Franco Chávez, E. Williams

Chan, Evelyn [51] see Pugh, Timothy

Chance, John (ERO Resources Corp), and Katherine Mayo (ERO Resources Corp)

[179] *Untangling Land Use at Wild Horse: Analyzing Paleoindian to Historical Indigenous Diagnostics to Better Understand Open Architectural Arrangements in South Park*

This presentation focuses on the South Park intermontane basin to better understand landscape use and patterns spanning 10,000 years. Since 2014, ERO has documented hundreds of diagnostic artifacts—projectile points and ceramics—often in conjunction with numerous stone features across open parklands, uplifted ridges, and paleochannels. By analyzing the diverse architectural feature dataset in conjunction with the distribution of diagnostic artifacts we begin to untangle land-use patterns over 7,000 acres of a uniquely undeveloped landscape.

Chang, Claudia

[377] *SUNY Binghamton: The Second Wave of the New Archaeology in the 1970s and Beyond*

In the 1970s a group of archaeologists from the University of Chicago began their early teaching careers in

the graduate Anthropology Program at SUNY-Binghamton. These professors included Margaret Conkey, John Fritz, Fred Plog, and Charles Redman. Their graduate students referred to them as “the second wave of the New Archaeology.” At the same time Fred Plog and Margaret Wiede initiated a major CRM highway project, I-88. The SUNY-Binghamton Public Archaeology Facility became a leading northeastern training program for MA and PhD students specializing in CRM. Albert Ammerman arrived soon after he co-authored a series of papers on the demic diffusion of early Neolithic villages with population geneticist Luigi Cavalli-Sforza. Adding to this, William Isbell led a major project in Peru at Tiwanaku. The archaeologists at Binghamton covered several major world regions while emphasizing the tenets of American processual archaeology: nomothetic-deductive hypothesis testing, quantitative methods, research design, cultural ecology, diachronic change, gender relations, and cultural resource management. In this paper I trace my own career trajectory back to my graduate training as a prehistorian and ethnoarchaeologist in North America, the Mediterranean, and Central Asia. Binghamton’s graduate program left a lasting legacy of processualism and beyond in the 1970s and 1980s.

Chapman, Bruce [315] see Comer, Douglas

Character, Leila, Timothy Beach (University of Texas, Austin), Adam Rabinowitz (University of Texas, Austin), and Mark Moline (University of Delaware)

[114] *Transferable Object Detection Approaches in Archaeology for Both Terrestrial- and Underwater-Based Projects*
This talk will focus on deep learning approaches to object detection in archaeology using remotely sensed data. We will discuss several case studies that use similar methodological approaches, presenting shared conclusions drawn from across the case studies. Case studies will include two terrestrial projects focused on ancient Maya features and ancient Romanian burial mounds using lidar and RGB imagery, respectively, as well as two underwater projects, focused on shipwrecks and aircraft wrecks using multibeam sonar and sidescan sonar, respectively. Presented methodological conclusions will apply to the deep learning approach in general, irrespective of study area or feature type, and will include discussion of deep learning modeling, data and imagery collection parameters where applicable, data and imagery preprocessing, model assessment, applicability and relevance of approach, and recommended implementation.

Charette, Collin (Eastern New Mexico University)

[127] *Successes and Setbacks in 3D Modeling: Developing Lab Protocols for Modeling Ground Stone Artifacts*
Ground stone artifacts are generally an ignored part of university and archaeological collections. The Hell Gap National Historic Landmark collections include ground stone from the Folsom and Agate Basin levels (~10,800–10,600 YA). These artifacts have yet to be fully analyzed. My research will show the utility of using AgiSoft Metashape to construct high quality 3D models of ground stone artifacts. AgiSoft Metashape is a commercial program that uses overlapping photographs to construct robust models. One of the benefits of using this software is that it allows the user to observe and reduce error levels. Using a single ground stone tool (HG 1965 HGI W51_UW11289) from the Hell Gap National Historic Site in Wyoming, this poster discusses the difficulties and shortcomings of this process including equipment, time constraints, and the need to develop familiarity and competency in using AgiSoft Metashape. Results will provide long-term protocol suggestions for the average digital archaeology lab.

Charles, Michael [192] see Payne, Neal

Charlton, Michael (UCL Institute of Archaeology), Wenxiao Jiang (Emperor Qin Shihuang’s Mausoleum Site Museum, China), Andrew Bevan, Weisha Du (Emperor Qin Shihuang’s Mausoleum Site Museum, China), and Xiuzhen Li (UCL Institute of Archaeology; School of Archaeology, University of Oxford)

[392] *Iron Scale Armor from the Mausoleum of China’s First Emperor and Its Wider Context*
The excavation of a complete suit of iron armor from Tomb M1 (associated with the Mausoleum complex of China’s first Emperor Qin Shihuang) has provided an opportunity to characterize this unique find and situate it within the broader context of the Qin Empire and Eurasian technology. Though corroded, individual scales retained information related to basic morphology, surface texture, decoration, and microstructure as revealed

by X-radiography and micro X-ray fluorescence reveal scales covered in lacquer and painted with polychrome pigments. Optical and scanning electron microscopy combined with X-ray microanalysis indicate that the armor scales are comprised of heavily worked low carbon steels derived from decarburized cast iron. These findings show close stylistic alignment with armored figures from the contemporary Terracotta Army East of the main complex but also sharp technological contrast in choice of material. We consider this evidence in its capacity to shed new light on the transition from bronze to iron weapons in third century BCE China.

Charlton, Michael [392] see Bevan, Andrew

Chase, Adrian (Boston University)

[51] *Shifting Prosperity amid Cycles of Collective and Autocratic Governance at Caracol, Belize*

The city of Caracol, Belize, shifted back and forth between more collective and more autocratic governance at least four times over its 1,500-year history. In the Preclassic, early conurbation between three centers (Downtown Caracol, Hazcap Ceel, and Cahal Pichik) created the initial conditions for Caracol's distributed system of administrative districts and more dispersed (and collective) governance. In the Early Classic, sharp differences existed between elites and the rest of the population, suggesting a high level of inequality. This changed in the early Late Classic after the elite broke away from Tikal in 562 CE and ushered in a period that saw tremendous population growth, greater overall prosperity, and increased collective governance combined with reduced expressions of elite wealth. For a century between 700 and 800, the city maintained widespread wealth sharing and city-wide accessibility of long-distance goods. However, in the Terminal Classic, patterns at Caracol demonstrated high inequality with the emergence of haves and have-nots, resurgent rulership, and a new system of political relationships between Caracol and sites along the Mopan and Belize Rivers. Archaeological data from Caracol shed light on periods of greater and lesser prosperity and how they related to shifts between more collective and more autocratic governance. *****This presentation will include images of human remains.**

Chase, Arlen (University of Houston), and Diane Chase (University of Houston)

[52] *Reflections on Maya Ceramic Analysis for the Classic and Postclassic Periods*

Maya archaeological projects must deal with the sizeable quantity of pottery sherds that accrue as a result of excavation. The categorization of ceramic materials was formalized in the Maya area by James Gifford based on the ceramics excavated by Gordon Willey at Barton Ramie in the 1950s. His study superseded more descriptive ones provided by the Carnegie Institution of Washington and now dominates the Maya field. Derived from procedures developed in the American Southwest, type-variety-mode analysis, or T-V-M, was designed to enable Maya analysts to make equivalencies in their ceramic materials across sites. However, without substantial direct observation researchers can easily create new categories that are duplicative and not necessary or, alternatively, lump together ceramics that are not related. Categorization of redwares during both Classic and Postclassic periods has proven to be an especially difficult task for some analysts, but given the substantial excavation and sampling that has now taken place, and the reliance on ceramics to make other interpretations about spatial and temporal relationships across sites, these are an excellent place to review and revise traditional T-V-M analysis. We argue that a more contextual focus is necessary in order to advance the analysis of ceramics in Maya studies. *****This presentation will include images of human remains.**

Chase, Arlen [346] see Pargeter, Justin

Chase, Diane [52] see Chase, Arlen

Chavez, Christopher [42] see Schleher, Kari

Chávez, Diana (California State University, Dominguez Hills)

[64] *Using 3D Modeling and Virtual Reality to Increase Accessibility in Maya Archaeology*

Maya archaeology has historically been an exclusive discipline, often closed off to Indigenous people, nonacademics, and the general public. Originating in the colonial period, it initially focused more on the

extraction and collection of “treasures” rather than sharing knowledge. In recent decades, archaeologists have made significant progress in changing this narrative through community-archaeology approaches and recognizing the importance of positionality. However, much more can be done to make Maya archaeology more equitable for all stakeholders. This project outlines two interconnected methods archaeologists can use to make their findings more inclusive and accessible to a broader community. A case study from the Preclassic Maya site of Xanab Chak, Yucatán, demonstrates how photogrammetry and virtual reality spaces can promote broader accessibility. Photogrammetry enables the 3D documentation and representation of excavation units, artifacts, and other cultural materials. These 3D models can then be uploaded to digital platforms, making archaeology more accessible through virtual means while preserving the physical integrity of the materials. Researchers can create virtual catalogues that allow people who cannot visit a site or view artifacts in person to interact with them virtually. Using these methods preserves the artifacts while increasing access for larger audiences to engage with Maya archaeology.

Chavez Llatance, Guidmar [45] see Raillard Arias, Daniela

Chavis, AnnaLevi (Tennessee Division of Archaeology)

[275] *Emergency Life Support for Vulnerable Collections: A Collections Management Case Study on the Anderson Collection*

This presentation discusses a detailed case study on the Anderson Collection, a large collection of Indigenous artifacts gathered by an amateur archaeologist. This collection, now under the care of the Tennessee Division of Archaeology (TDOA), offers a unique lens to explore issues of collections management, emergency intake, and the broader implications of amateur archaeological contributions. Through an interdisciplinary approach that includes heritage legislation, ethics, and decolonized practices, this study provides a comprehensive analysis of the intersection between current changes in the curation of Indigenous collections, avocational archaeology, and professional standards. The narrative of the Anderson Collection highlights the urgent need for policies that ensure the preservation, ethical treatment, and sensitive use of archaeological collections. By framing collections care in emergency medical terminology, the paper underscores the critical and ongoing attention required to maintain the integrity and research potential of such collections. The findings advocate for a collaborative approach that prioritizes Indigenous voices, includes community stakeholders, and aligns with modern movements toward decolonizing archaeology and cultural heritage management. The concluding recommendations aim to enhance transparency, accountability, and inclusivity in the curation process, ultimately contributing to the field’s evolving understanding of ethical stewardship and public engagement with archaeological collections.

Chazin, Hannah

[278] *Heads and Hooves in Late Bronze Age Armenia: Contextualizing the Postmortem Circulation of Animal Remains*

The phenomenon of depositing the head and lower extremities of herd animals in mortuary and ritual contexts was widespread across Eurasia, as was first noted in Piggott’s 1962 article on “head and hoofs” burials. There is a long local tradition of these deposits in mortuary monuments in the South Caucasus across the Bronze Age. Archaeological investigations of Late Bronze Age sites in the Tsaghkahovit Plain have revealed that heads and hooves were also important outside of mortuary practices. This paper discusses the zooarchaeological evidence for the postmortem circulation of cattle and caprine mandibles and tarsals within nonmortuary contexts at the sites of Gegharot and Tsaghkahovit. In doing so, I contextualize the “head and hoof” deposits and other structured depositions of animal remains in mortuary contexts within a wider suite of practices that circulated the heads and lower extremities of domesticated herd animals across the landscape and into graves and walled sites.

Cheever, Sylvia (Vanderbilt University), Terren Proctor, Gwyneth Gordon (Arizona State University), and Tiffany Tung (Vanderbilt University)

[89] *Mercury Matters: Toxic Embodiment and the Colonial Mining Project in Huancavelica, Peru*

The Santa Bárbara mine in Huancavelica, Peru, was exploited by Spanish colonizers from the sixteenth through the early nineteenth centuries. Cinnabar (HgS), formed from mercury and sulfur, is the most

common source-ore for the extraction of mercury. Mercury is highly toxic, and while cinnabar is relatively stable, there is great potential for mercury absorption in contexts where cinnabar is regularly mined, handled, and refined. The Spanish colonial mining project had horrific impacts on the Huancavelica landscape and the Indigenous Andeans conscripted for mine labor. Ethnohistoric records document deleterious health effects among workers that were likely caused by mercury (Proctor 2021). This paper presents mercury concentration data obtained from 77 individuals interred at the Santa Bárbara archaeological site—the colonial settlement where mine laborers resided. Mercury concentration data was obtained using Q-ICP-MS methodology outlined by Ren (2022) and developed at the ASU METAL laboratory. Extractive burdens such as toxic contamination are rarely distributed equitably. Instead, toxic burdens are filtered through underlying vulnerabilities and sociocultural systems to be differentially embodied by individuals. By comparing mercury concentration data across the population at Santa Barbara, we identify community-scale patterns of exposure, providing nuanced insight into the human costs of colonial extraction in Peru.

Chen, Honghai

[338] *The Evolution Mode of Painted Pottery in the Upper Reaches of the Yellow River*

The Hehuang Valley in the upper reaches of the Yellow River is a climate transition zone, a geomorphic environment transition zone, an economic pattern change zone, a cultural exchange zone, and an ethnic group migration zone. The painted pottery found in the upper reaches of the Yellow River was the product of the westward development of the Yangshao Culture in the middle reaches of the Yellow River. The pattern of painted pottery showed three ways of expression in time and space, which were expansion, variation, and innovation. Behind these three kinds of painted pottery was the decision of the people who produced and used painted pottery. These populations were characterized by immigration, integration, and transformation. The integration of the expression of pottery with the populations behind it is understood as the evolution model of painted pottery in the upper reaches of the Yellow River.

Chen, Jennifer (Pennsylvania State University), Douglas Bird (Pennsylvania State University), and Randy Haas (University of Wyoming)

[117] *The Effects of Climate and Culture on Andean Altiplano Diets, 9–1 Ka*

The ancient Andes is one of the few regions in the world where gathering and hunting intensified to result in the domestication of a variety of food products that would ultimately achieve global importance. This outcome is remarkable given the harsh, semiarid, and hypobaric environment, and the driving dynamics remain unclear. Here, I present an analysis of variability in stable isotope signatures from samples of human bone collagen to investigate dietary change in the Andean Altiplano over some millennia. While many archaeological and paleoecological studies emphasize the importance of climate in driving human dietary variation, our analysis fails to find a strong relationship between climate change and dietary diversity. Instead, we find that sociopolitical organization exerted the greatest effect on Andean Altiplano dietary variability. In particular, the emergence of complex governing bodies of the Tiwanaku state had the most profound effect on dietary change in the region. On one hand, Altiplano subsistence economies were remarkably stable in the face of climate change with the potato as a regenerative, constant, and staple highland crop persisting for millennia. On the other hand, dramatic subsistence change resulted from major sociopolitical reorganization marked by the emergence of the Tiwanaku state. ***This presentation will include images of human remains.

Chen, Jingchao (Hebrew University of Jerusalem)

[308] *Feeding a Steppe Garrison: Biomolecular Insights into Food Remains from Medieval Mongolia*

This research is the first of its kind to be conducted on Medieval potshards from Mongolia and China (tenth to fourteenth centuries CE). It analyzes pottery vessels found at garrison sites associated with lines of walls and border demarcation that were constructed by the Liao (916–1125 CE) and Jin (1115–1234 CE) dynasties. It enables us to trace the food remains of the people at those garrisons, revealing the daily consumption of the people who built and operated the wall system. It identifies domesticated plants, particularly millet, as a significant food source for them. The lipid preservation of the shards is exceptional, with a 100% success rate and more than 80% containing biomarker for common millet. This, alongside various types of millets detected archaeologically, suggest that millet was a primary food resource of these population and was likely cultivated locally in the steppe. It suggests a diet including both cultivated grains and animal sources (domesticated,

hunted, and fished). It sheds new light on the food habits and economic base of these garrison communities at both local and regional levels. *****This presentation will include images of human remains.**

Chen, Peiyu (Institute of History and Philology, Academia Sinica)

[195] *Coastal Survey of the Virú Valley: Advancing Archaeological Research through Digital Recording and Thermal Imaging*

The Virú Valley is significant in archaeological history for being the place for the first systematic regional survey and settlement pattern study in the 1940s. Although archaeological investigations in the Virú Valley have remained relatively quiet since then, recent works in the sierra and middle valley areas have begun to change this situation. This study addresses another interesting area, the coast of the Virú Valley, and illustrates two key objectives of the 2024 field season: (1) to identify traces of early human habitation and activity between 3000 and approximately 5000 BP, and (2) to retrieve and record archaeological information through digital approaches. The work included a pedestrian survey and surface data collection at specific archaeological sites. This research was facilitated by the establishment of an online database and the use of satellite imagery, which allowed for efficient survey execution. Moreover, by leveraging the unique environmental characteristics of the coastal desert, thermal imaging techniques were employed to noninvasively detect and identify potential architectural structures at early sites. These innovative approaches not only provide new insights into the prehistoric occupation and activity patterns in the Virú Valley's coastal region but also contribute to advancing the digital era of archaeological survey.

Chen, Ran (University of Arizona)

[44] *Red Rice Alcohol in Southern China: Two Ways of Traditional Brewing and Their Implications for Archaeological Research*

China has a long history of making alcohol using different cereals. Recent archaeological studies demonstrate that people began producing *hongqujiu* (red rice alcohol) in the early Neolithic. However, because this product is produced and consumed in limited areas today, there is limited information about how it is made. This article reports ethnographic observations of the process of making *hongqujiu* in two villages in Zhejiang Province, China, where local people practice two different brewing methods—wet and dry. Samples from an abandoned *jiugang* vat, used in the production of red rice alcohol by a local villager, were studied microscopically to provide reference data on starches, fungi, and other micro-residues. By providing reference information on the traditional alcohol-making processes, circumstances of consumption, and morphological changes of starch and fungal elements, this study will improve our understanding of alcohol making and consuming practices in archaeological contexts in China and beyond.

Chen, Xiaohe, and Zhaobing Zhong (Zhejiang Provincial Institute of Cultural Relics and Archaeology)

[44] *Stone Artifact Production and Utilization at Xiatang during the Early Neolithic in China*

This study investigates the knapped stone artifacts unearthed from the Xiatang site, including those associated with the Shangshan Culture, Kuahuqiao Culture, and Hemudu Culture. Using attribute and technological analysis methods, the research examines how early Neolithic stoneworkers selected and utilized raw materials. By integrating experimental references and use-wear analysis, the study aims to infer the potential functions of these tools and the materials they processed. The comparison of lithic artifacts from these distinct cultures highlights both differences and similarities in technical sequences and tool use across southern China. Additionally, this research provides valuable insights into the subsistence strategies and daily life of early Neolithic inhabitants, contributing to a broader understanding of this pivotal period in China's prehistory.

Chenault, Mark, and Ronald Ryden (Desert Archaeology)

[324] *Chasing Canals in the West Valley, Phoenix, Arizona*

Archaeologists from WestLand Resources discovered portions of several prehistoric and historical canals while conducting data recovery for a proposed freeway in west Phoenix. Excavations were conducted both within the freeway corridor and in adjacent parcels. Researchers utilized a combination of methods to track the canals through the project areas including: (1) historical canal maps, (2) aerial photographs, (3) Google Earth imagery, (4) drone imagery, (5) backhoe trenches, and (6) horizontal excavation with heavy equipment.

Horizontal excavation (stripping) with a backhoe proved insufficient for the removal of the many cubic meters of soil overlying the canals. Instead, the use of a large excavator (track hoe) allowed exposure of hundreds of meters of canals and associated features in plan. One large named canal, Canal Rio, was tracked for several kilometers across multiple project areas.

Cheng, Jing (Yale University)

[44] *Prehistoric Pottery Production of Coastal Hunter-Gatherer in Pearl River Delta, China*

The significant deposition of pottery wares at Xiajiaoshan in the Pearl River Delta, China, reveals the possible scale of pottery production by hunter-gatherer communities of the Xiantouling culture, dating back to approximately 7000–5000 BP. This preliminary research aims to explore the craft production technology of these communities by comparing the chemical composition of pottery sherds and analyzing the modeling techniques employed by early potters. Using methods such as instrumental neutron activation analysis (INAA) and computed tomography (CT) scanning, this study will provide detailed insights into the raw materials and modeling techniques employed by these early potter communities. By enhancing our understanding of these pottery traditions, this research will contribute to broader discussions on developing technological innovation and social organization among prehistoric hunter-gatherer societies in southern China.

Cheng, Wen Yin (Elaine)

[348] *Artisans on the Landscape: Bronze Foundry Organization and Specialization in the Late Shang Dynasty*

Bronze vessels in ancient China are a significant topic of interest in understanding the ancient elites, writing, religion, and culture. However, learning about the casting of bronze vessels speaks to the artisans who produced these artifacts. The various foundries discovered at the Anyang site are not only the location where the bronze vessels were produced but also indicate an immense and intricate production of a major commodity. Their presence is not just a testament to the elite's power but also represents the artisans' specialization in their craft and their organization among themselves as specialists. This paper will discuss the artisans' expertise and how they worked in the ancient landscape, which came together from the 11 known foundries that produced these artifacts. The foundries in Anyang did not just exist independently from each other. They were part of a more extensive network of artisans who shared resources, knowledge, and space while producing the bronze vessels to meet the requirements of the elites. This research discovered further specialization of foundries in bronze casting mold production compared to bronze vessel casting.

Chesson, Meredith S. [65] see Kohl, Madeleine

Cheung, Simona (Barnard College)

[212] *The Personhood of Pottery at Picuris, New Mexico*

As a Chinese archaeologist studying the ancestral pottery of Picuris Pueblo in New Mexico, I am fascinated by the divergent worlds such artifacts occupy. Archaeology has historically maintained a rather singular approach to ceramic analysis, focused on quantification, tables, graphs—hard evidence designed to support anthropological claims. The same sherds, however, continue to have a very different status for members of the descendant community, many of whom regard them as family members and living parts of the community. In this paper, I explore the personhood of Picuris pottery and how it might articulate with the scientific reduction of sherds to data. How can excavated sherds be understood as nonhuman bodies within a larger social collective? How can Southwest archaeologists reimagine lab work in a way that it honors the Picuris insistence that sherds are living bodies? What new ethics of analysis is demanded?

Cheung, Simona [228] see Pugh, Erin

Chim, Eliane (Museum of Archaeology and Ethnology, University of São Paulo), Nicolás Stríkis (University of São Paulo), Francisco William da Cruz (University of São Paulo), R. Lawrence Edwards (University of Minnesota), and Andre Strauss (Museum of Archaeology and Ethnology, University of São Paulo)

[121] *U/Th Dating Reassessment of Brazilian Rock Art Chronology Fails to Support Pre-LGM Human Presence in the Americas*

The chronology of initial human occupation in the Americas is highly debated. While most scholars accept only post-Last Glacial Maximum (LGM) occupations, others advocate for a much earlier arrival of humans on the continent, with estimates ranging from 130,000 to 24,000 years ago. Rock art has played a significant role in this debate, with examples in Brazil purportedly dated to pre-LGM times, such as those found in the Peruaçu Valley (central Brazil). However, methodological issues have rendered these previous dates unreliable. Therefore, we present a comprehensive effort to redate the allegedly pre-LGM rock art in the Peruaçu Valley using U/Th dating. We analyzed 44 samples of carbonate coatings directly associated with cave paintings at four archaeological sites. Our results falsify the hypothesis of pre-LGM rock art in the Peruaçu Valley, indicating that rock art production began only at the end of the Pleistocene, around ca. 12,000 years cal BP, and continued uninterrupted until the late Holocene. These findings add to various lines of evidence suggesting that the Americas were not populated before the Last Glacial Maximum.

Chim, Eliane [391] see Straioto, Haruan

Chin, Eikyo

[125] *Archaeological Artifacts of East Asia and Their Western Parallels: An Analysis of Findings from Japan, the Korean Peninsula, and Mainland China (Primarily Fifth–Seventh Century)*

As East Asian archaeology has advanced, many artifacts possibly originating from the West have been unearthed in the region. These artifacts share similar characteristics with those found in the West, prompting researchers to explore the nature of East-West interactions during this period. Although these artifacts are widely believed to result from cultural exchange, their exact relationship remains unclear. This study broadens the focus beyond the traditionally studied Chinese mainland and closely examines similar artifacts from the Japanese archipelago and the Korean Peninsula, dating from the fifth to seventh centuries. Detailed archaeological research analyzes the characteristics, craftsmanship, and spatial-temporal distribution of these artifacts across East Asia, aiming to clarify their broader significance in the context of East-West interactions.

Chiriboga, Carlos (Proyecto Arqueológico Regional Tintal)

[325] *El Tintal Revisited: 10 Years of Archaeological Research in North-Central Petén, Guatemala*

Until a decade ago, the site of El Tintal had been sporadically investigated by researchers working in the Central Karstic Uplands of north-central Petén. Most research in the immediate region focused on the emerging complexity identified at Nakbé and the imposing Late Preclassic monumentality of El Mirador. However, beginning in 2014, over 10 years of intensive research have been conducted at El Tintal, drastically transforming our understanding of the site's history and cultural development. This paper provides an overview of the research carried out at the site, highlighting the results of the Proyecto Arqueológico El Tintal (2014–2022) and the Proyecto Arqueológico Regional Tintal (2023–present). Evidence from archaeological excavations, settlement and landscape studies, as well as artifact and material analyses, has led to a reevaluation of our understanding of El Tintal's prolonged and complex occupation history, spanning from the Middle Preclassic to the Terminal Classic period (600 BCE–ca. 900 CE).

Chitwood, Anna (New South Associates)

[225] *The Age of Social Media: The Role of Archaeologists as Educators across Platforms*

Social media plays an important part in the dissemination of information in our world today. As we navigate the ever-changing landscapes of social media platforms, it is important to have conversations about our roles as educators online and the responsibilities we have on these platforms. As clickbait titles capture the eyes of social media users leading them to posts rife with misinformation, how do we combat this spreading misinformation? To better understand how best to navigate social media, online archaeology educators on both Tiktok and Instagram will be asked about their strategies online and their answers will be presented in this poster. Questions include a range of topics including overall experiences posting archaeological content online, feelings of personal responsibility, dealing with false or misinformation, and advice for other online archaeological educators.

Chiu, Scarlett [121] see Hogg, Nicholas

Choi, MinJoo [191] see Sjødahl, Julia

Chong, Emma, and Christina Giovas (Simon Fraser University)

[87] *From Shells to Stories: Investigating Cerion uva Exploitation in Curaçao*

Cerion uva (commonly known as Peanut snails) are found in archaeological context on the Caribbean island of Curaçao. Ethnohistorical data suggests *C. uva* snails were consumed by Curaçao's Indigenous peoples. However, there has been no archaeological data to confirm nor deny this claim. Past archaeological studies in Curaçao are mostly restricted to settlements and rock art. The Curaçao Cultural Landscape Project is one initiative aiming to broaden our knowledge of the past, bringing together multiple disciplines. As part of this project, my honors thesis contributes to our understanding of subsistence practices, during the Archaic period (ca. 5500–1400 BP). Using criteria developed from wider land snail studies (e.g., size, apex presence, burning, and location) my thesis tests whether *C. uva* snails were exploited or deposited naturally. By furthering research on lands snails, more information about the paleo-environmental conditions can be uncovered. This can lead to more insight into the diet of Indigenous peoples of Curaçao. It is important to create a solid foundation in distinguishing dietary from nondietary materials in the archaeological record. The study concludes that while there may not be a concrete conclusion, more research will be able to help identify the uses of *C. uva* snails in Curaçao.

Chorek, Sophie [301] see Quinn, Colin

Chouinard, Natalie (Northern Arizona University), and Chrissina Burke

[87] *Cross-Cutting Zooarchaeology: Butchery Analysis through Indigenous Methodologies*

Zooarchaeological research often relies heavily on quantitative data analyses and positivist interpretations that are statistically significant. Typically, we study human and animal interactions by characterizing animal processing, butchery, and consumption, including cut mark location on the bone, shape, size, quantity, and directionality. Here in the American Southwest, descriptions of butchery practices are often lacking. Additionally, zooarchaeology rarely incorporates diverse methods and perspectives leading to potentially harmful interpretations and knowledge creation that differs from that of Indigenous communities. The goals herein seek to expand our methodologies to include Indigenous perspectives and disrupt our colonial interpretations. Through this descriptive analysis, patterns of cut marks and other butchery modifications were identified using standardized zooarchaeological methods, but with intentional inclusion of Indigenous perspectives to respect and engage with the multifaceted relationships that exist between humans and animals.

Christiansen, Colin [183] see Buvit, Ian

Christie, Jessica (East Carolina University), and Josefina Vasquez Pazmino (USFQ)

[200] *The Water Temple of Koyoktor (Ecuador)*

At the foot of Yanakauri Hill in the community of Koyoktor lies a stone water temple attached to a series of quadrangular Inka-style rock sculptures. Water appears to have been channeled down this mountain referred to by its Inka-Kañari toponym, to fill the carved canals and basins of the temple. This site and mountain are again being used for ceremonial activities by the local community at certain times of the year. The inhabitants of Koyoktor define themselves as members of the Kañari people, children of the mythical macaws that appeared in the Culebrillas lagoon after the great flood. However, no images or representations of the Amazonian birds have been found in archaeological artifacts or excavated contexts. We reason that the Inka geometric, abstract style of rock carving which appropriates landscapes stands in contrast to portable Kañari iconography which celebrates local flora and fauna; for example, a unique bird-like tenon head was excavated in several Kañari-Inka contexts at Koyoktor, Ingapirka, and nearby sites. Using local community criteria and archaeology, the aim is to trace the link between prehispanic and contemporary Kañari through bird iconography, while engaging in a dialogue about origin myths, toponyms, and landscape appropriation.

Christie, Shaheen (Chronicle Heritage)

[215] *Evidence of Fragmentation and Decapitation Practices in the Funerary Treatment of the Dead in Western Roman Britain*

Recent studies using bioarchaeological data and evidence of mortuary treatment practices associated with decapitation burials have concluded there were regional and more nuanced site-by-site variations during the Late Roman period (third–fifth century AD) in western Roman Britain. This research presents the bioarchaeological and mortuary analysis results from 122 decapitation burials from 42 Late Roman period sites in western Britain. Data from these analyses reveal that decapitation burials in western Britain, in some cases, were a continuation of Late Iron Age (100 BC–AD 43) fragmentation rites and other mortuary behaviors, such as the scattering of human remains in settlements, ditches, and other isolated deposits. Previous studies of such burials have yielded opposing interpretations for the motivation behind the act of decapitation and subsequent treatment of those individuals, even in those contexts that appeared similar on the surface. Traditional interpretations about the motivations behind such burials include human sacrifice, execution, trophy taking, punishment of the dead, veneration, or “outsider” status. Case studies using the osteobiographical approach reveal that some individuals were interacted with in stages and potentially distinguished with an atypical or deviant identity compared to other decapitated and non-decapitated individuals in communities throughout western Roman Britain. *****This presentation will include images of human remains.**

Christol, Aurélien [273] see Villa, Valentina

Chu, Wei (Leiden University)

[384] *Beyond Caves: Exploring the Diversity and Adaptation of Early Human Settlement Patterns in East-Central Europe*

While caves have traditionally been seen as prime habitats for early hominins, the prevalence of open-air Aurignacian sites in east-central Europe has long invited a broader investigation into the spatial preferences and adaptive strategies of early humans in the region. One such early adaptation that has been suggested are open-air shelters. Despite their potential significance, the archaeological record of early Upper Paleolithic open-air structures, remains fragmentary and poorly understood, prompting a necessary shift in research methodologies. The HOME project aims to uncover and assess the diversity of human shelters in east-central Europe during the early Upper Paleolithic through systematic surveys and excavations. This research employs a cross-disciplinary approach including digital ethnographic datasets, geophysical prospection, and stratigraphically controlled excavations. The aim is to address different aspects of Paleolithic shelter archaeology, focusing on typological diversity, refining predictive models for field surveys, and comparing human habitation in local caves. Beyond documentation, the project seeks to reconstruct the socioeconomic dynamics of early Upper Paleolithic settlements, and the adaptive strategies employed by early humans. An expected outcome is to illuminate technological innovations and social practices that shaped human existence, revealing the multifunctional roles of these structures beyond serving as barriers against harsh environmental conditions.

Chuiyka, Jason (Woods Canyon Archaeological Consultants)

[55] *Ground Truthing Lidar Anomalies in the Great Sage Plain of Southeastern Utah*

Review of lidar data from southeastern Utah has found anomalies that some researchers have interpreted as an extensive network of prehistoric landscape modification features from the late Ancestral Puebloan occupation of the Great Sage Plain. These anomalies appear as parallel clusters of alignments on lidar, but field observations have not found them to present themselves very clearly. In some cases the anomalies are not observable on the ground at all, while more subtle features such as prehistoric road swales can be traced. Woods Canyon has used a variety of imagery sources on projects in the region, including lidar. Over the past five years, Woods Canyon has conducted several thousand acres of survey in areas where these and other lidar anomalies occur, and we have been able to observe hundreds of prospective locations where they are mapped. This paper presents background on the subject and provides a review of fieldwork observations. It will also include possible explanations of some of these anomalies as well as suggestions for archaeological testing to evaluate whether these features are natural, cultural, or possibly artifacts of lidar imaging.

Ciolek-Torello, Richard (Statistical Research Inc.), Tumurochir Batbayar (Mongolian Academy of Sciences, Institute of Archaeology), Tsend Amgalantugs (Mongolian Academy of Sciences, Institute of Archaeology), and Estevan Ramirez (Statistical Research Inc.)

[115] *The Uyghur Cultural Heritage Project: Emergent Urbanism in an Ancient Nomadic Landscape in Mongolia*

Most studies of urban development focus on sedentary agricultural populations. The nomadic empires of Mongolia provide an alternative perspective on urbanism. In 2024, archaeologists from Statistical Research Inc. and the Mongolian Academy of Sciences, Institute of Archaeology launched a multiyear study of urban centers built by the Uyghur Empire in the eighth century. Our initial research focused on mapping and modeling two walled towns, Biibulag and Tsagaan Sumiin Balgas using Drone Deploy and Agisoft Metashape Pro software, and photographing and modeling fragile rammed earth walls, stela, and other monuments with Polycam LiDAR and photographic software. An important aspect of our work was historic preservation; we hoped to create a digital record of these sites and their remains that could be used as a baseline for monitoring their preservation. We also conducted pedestrian and metal detector survey and test excavations at both sites that revealed different methods of wall construction and yielded pottery sherds, roof tiles, bone, wood, and metal that can be used to date the construction and occupation of these towns, and to identify exchange patterns and relationships to other contemporaneous towns as we try to understand the role urban centers played in this nomadic landscape.

Ciolek-Torello, Richard [122] see Ramirez, Estevan

Ciomek, Katarzyna [368] see Palonka, Radoslaw

Ciugudean, Horia [301] see Quinn, Colin

Civitello, Jamie (NPS, Bandelier National Monument), Cody Dalpra (NPS, Bandelier National Monument), Amy Montoya (NPS, Bandelier National Monument), Joaquin Montoya (NPS, Bandelier National Monument), and Alaina (Lane) Vielhauer (NPS, Bandelier National Monument)

[274] *Mining the Database: How Can Shifting Units of Analysis Shift Our Understanding of the Agricultural Landscape of the Southern Pajarito Plateau?*

From 1987 to 1991, a National Park Service team of archaeologists systematically surveyed over 45% of Bandelier National Monument. The research goal of the survey was to examine the process of community aggregation on the southern Pajarito Plateau during the late ancestral Pueblo periods. Toward that end, feature-level archaeological data and extensive environmental data were collected and entered into a relational database. The resulting analysis led to key insights into the process of aggregation on the plateau, including how settlement, demography, and agricultural pursuits interplay with aggregation. This paper will use that database, plus more recently collected park data, to explore how shifts in units of analysis can help understand the agricultural landscape throughout the Coalition and Classic periods in new ways. First, we redefine field houses as 1–2 room structures, and we also examine 1–2 room cavates for evidence of seasonal occupation. Second, we increase the spatial resolution of the database to more precisely map agricultural features onto the landscape to address geographic differences in feature type and placement. Lived landscapes are complex and contextual, and although archaeological datasets are woefully incomplete and coarse by nature, high-resolution survey data allows us flexibility in the ways we analyze these landscapes.

Clark, Amy (Harvard University)

[175] *Provisioning the Home*

One of Kuhn's most notable contributions to archaeological theory is on the subject of lithic provisioning. Though decisions regarding provisioning might seem simplistic and obvious to us today, as a species completely enmeshed in a world mediated by technology and material culture, equipping oneself with the tools and the raw materials to make them was something our lineage slowly learned over the course of human evolution. Kuhn distinguished between the decision to provision an individual or provision a location. This provisioned location was, most often, the home, and the provisioning of the home became a defining characteristic of homemaking. In this paper, I will highlight Kuhn's contribution to the study of lithic

provisioning and trace its trajectory within the Paleolithic, where we can see the roots of this behavior and how it articulated with other decisions regarding mobility and site use.

Clark, Amy [300] see Pailes, Matthew

Clark, Bonnie [322] see Kamp-Whittaker, April

Clark, Emily, Christopher Rodning (Tulane University), and Michelle Pigott (Tulane University)

[110] *Time and Indigenous Engagements with European Colonialism in Southeastern North America*

Indigenous peoples of what is now the southeastern United States interacted with Spanish, French, English, and American colonists at different points from the 1500s through the Removal period in the early 1800s. The nature of Indigenous engagement with different forms of European colonialism was shaped in part by long-term cultural histories of Indigenous peoples and places themselves. We consider in this paper examples drawn from the areas of Cherokee, Catawba, Choctaw, and Chickasaw towns to contextualize Indigenous-colonial interactions from the perspectives of the Native peoples and places themselves. Many elements of Indigenous cultural practice—during periods of early contacts with Europeans, during periods before then, and also during periods since then and continuing on into the present and future—emphasize the importance of maintaining balance in relationships between people and places, in relationships between different groups of people, and in relationships between humans and nonhuman entities. These principles are fundamental to understanding histories of European colonialism in the Southeast and Indigenous engagements with it.

Clark, Jeffery [385] see Bocinsky, Kyle

Clark, Jeffery [385] see Mills, Barbara

Clark, Jeffery [302] see Smith, Jaye

Clark, Julia [54] see Windle, Morgan

Clark, Loren (University of California, San Diego), Julien Fortin (El Centro Investigador del Sistema Acuifero de Quintana Roo), Dominique Rissolo (University of California, San Diego), Scott McAvoy (University of California, San Diego), and Helena Barba-Meinecke (INAH)

[381] *Navigating the Subterranean Landscapes of Quintana Roo, Mexico*

The karst caves of Quintana Roo are characterized by their complex passages and dynamic morphology. Currently, these submerged systems are observed by divers who move weightless through the silent caves, haloed in the white gleam of their flashlights. This sits in stark contrast to how humans and animals of the past would have navigated these once-dry caves during the Late Pleistocene and Early Holocene. This paper presents new and existing evidence of mining activities, navigational markers, and freshwater collection recorded alongside the creation of 2D and 3D datasets documenting cave features and morphology. Combining the wealth of knowledge and observations provided by local cave divers with high-resolution spatial analysis, this project seeks to refine our archaeological interpretations of human access and interaction within these cave systems.

Clark, Melissa [305] see Howey, Meghan

Clark, Morgan (Brown University)

[303] *How to Hear Voices from the Past: Recording/Reporting Speech in Classic Maya Writing*

Scholars of Maya epigraphy have been aware of quotatives in Maya hieroglyphs since Nikolai Grube's 1998 paper arguing for a reading of *cheheen* as "he/she/it says." However, there continues to be a lack of consensus about how to interpret the word's grammatical properties. I explore these and discuss how quotatives are defined (and how they are distinct from lexical verbs of saying). Drawing from ethnographic data, I revisit the contexts in which *cheheen* occurs to better understand the deployment of reported speech in the hieroglyphic corpus. Modern Mayan language data provides much needed perspectives on what it means to quote someone directly and suggests that the frequency with which quotatives are used correlates with certain speech genres. As is arguably the case with modern Mayan language counterparts, I propose that the

usage of quotatives in Classic Mayan has to do with authority and speaker/scribe agency over the creation of knowledge.

Clark, Travis [95] see Nelson, Zachary

Clary, Katie Stringer [340] see James, Sydney

Clasby, Ryan (Spencer Museum of Art, University of Kansas), and Jason Nesbitt (Tulane University)

[46] *Donald Lathrap, the Ucayali River, and the Enduring Value of Archaeological Legacy Collections*

The curation and stewardship of legacy collections has become a critical issue within the field of archaeology due to the high institutional costs in maintaining collections as well as the struggle to find adequate space to often store hundreds of boxes. These issues are further compounded by the ever-looming loss of intellectual memory as scholars pass away or otherwise leave the field. While giant strides have been made in the field of Amazonian archaeology in recent years, Donald Lathrap's influence continues to be felt throughout the discipline as scholars address and build off the ideas that he proposed as the result of his archaeological and ethnographic work along the Ucayali River in the Peruvian Amazon. Unfortunately, many of the collections that formed the basis for these ideas have been scattered throughout the United States and Peru and are at risk of losing their associated intellectual memory. In this paper, I summarize recent efforts to track down Lathrap's archaeological and ethnographic collections from the Ucayali River while also highlighting their potential (and realized) intellectual value, especially in light of new scientific techniques and renewed interest in Indigenous Amazonian cultural developments.

Clasby, Ryan [282] see Yamamoto, Atsushi

Clawson, Cole [314] see Rutherford, Allen

Clay, Vickie (Far Western Anthropological Research Group)

[322] *Indigenous Participation Sparking Archaeological Awareness on Nevada Survey*

Indigenous Peoples have long participated in data recovery projects in the Great Basin, primarily as passive observers (monitors); however, they are rarely involved with the initial survey and recording of cultural resources. During a recent green energy transmission corridor survey through Nevada, Tribal members including elders and young people with traditional knowledge were present with archaeologists during the entire field inventory and recordation of the corridor. Indigenous participants pointed out cultural phenomena that would not have been seen or understood by archaeologists. This sharing of cultural knowledge and stories resulted in a much richer and more robust inventory of the corridor, a feeling of mutual understanding and respect for the Indigenous Peoples that used and still use these places, and an awareness of the spiritual importance of the landscape, plants, and animals found throughout the Great Basin. Presence of Tribal members on survey should be a continuing practice in CRM.

Claypatch, Hunter [124] see Campos-Hernandez, Cinthia

Clayton, Lucia (Big Island Research)

[174] *Contextualizing Great Basin Rock Art: Dating Symbolic Behavior in a Changing Landscape*

The Volcanic Tableland in the Great Basin houses a rock art province with a wide array of archaeological sites created by First Nations peoples since the Late Pleistocene / Holocene transition. I look at how people in the past situated themselves in the landscape and structured their occupation patterns in the changing landscape. I use spatial and stylistic analyses to develop a local rock art sequence and relative chronology, and to identify associations between the imagery and other archaeological features. Identified stylistic phases are contextualized with obsidian hydration estimates, projectile points, and environmental phases to identify a potential absolute chronology. The results show that stylistic and spatial analyses of contextualized rock art are a powerful tool for investigating the structure and organization of past lifeways. By adding rock art imagery to other markers of past human behavior, I show the resilience of peoples' social networks in the

face of significant environmental variability and how they adapted the surrounding landscape to suit their occupation needs. The choices people made over ca. 10,000 years of creating rock art are a strand of evidence that adds a layer of understanding of the social and symbolic structures that are not always readily identified in the archaeological record.

Cleary Moungey, Megan [220] see Colley, Madeline

Cleghorn, Naomi (University of Texas, Arlington), Ximena Villagran (Universidade de São Paulo, Museu de Arqueologia e Etnologia), and Reagan Leigh Herdt (University of Wisconsin, Milwaukee)

[281] *Coastal Foraging at a Shifting Shore: Assessing Late MIS 3 Coastal Resource Use at Knysna Eastern Heads Cave 1 on the South Coast of South Africa*

The early MSA coastal forager record of the African southern coast includes considerable variation in foraging strategies. The earliest sites show evidence of systematic use of coastal resources as part of a broader foraging strategy. True shell middens appear slightly later and demonstrate the presence of a full-fledged coastal foraging adaptation (CFA). From MIS 5 to the early part of MIS 4 foragers invested in cultural knowledge systems that maximized efficient and regular access to coastal resources. But between the beginning of the penultimate glaciation and the intensified CFA of the Holocene, nothing is known about how coastal foragers dealt with the perturbations of shifting coastal ecosystems on the southern continental shelf. At Knysna Eastern Heads Cave 1, we identify evidence of coastal foraging and a brief transgression at the end of MIS 3. Using micromorphological, stratigraphic, and taxonomic data we assess whether this is evidence of a true CFA, and to what extent strategies were comparable to both earlier and later regional sites with coastal resource exploitation. We note that simply identifying the use of coastal resources does not necessarily demonstrate continuity in the cultural knowledge needed to support this adaptation.

Cleghorn, Naomi [281] see Esteban, Irene

Clements, Joshua

[372] *Investigating the Layer 16 Owl Cave Bison Bone Bed Lithic Assemblage*

This paper reexamines the lithics associated with the 9,000-year-old bison bone bed discovered in Owl Cave in 1966. This late Paleoindian assemblage (referred to as “Layer 16”) was initially reported in 1968; however, the discovery of mammoth bone below this stratum diverted attention away from what the investigators initially considered to be a “significant find.” Originally assigned as Agate Basin, the diagnostics recovered from Layer 16 have been reclassified as Angostura. While the Layer 18 Folsom assemblage is dominated by local volcanic glass sources, the bone bed tool assemblage reflects a much higher diversity in source use. Although further investigations of the bone bed are in progress, a range of recent Accelerator Mass Spectroscopy (AMS) assays support the possibility that the bone bed represents a single mass kill event typical of the Paleoindian period on the Plains.

Clifford, Brandon [354] see Vranich, Alexei

Cline, Ryan [336] see Gillaspie, Amy

Clingenpeel, Kaitlyn

[231] *Slipped and Scored: Network Analysis of Changing Ceramic Practice Centered on K'axob, Belize*

Embedded within any piece of pottery is the knowledge of the hands that made it and the knowledge of those who came before. This intergenerational exchange of knowledge, as manifested in the remains of pottery, can be tracked through the changes in slip, form, paste, and other identifying attributes over time using social network analysis methods of ceramic typology data. Centering focus on K'axob, Belize, and radiating out to include ceramic data from sites across the Maya region, this project will explore changes in ceramic practice from the Preclassic to Early Classic periods. The previous study on this same topic explored the transition from the Late Classic to Postclassic periods. This project will examine changes in ceramic style, technology, and participation in communities related to pottery in the face of periods of change and crisis. These changes

are tracked within the site of K'axob, across local sites, and regionally to chronologically map the ceramic representation of the geographic distribution of the exchange of knowledge.

Clow, Zachery (San Diego State University), Arion Mayes (San Diego State University), Arthur Joyce (University of Colorado, Boulder), and Akira Ichikawa

[290] *“Collapse” and Population Health in Oaxaca: How the Classic–Postclassic Transition Influenced Health and Disease at Río Viejo in the Lower Río Verde Valley*

The Classic–Postclassic transition is hypothesized to have affected health outcomes in the lower Río Verde Valley of Oaxaca, Mexico. Set within a multiscale approach, this research examined the relationships between health, diseases, culture, climatic changes, and the physical manifestations left behind on the skeleton from a biocultural perspective. Biomarkers of disease and physiological stress were analyzed to determine if population health at Río Viejo correlated to larger sociopolitical factors occurring at the time throughout Oaxaca. Here, frailty indexes were used to measure overall health in skeletal assemblages modeled after recent advancements in human biology and bioarchaeology on phenotypic versus skeletal frailty. To better capture potential site-specific health influences these frailty indexes were further tailored to the biocultural, archaeological, and population data at Río Viejo during the Classic–Postclassic transition. The results demonstrated very little variation of skeletal and dental disease markers indicative of disease burdens alongside the Classic–Postclassic transition in the lower Verde. Although overall disease burdens remained fairly stable at Río Viejo, individuals' childhood health and frailty scores did improve in the Early Postclassic possibly as a result of resilience and alternative strategies at the community level.

Cobb, Charles (University of Florida)

[342] *Getting Over Myself and Other Ruminations on Decolonizing Archaeology*

Randy McGuire's writings on Native American heritage and decolonization have had a widespread impact throughout North America, and they have certainly influenced my own work in the American Southeast. As he has emphasized, the path toward partnership and multivocality can be a rocky one, but one that archaeologists must follow. I consider some of my own experiences on this path, and how my time at Binghamton University was instrumental for setting the stage for my work with the Chickasaw Nation today.

Cobb, Charles [50] see Krus, Anthony

Coble, Shawn (Metropolitan State University of Denver), Benjamin Conroy (Metropolitan State University of Denver), Matthew Deegan (Metropolitan State University of Denver), Olivia Kemp (Metropolitan State University of Denver), and Michael J. Kolb (Metropolitan State University of Denver)

[336] *From Saloon to Secret Still: Distilling Alcohol in Early Twentieth-Century Denver*

The history of distilling alcohol in early twentieth-century Denver loosely follows the trajectory of other North American cities. The views of settling Euro-Americans followed the long-standing idea that alcohol was part of everyday life. Pre-prohibition saloons were a vibrant part of Denver's culture. An excavation performed on a brick-lined privy that was repurposed as a coal bin during the 1920s provides information on Prohibition-era Denver and a moonshine operation undertaken by Eugene Madden, a Denver councilman. Ethanol was discovered in various ketchup bottles, suggesting evidence of Prohibition bootlegging on campus. Within the brick-lined privy, 2,849 artifacts were discovered and separated into nine different categories. Most artifacts collected were glass shards (56%), with the second largest category being metal pieces and nails (23%). Most of the 1,607 glass shards found included condiment bottles, soda bottles, milk bottles, and medicine bottles with various makers' marks. It is worth noting that none of the identified glass were alcohol bottles. Additionally, 174 painted sherds of ceramic with floral designs were located, with several of them resembling Japanese-style China. The amount of bottle shards found in the privy indicate that there was bootlegging activity during the prohibition years in the Auraria neighborhood.

Cobos, Rafael (Universidad Autónoma Yucatán)

[283] *Maritime Archaeology along the Maya Seacoast of the Gulf of Mexico and the Caribbean Sea: What We Know Today and Where Are We Heading To?*

The first work on the role played by the sea during the prehispanic period in the Maya area was published in 1897. From that moment on, the study of the sea associated with Maya culture focused on recognizing (1) the importance of maritime trade in the emergence of Maya civilization, (2) goods that were transported in canoes, (3) studies on the routes followed by navigators and merchants around the Yucatán Peninsula, and (4) the shapes of the canoes used to transport those goods. Beginning in the 1970s, studies of ancient coastal communities have increased exponentially focusing on different chronological periods and aimed at analyzing coastal settlement patterns, understanding commercial interactions along the coast and inland, examining subsistence patterns, evaluating political and/or economic relations between inland sites and coastal settlements, studying the material culture found at seacoast sites to better understand local and regional developments, and identifying the ancient inhabitants that settled on coastal communities. With all this overwhelming data, two questions arise: What do we know today, and what is next for maritime studies of the Maya area? This paper focuses on answering in a general way those two questions that characterize today's maritime studies in the Maya area.

Cobos, Rafael [376] see Jiménez Cano, Nayeli

Coburn, James

[79] *Continental Connections: The Biological Connection between Korea and Japan during the Yayoi Period*
Migration and integration has always been a key link between the continent and the Japanese archipelago. This is especially significant during the later stage of the Jomon period throughout the Kofun period. This is seen in a number of different ways, from ceramic production and development through metal working. Recently, there has been a bigger push to understand the biological connections between the Yamato people and the continental migrants. In this paper, I will discuss both the skeletal features during the waves of migration from the beginning of the Yayoi period throughout the Kofun period. I will also look at practices such as ritual tooth ablation and how that has impacted both the understanding of the blending of cultures during the Yayoi period and what impact that has on Yamato culture during the prehistoric periods. *****This presentation will include images of human remains.**

Coc, Arvin [381] see Ratcliffe, Jessica

Cochran, Lindsey, Steven Filoromo (TRC), and Kendanne Altizer (University of North Georgia, Dahlonega Campus)

[178] *Environmental Attributes that Influence Transtemporal Settlement Patterning in the Historic Southeastern United States*

Environmental resources in the historical period in the southeastern United States were targeted differently than in any other preceding time period. While regional connections have been made between natural resource and historic settlement locations, few cross-cultural and cross-temporal synthesis exist. In this paper, we seek to articulate the major differences between settlements in coastal colonial and antebellum South Carolina, colonial and Gullah Geechee antebellum and postbellum Georgia, and tenant farming settlements in Louisiana, Georgia, Alabama, and Mississippi to explore the factors that determine the place of settlement and the relationship between people and their environment. Ultimately, we find that proximity to labor, proximity to resources that could be exploited on an industrial scale, and proximity to social networks to be the major contributing factors in small and midsize postcolonial settlement strategies.

Cochrane, Ethan (University of Auckland), Seth Quintus, Matiu Prebble (University of Canterbury), and Ta'iao Tautunu (National University of Samoa)

[113] *Collective Action Problems Led to Increased Social Hierarchy in Ancient Samoa: Evidence from Architectural Chronologies and Paleoenvironments*

We have identified the evolutionary-ecological processes that explain the rise of increasingly hierarchical society in Samoa over the last 1,000 years. Our lidar, ground survey, and rock-wall chronologies in the Falefa Valley demonstrate that the construction of large boundary walls began 900–600 years ago, shortly after dramatic population rise in Sāmoa. Construction of small field walls followed. Densities of both rock wall types are associated with areas of higher dryland agricultural potential. Earliest wall construction was also

pencontemporaneous with forest removal that created a more productive wetland environment in an adjacent region of the valley, an area later a focus of agricultural ditching. We propose that with population rise collective-action problems associated with the maintenance and defense of valuable agricultural land were mediated by the rise of community leaders. We now further test this proposal with new chronologies of monumental platforms, predicting that they will postdate the rise of these leaders.

Cochrane, Ethan [157] see Constantino Perez, Glauco

Coco, Emily (Yale University), and Radu Iovita (New York University)

[332] *Agent-Based Dispersal Simulations Reveal Multiple Rapid Northern Routes for the Second Neanderthal Dispersal from Western to Eastern Eurasia: Implications for Central Asia*

Genetic and archaeological evidence imply a second major movement of Neanderthals from Western to Central and Eastern Eurasia sometime in the Late Pleistocene. Genetic data suggest a date of 120–80 ka for the dispersal and the archaeological record provides an earliest date of arrival in the Altai by ca. 60 ka. Because the number of archaeological sites linking the two regions is very small, the exact route taken and its timing have been the matter of considerable debate. Using agent-based least-cost path simulations, we show here that the northern route through the Urals and southern Siberia was the most likely route taken. Agents reach the Altai during two time windows when the climate was mild: MIS 5e and MIS 3, the latter coinciding with the archaeological evidence from Chagyrskaya and Okladnikov Caves in the Russian Altai. Interestingly, these successful northern routes appear to avoid Central Asia completely. However, analysis of all modeled routes demonstrates the potential importance of the Turgan Lowlands of Kazakhstan for facilitating dispersal to known Neanderthal sites, like Teshik-Tash and Obi Rakhmat. Here, we present the results of the dispersal simulations and discuss the implications for future research in Central Asia.

Coco, Emily [332] see Namen, Abay

Codding, Brian, Kasey Cole (University of Utah), Daniel Dalmas (University of Utah), Weston McCool (University of Utah), and Ishmael Medina (University of Utah)

[126] *Applying Behavioral Ecology to Help Restore Indigenous Socioenvironmental Systems in the Bear River Basin*

Indigenous land-use decisions influenced plants and animals across North America for thousands of years. These dynamics were disrupted by settler-colonial invasions, leading to declines in ecosystem function and health. Restoring Indigenous socioenvironmental systems and the cultural keystone species they support requires first identifying how human decisions interacted dynamically with local environmental variation. Behavioral ecology informed by Indigenous ecological knowledge provides one framework to help elucidate these patterns. Here we leverage this approach to model the factors that maximized cultural keystone species occurrence, animal diversity, and ecosystem function in the past across the Bear River Basin, and to forecast how these can be restored in the future under anthropogenic climate regimes.

Codding, Brian [196] see Cole, Kasey

Codding, Brian [60] see Jones, Terry

Codding, Brian [126] see McCool, Weston

Codding, Brian [126] see Medina, Ishmael

Codding, Brian [385] see Vernon, Kenneth

Codding, Brian [126] see Zeanah, David

Codilean, Alexandru [174] see Gleadow, Andrew

Coe, Marion (Marshall University)

[90] *Petal to the Nettle: Seasonality, Scheduling, and Perishables in Eastern North America*

Perishable artifacts made from plants are uniquely positioned as physical connections to the landscape and environment. The seasonal nature of perishable manufacturing, from locating the plant on the landscape, to manufacturing material culture, to using tools has the potential to illustrate the entangled qualities of small-scale mobile societies' ecological and social relationships. Important plants for perishable artifacts like

milkweed and nettle have predictable growing and harvesting seasons, which people monitored when organizing a variety of annual activities. This poster utilizes a model developed in the Great Basin for assigning seasonality of plant growth and collection alongside overlapping social activities, reapplying the approach to archaeological materials from the southeastern United States and Appalachia.

Coffey, Grant (Crow Canyon Archaeological Center), and Katharine Williams (University of New Mexico)

[55] *A New Look: Revisiting Archaeological Landscapes in the Central Mesa Verde Region Using Lidar*

The public release of lidar data by the USGS includes much of the Four Corners area of the US Southwest and has allowed for the production of high-resolution digital elevation models that enable rapid visualization of large portions of the landscape at multiple scales. As archaeologists have begun to process and explore these spatial data, new aspects of the cultural landscape (e.g., road segments, agricultural features, natural features, and archaeological communities) have been documented. The Crow Canyon Archaeological Center has collected over four decades of archaeological data from the central Mesa Verde region including survey, excavation, and laboratory data. These Big Datasets lend themselves to landscape-level and regional analyses. However, the logistics associated with managing and updating these large datasets, while integrating new information sources, such as lidar, are challenging. This paper examines lidar in the context of existing datasets and the potential for combining new and legacy data to address a variety of research questions at the landscape scale. More specifically, we discuss some of the challenges in working with multiscale archaeological data and with ground truthing suspected cultural features recognized from lidar data.

Coffey, Grant [55] see Ryan, Susan

Cohen, Anna (Florida State University)

[171] *Imperial Public Relations: What Can Ceramic Sciences (Actually) Tell Us about Political Consolidation?*

Archaeologists and other scholars find that, today and in the past, political entities like states and empires were diverse and sometimes short-lived. This means that the integration of diverse communities required a targeted and organized approach that served as an ancient public relations campaign for political elites. Material evidence for these public relations campaigns includes the integration of old and new symbols on pottery, architecture, and other objects. By combining past and new symbols along with ritual and labor practices, political elites tried to establish legitimacy and, ultimately, to consolidate power. While scientific ceramic data are often used to address themes like political consolidation, this paper considers what exactly ceramic data, particularly geochemical and petrographic data, can tell us about ancient public relations campaigns. Using geochemical characterization, petrographic, and other Postclassic period (AD 1000–1530) ceramic data from the Purépecha city of Angamuco in western Mesoamerica, I explore the possibilities and limits of using such information to address questions about political consolidation. In doing so, this paper contributes to discussions of empire building and how we combine multiple lines of scientific ceramic data in our research claims.

Cohen, Anna [95] see Cannon, Molly

Cohen, Chelsea (University of Pennsylvania)

[107] *Of Water and Wood: The Archaeology of Wharfage and Landmaking in the Eighteenth-Century Middle Atlantic*

Changes to the landscape brought on by European colonialism are well studied, but those changes did not stop at land's end. The amphibious nature of European colonialism necessitated vast terrestrial resources to support aquatic connections across empire. This amphibious colonialism is especially apparent in the material residues of wharves, used to open deep water anchorage for European ships. Wharf construction facilitated significant landscape changes, taking terrestrial resources to fill and build out blocks of land in colonial waterfronts, often changing the flow and course of waterways in the process. This paper combines archaeological, palynological, and archival data to retrace the changes to the landscape caused by British maritime expansion in North American Middle Atlantic ports. Focusing on Northern Virginia in the seventeenth to nineteenth centuries, it aggregates legacy archaeological data with palynological and archival

research to reconstruct how building out waterfronts changed the larger landscape. This interdisciplinary approach traces both the construction of new waterfronts and the acres of trees, soil, and other terrestrial materials used to facilitate waterfront landmaking. By considering wharfage as a microcosm of larger colonial land-restructuring processes, this paper explores how colonial land management exercised control over land, water, and the people that plied between them.

Cohen, Grey [188] see Parbus, Brett

Coil, Reed (Nazarbayev University)

[332] *Giving Relevance to the Old: Training Kazakhstani Students in Stone Age Methods*

Kazakhstan has a rich archaeological past, but much of the focus by national and international archaeologists continues to be on Bronze Age, Iron Age, and later periods. In recent years, Paleolithic researchers have developed projects to expand our knowledge on the deeper past and the hominins that made this region their home. Here, we will discuss how we have begun to train students in data collection and analysis methods more appropriate for the Paleolithic in an academic environment where there is still a dearth of accessible archaeological sites from the Paleolithic and a heavy emphasis on methods for later period research. Simulated excavations, temporally transferrable lab methods, research-integrated course curricula, and extensive research assistantship training provide undergraduate students with the necessary skillset to collect data and analyze lithic and faunal remains integral to the understanding of Paleolithic lifeways. In their senior theses, students have trained in methods by first working with later period sites so they can then apply their skills to Stone Age contexts, either from new excavations or legacy collections. With these pedagogical strategies, we aim to increase interest in the Paleolithic period in Kazakhstan, which has massive potential considering the extensive Paleolithic records in neighboring countries.

Cole, Emily [127] see Larson, Tara

Cole, Kasey (University of Utah), Brian Coddling, Auriana Dunn (University of Utah), and Austin Green (University of Utah)

[196] *Impacts of Settler-Colonial Invasion on Ecosystem Structure and Animal Occurrence in the Bear River Basin*

Exogenous factors, such as climate, and endogenous dynamics, such as human resource and landscape modification influence ecological conditions. Over long temporal scales, these dynamics create socioenvironmental systems (SES) that influence the distribution of plant and animal species across the landscape. However, in many contexts, Indigenous SES and their ecological legacies have been disrupted by European settler-colonial invasion, forced removal, and genocide leading to the collapse of Indigenous populations and their coupled ecosystems. One example includes the Bear River Massacre, where 400–450 members of the Northwestern Band for the Shoshone Nation were murdered and had their ancestral land stolen by the US government in 1864. In this study, we employ Survival Analyses using Random Forest machine learning to evaluate the impacts of this tragedy on species loss in the region. We use species occurrence data from archaeological, paleontological, historical, ethnographic, and contemporary wildlife survey records to assess the impacts of the timing of colonization on the occurrence of culturally significant taxa, such as bison, deer, wolves, and beaver, and taxa belonging to different ecological and dietary functional groups in the area. The results of our study will help inform the Tribal-led ecological restoration efforts of the Bear River Massacre site.

Cole, Kasey [126] see Coddling, Brian

Cole, Kasey [196] see Damstedt, Jane

Cole, Kasey [196] see Dunn, Auriana

Cole, Kasey [196] see Reid, Ethan

Coleman, Wendi (Graduate Center, City University of New York)

[87] *Human-Environment Dynamics at Alluitsoq*

The colonization of Greenland in the eighteenth century led to the development of various regions of increasing cultural interaction between the Kalaallit, Danish traders and colonists, and German Moravian

missionaries. The Alluitsoq project in Southern Greenland attempts to address the various aspects of these interactions at Alluitsoq and its surrounding area. Alluitsoq is the location of a former Moravian mission site of Lichtenau, established in 1774. The Danish and the Moravians attempted to influence Kalaallit society with conflicting policies. Desiring to maintain the valuable trade of marine resources from the Kalaallit, the Danish colonies encouraged the Kalaallit population to retain their current seminomadic patterns while introducing an imperial trade system that commoditized local marine resources. In contrast, the Moravians attempted to restructure and mold the lifestyles of the Kalaallit according to mission ordinances. This paper utilizes the zooarchaeological analysis of a large and well-preserved archaeofauna collection and historical records including catch statistics to consider how the Kalaallit navigated these conflicting influences and the potential impact of these interactions on human-environment dynamics and human-animal relationships. Additionally, it emphasizes how food resources show the relationships between the Kalaallit and their environment at the site throughout the late eighteenth to twentieth centuries.

Coll, Luis [331] see Lane, Kevin

Collard, Mark [82] see McCauley, Brea

Collazzi, Charlene [225] see Nicholson, Christopher

Colley, Madeline (Cochise College), and Megan Cleary Moungey (Cochise College)

[220] *It Is Our Mess Now: An Application of Angela Kipp's Methodology to the Cochise College Archaeological Repository (CCAR)*

This project builds on the still burgeoning discussion surrounding curation and repository management. Initially, the Cochise College Archaeological Repository (CCAR) was characterized by a lack of comprehensive documentation, inadequate storage conditions, and an absence of standardized curation protocols. Our priority was to move the collection out of an inadequate store space. Then, recognizing the need for a systematic approach, our team adopted exhibit curator Angela Kipp's methodology. Specifically, the authors wanted to establish a clear documentation procedure, bring materials up to modern curation standards, and implement a cataloguing system that aligns with current best practices in archaeological curation. Progress has been significant, including photo documentation of the original condition of the repository and similar documentation following a complete reorganization of the repository. All site items are now housed together and ordered numerically. Moving forward, the authors plan to establish a methodology for processing artifacts. To clarify, we intend to separate artifacts from registered sites from those donated from personal collections or seized by Border Patrol. As we process the artifacts, items will be documented, catalogued, housed in updated storage materials, and labeled appropriately. Overall, this project serves to improve the academic value of the repository.

Collins, Gillian [190] see Brewer, Jaxson

Collins, Matthew [288] see Rabinow, Sophie

Collins, Ryan

[296] *Technology and Tradition: Emergent Architectural Specialization at Yaxuná, Yucatán, Mexico (900–300 BC)*
For the Middle Preclassic Maya (900–300 BC), the category of skilled laborers we would label specialists was emergent. The process of specialization thus entailed balancing several factors, including practice, acquiring technological and resource knowledge, navigating established socio-religious customs, and making time to do so in an increasingly sedentary society. The public spaces most recognizably subject to architectural standardization and specialized construction were civic ceremonial complexes. Rather than being spaces for imitation or appropriation, the local manifestation of public architecture was a conceptual innovation lab—where, over time, individual choices played a role in establishing local and regional construction standards. Here, I argue that early specialization played out as experimentation—not only in looking forward to the envisioned form of reconstituted architectural design but also as a mitigation for the treatment of the present phase—which would be irrevocably altered through destructive ritual intrusions and a preserved through

concealment. Evidence from Middle Preclassic constructions at Yaxuná reveals an experimental play with materials, form, and technology—where productions from one phase would necessitate innovations in the next, in an interplay that would codify traditions for the treatment of space.

Colten, Roger [301] see Kracht, Emily

Coltman, Jeremy

[381] *Cenotes, Caves, and Rain Gods: The Sacred Geography of Chichen Itza*

One of the striking features of the Yucatán Peninsula are the many cenotes that dot the landscape, a unique natural feature factored into the ritual and religion of the region's inhabitants. The landscape itself, dotted throughout with these cenotes, form cosmograms that recall the primordial landscape of creation and become essential to settlement. The site of Chichen Itza is a prime example of this. As much as the cenotes are considered part of the site core of Chichen Itza, so too should the caves that were dedicated to the rain cult. Like the Sacred Cenote and Cenote Xtoloc, the caves Balamkanché and Balamkú would have also been magnets drawing settlement to the area. The sacbeob linking Chichen Itza to these caves devoted to Tlaloc are statements of appropriation that tie these landmarks to the site core.

Colton, Michael [379] see Banikazemi, Cyrus

Coltrain, Joan [126] see McCool, Weston

Colwell, Chip

[342] *“Archaeology and the First Americans”: Randall H. McGuire’s Seminal Article*

Somewhere in the mid-1990s I began to fall out of love with archaeology. The reason? A rising and profound discomfort with the discipline's bankrupt relationship with Native Americans. When I turned to the library stacks for help (as we did back then), I found only a few voices in the wilderness that spoke out about archaeology's tangled colonialist, nationalist, and racist legacies. It was Randall H. McGuire's "Archaeology and the First Americans" that most inspired me to action. Published in 1992 in *American Anthropologist*, the article arrived at the transformative moment between NAGPRA's passage and the field's turn toward more collaborative practices with Indigenous peoples. McGuire's historical analysis was not only uniquely insightful but also penetrating in its politics. Both a look backward on how we got to where we were, and a call to action for where we should go. Through the years, my printed copy became filled with so much marginalia and so marked up that essentially every single line was underlined, if not triple underlined. Now, more than 30 years later, I pause to reflect on how this paper was truly "seminal"—for its originality as much as its influence on the development of future events.

Comer, Douglas (CSRM Foundation Inc.), Jacob Comer (CSRM Foundation Inc.), Bruce Chapman (NASA Jet Propulsion Lab), Benjamin Holt (NASA Jet Propulsion Lab), and Adrian Borsa (Scripps Oceanographic Institute)

[315] *Satellites and Sociocultural Economics in the Pacific*

Using data collected by satellite and aerial remote sensing platforms, we developed an economic model of human niche construction at the islands in the Pacific. We argue that types of niches are determined by human choice, given environmental conditions, which can be both assets and challenges. Deciding to surmount challenges increases cultural capital, which we carefully define here as knowledge. We use here examples of Indigenous knowledge, in particular Indigenous navigational knowledge developed to recognize ocean dynamics that can be seen in models and images generated with data collected by satellites. We argue that this and other forms of Indigenous knowledge were used to develop recognizable forms of economic capital, especially landesque capital, as well as social capital. These forms of capital can be seen clearly in models and images generated at the island of Pohnpei, including the World Heritage Site of Nan Madol.

Comer, Douglas [240] see Comer, Jacob

Comer, Jacob (Cultural Site Research and Management Foundation), and Douglas Comer (Cultural Site Research and Management Foundation)

[240] *Analysis with Lidar of Coastal Environments on Pohnpei*

An airborne lidar dataset collected over most of the island, and the entire coast, of Pohnpei, in the Federated States of Micronesia, allows for the development of a variety of digital models of the surveyed area. These models include digital terrain models (DTMs), which represent the surface of the ground without vegetation. Here we present some observations on the results of this survey, focusing on associations between anthropogenic modifications of Pohnpei's landscapes and the ecologies and productive capacities of those landscapes. We consider, for example, how modifications near the coast might differ from modifications farther inland.

Comer, Jacob [315] see Comer, Douglas

Compton-Gore, Kate (Museum of Northern Arizona), and Kathleen Fine-Dare (Fort Lewis College)

[186] *Learning to Listen, Learning to Ask: NAGPRA Compliance, Indigenous Environmental Justice, and Addressing Contamination in Museums*

Despite the decades old regulatory requirement under NAGPRA for museums and institutions to report known hazards such as pesticides, very few policies or procedures exist that address hazards, or ensure that potential or remaining toxins not escape notice. Although guidelines and recommendations addressed the issue in the 1990s and early 2000s, the problem was largely forgotten until recently. We suggest another element, that of Tribal cultural knowledge, also be included in policies and guidelines regarding what are historically, overwhelmingly Western notions of toxicity. Contamination entails not only physical harm to items and individual organisms but may bring spiritual and relational harm to those interacting with contaminated items. Indigenous communities have spoken out about the lack of disclosure regarding pesticide use; however, cultural knowledge regarding the intersections between physical, spiritual, and interpersonal contamination and toxicity is rarely considered in policy, practice, or discourse. Although this broadly embodied issue at once ontological, epistemological, ethical, and axiological (relational) can be interpreted as overstepping NAGPRA statute and regulations, we argue that the legacy of contamination in museums and institutions is not only an environmental health issue but an Indigenous environmental justice and human rights issue that requires attention to complex cultural frameworks.

Comstock, Aaron [192] see Raab, Bailey

Conard, Nicholas (University of Tübingen), and Sibylle Wolf (University of Tübingen)

[279] *The Aurignacian of the Swabian Jura and the Age of Ivory*

Paleolithic research in the Central Europe has its roots in the 1860s with the early excavations in Swabian Jura of southwestern Germany. Since then, every generation has contributed to this tradition. Among the many well-studied Paleolithic periods, the Swabian Aurignacian, the first phase of the Upper Paleolithic dating from ca. 42 to 35 ka BP, stands out for its exceptional material culture including some of the earliest evidence for 3D personal ornaments, figurative art, therianthrope imagery, and musical instruments. Aurignacian hunter-gatherers made these and many other classes of symbolic and practical artifacts from mammoth ivory, and mammoths played an important role in both their daily and spiritual lives. Additionally, carved ivory depictions of mammoths represent a particularly numerous category within Aurignacian iconography. This paper summarizes the ecology of the mammoth steppe and presents the ivory technology of the Aurignacian before turning to the art and music of the Swabian Aurignacian. This review of the archaeological record demonstrates why the Age of Ivory is an entirely fitting term for this exceptional period in human history.

Conard, Nicholas [156] see Starkovich, Britt

Conger, Megan (Center for Applied Isotope Studies)

[50] *The Fur Trade in Sixteenth-Century Iroquoia: Results and Implications from Radiocarbon Dating at Two Tionontate Sites*

This paper presents the results of radiocarbon dating and Bayesian chronological modeling at Sidey-Mackay and McQueen-McConnell, two Tionontate villages in southern Ontario, Canada, which demonstrate early sixteenth-century Indigenous participation in the transatlantic fur trade. The Transatlantic fur trade was transformative in intertwining all aspects of European and Indigenous worlds during the seventeenth and eighteenth centuries in northeastern North America. This trade, and the world-system it constituted, had roots in the norms and connections established by some of the earliest sixteenth-century European-Indigenous encounters on the North Atlantic Coast. The formalization of the fur trade by European powers in 1580 is used archaeologically as a chronological horizon marker, before which trade was more likely to be incidental or opportunistic. This paper argues that socioeconomic transformations to accommodate participation in the fur trade, particularly in the organization of labor and movement of populations, were enacted by Indigenous communities much earlier than this historically derived date. Sidey-Mackay and McQueen-McConnell, previously thought to date to ca. AD 1580, are demonstrated to have been occupied as much as 70 years earlier. The implications of this chronological realignment are considered in the context of colonial narratives that center European economic power and minimize Indigenous agency in world-system expansion.

Conlan, Christine (Simon Fraser University), Dongya Yang (Simon Fraser University), Lindsey Paskulin (University of British Columbia), Hua Zhang (Simon Fraser University), and Claudia Kraan (National Archaeological Anthropological Memory Management)

[288] *A Multiproxy Investigation into Southern Caribbean Sea Turtle Populations to Assess Long-Term Impacts of Human Activities for Baseline Reconstructions*

Caribbean sea turtle histories are deeply intertwined with past human activities. It has long been acknowledged that to fully support sea turtle recovery we must account for the activities acting on populations prior to modern baselines. As sea turtles are long-lived, species level data spanning multiple generations must be captured to accurately identify biomolecular response to change and assess species resilience to human activities. Species level identifications are needed for zooarchaeologists to accurately reconstruct past populations so that they can serve as comparative datasets for conservation planning. Caribbean zooarchaeological analyses relying on morphological identifications have traditionally been hindered by high rates of fragmentation for sea turtle bones, preventing species attributions. We apply Zooarchaeology by Mass Spectrometry (ZooMS) to 25 highly fragmented turtle remains from Curaçao and Bonaire, held in the NAAM foundation's legacy collections. Subsequent ancient DNA analysis is performed on specimens identified as green turtles (*Chelonia mydas*) to gain insight into temporal changes in relative abundance and genetic biodiversity. Our data show the potential for ZooMS and ancient DNA to provide long-term perspectives on sea turtle population dynamics and the value of data from larger sample sets for conservation policy that supports sustainable management of these charismatic keystone species.

Conlan, Christine [288] see Giovas, Christina

Conlee, Christina [159] see Poirier, Marcela

Conlogue, Emily (Harvard University)

[125] *Preliminary Spatial Analysis of Morada Structures in the US Southwest*

In the years prior to the annexation of New Mexico as a US territory, social life in many traditional Nuevomexicano villages revolved around Catholic spaces and events. Throughout the nineteenth century and the first half of the twentieth century, a lay Catholic order known as Los Hermanos Penitentes played a critical role in holding together the religious fabric of rural Hispano communities. In the decades since, the order has seen a decline in membership. Subsequently many of its chapter houses, or *moradas*, have fallen into disuse and can be difficult to distinguish from other structures in the archaeological record. Systematic archaeological studies of *moradas* have yet to be conducted beyond analysis of a handful of individual sites. This poster provides preliminary spatial analysis of these structures and their environs using ArcGIS Pro, laying the groundwork for future field research into lay Catholic architecture.

Conrad, Cyler (Pacific Northwest National Laboratory), Lindsey Renaud (Pacific Northwest National Laboratory), and Amoret Bunn (Pacific Northwest National Laboratory)

[125] *Orchard Archaeology and Legacy Lead Arsenate Contamination at Hanford and White Bluffs, Washington*
[WITHDRAWN]

Conrad, Cyler [320] see Hamilton, Marian

Conrad, Grace (Ohio State University), and Robert Cook (Ohio State University)

[268] *“Peaching” Together the Puzzle: Relocating and Reexcavating the Peach Orchard Site, Hamilton County, Ohio*
Fieldnotes, hand-drawn maps, personal communication, and some door-knocking: these are the pieces of the puzzle that allowed us to relocate a Fort Ancient site located near Cincinnati, Ohio. The Peach Orchard site sits atop a prominent hill, overlooking the more well-known Turpin site and the floodplain of the Little Miami River. It was first professionally excavated in the 1880s by archaeologists affiliated with Harvard University. The assemblage collected from Peach Orchard, as well as the fieldnotes and maps made during its excavation, are currently housed at the Peabody Museum of Archaeology and Ethnology at Harvard University. By piecing together these primary documents and curated artifacts and the knowledge of local residents, we have recently been able to relocate this site. Here we present a preliminary analysis of the layout of this site, based on results of a geophysical survey conducted in the winter of 2023 and a shovel test survey conducted during the summer of 2024. We highlight potential areas for future exploration and discuss the important role that legacy collections and primary documents can and should play in the development of research projects.

Conroy, Benjamin [336] see Coble, Shawn

Constantino Perez, Glauco, Mercedes Okumura, Astolfo Araujo (University of São Paulo), and Ethan Cochrane (University of Auckland)

[157] *Phylogenetic Analysis of Tupiguarani Pottery in Sao Paulo: Revealing Cultural Transmission through Archaeological Record*

Several pottery-producing groups have been documented in the Brazilian state of São Paulo through archaeological field research. Archaeological sites of the Tupiguarani Tradition are the most widespread, but the nature of precolonial relationships between the Tupiguarani and other indigenous groups remains unclear. This paper employs phylogenetic methods to analyze Tupiguarani and related ceramics sites, focusing on their morphological, decorative, and technological features. Our study spans four key regions within São Paulo: the northern coast, the southern coast, the central area represented by the Tietê River Valley, and the southern Paranapanema Valley. The results uncover new patterns of cultural transmission in São Paulo and shed light on interactions between indigenous groups before European contact. Additionally, our findings demonstrate the value of cultural transmission theory in formulating testable hypotheses about teaching and learning processes in the past.

Conte, Eric [173] see Molle, Guillaume

Contenti, Dustin (SWCA), and Tyler Molter (SWCA)

[192] *Investigation of Roasting Pits in the Southern Region of the Great Basin*

Roasting pits have been investigated extensively in the southwest region of the United States, but the southwest Great Basin has evidence of many roasting pits in the region with minimal research done. This poster will investigate the expansion of roasting pits into the Great Basin region, focusing on roasting pits located around Gold Butte National Park, Mormon Mountain, the Sheep Mountain Range, and Spring Mountain. If available, this poster will present radiocarbon dates collected from roasting pits in these different areas along with geospatial data to raise questions about seasonal use and frequency of use over time. This poster presents prehistoric archaeological evidence located in the Southern Great Basin region in patterns of usage.

Conti, Alberto

[245] *Southwestern Idaho Pottery Sites: A Summary of the Data*

In southwestern Idaho, pottery becomes common in archaeological contexts during the Late Archaic period

at approximately 1,000 years ago. This pottery is generally referred to as Shoshoni Ware or Intermountain Brownware. A review of the current data indicates that sites that have ceramic vessels occur throughout upland, riverine, and non-riverine lowland settings and have a high degree of assemblage variability. Based on the assemblages, sites are defined as either residential or temporary camps. The dataset consists of a total of 83 precontact sites across five counties in southwestern Idaho. Temper sourcing studies from other parts of the Great Basin are used to supplement the lack of significant sourcing studies in Idaho. The results of the study indicate that pottery in southwestern Idaho is expediently manufactured as needed and is generally not transported between site locations. Furthermore, the wide distribution across ecozones and the high assemblage variability demonstrates that pottery was likely used to process a wide array of resources, beyond the purported ethnographic uses. This study emphasizes the value in combining data from both academic and management contexts in pursuit of understanding the archaeological past.

Contreras, Daniel

[282] *Chronologies of Interaction: Bayesian Modeling of the Chavín Phenomenon*

Even after nearly a century of research into the relationships between the monumental centers of the Middle Formative period in the Central Andes, chronological precision remains as elusive as it is fundamental to understanding the dynamics of interaction. Radiocarbon data, which are becoming available in quantity and quality and the subject of new analytical techniques, provide a line of evidence that is independent of models of the Chavín Phenomenon, and so provide a means of testing conceptual models (e.g., directional spread vs. interactive genesis). The ideal use of radiocarbon data is to move beyond compilation of dates to site-based Bayesian models that incorporate both dates themselves and prior information based on stratigraphic excavation. Here I explore the relationships between three prominent and well-dated centers of the Middle Formative period—Chavín de Huántar, Pacopampa, and Kuntur Wasi—through Bayesian modeling of radiocarbon dates associated with the phases in which those sites shared material culture and iconography. Juxtaposing the resulting chronologies makes it possible to move beyond positing interaction between these sites toward exploring the character of that interaction.

Contreras, Daniel [223] see Nishida, Talia

Contreras, Daniel [64] see Ramshaw, Elizabeth

Contreras, Daniel [64] see Roberts, Jacob

Cook, Paris, Audrey Davis, Sequoia Stark, and Jonathan Kent (Metropolitan State University of Denver)

[336] *Unearthing History: Excavations at the Emanuel Church and Washington School Sites in West Denver*

The Emmanuel Gallery of the Auraria Campus in Denver represents one of the many remnants of the old Auraria neighborhood, originally a former Episcopal Church built in 1887. Using the artifacts from the 1988 excavation of another small church, alley, and school privy that lay directly behind the Emmanuel Gallery, our project reexamines the community known as the Free Evangelical Congregational Church, and their connectivity with the rest of the ethnically diverse Auraria neighborhood from 1919 to 1947 when the church was active. We seek to holistically understand relationship between the Free Evangelical Congregational Church and the broader Auraria neighborhood during the early to mid-twentieth century using both the artifacts found during the 1988 excavations and oral histories collected from that era.

Cook, Robert (Ohio State University), Eleanora Reber (UNC, Wilmington), and Julie Lierenz (Ohio State University)

[192] *The Center and the Plain: Results from an Analysis of Absorbed Residues from Mississippian and Fort Ancient Pottery from the Guard Site*

The Guard site (12D29) has a mixture of nonlocal Mississippian Plain and local Fort Ancient pottery types. Mississippian Plain pottery is more concentrated in the central plaza whereas the Fort Ancient pottery is more common in residential areas. Here we report on an absorbed pottery residue analysis from a small sample for each of these pottery types to better understand spatial and functional differences. The most notable distinction was a spatial one in terms of the chemical signature distinguishing C₃ (probably EAC in this case) and C₄ plants (probably maize in this case), with the sherds with residues for C₃ being more concentrated in

the plaza whereas sherds with residues for C₄ were more common in residential areas. There was no distinction between these characteristics for pottery type. In addition, conifer biomarkers were present in most of the residues in varying amounts suggesting that perhaps a coating was used to seal the pottery, perhaps to make vessels watertight.

Cook, Robert [268] see Conrad, Grace

Cook, Robert [370] see Green, William

Cook, Robert [85] see Nair, Arvind

Cook, Robert [192] see Raab, Bailey

Cook Hale, Jessica (Submerged Landscapes Research Centre, University of Bradford), Simon Fitch (Submerged Landscapes Research Centre, University of Bradford), Nathan Hale (Full Fathom Five), Matthew Newton (University of Florida), and C. Hemmings (Paleo To Pioneer) [345] *Linking the Knowns with the Knowns: Articulating Submerged Landscapes at the Mesoscale*

Studies of submerged landscapes tend to fall into two categories: landscape-scaled assessments or focused investigations of individual sites. This bipolar orientation is a function of the nature of submerged paleo-landscape studies, which face greater constraints than terrestrial ones. These can be partially overcome by advances in remote sensing allowing higher-resolution mapping of seabed and stratigraphy and advances in sampling to better identify archaeological deposits. However, a middle range remains between intensive and extensive studies, within which site relationships to one another are not necessarily well documented or understood. This is critical for understanding formerly coastal occupations that lack onshore analogs. One method in which a middle-range (pun intended) approach might be carried out employs broader scale spatial analyses to tease out correlations of sites to reconstructed paleoclimatological, paleoshoreline, and paleoecological conditions, onshore and off, but still relies on assessment at a distance. Another method that we discuss here deploys a less sophisticated approach: diver survey to visually map in features across multiple sites to establish linkages between locations. Once mapped, features and the space between can be used alongside the sites themselves to add chronological and cultural detail to the landscape, including paleocoastal adaptations without analog.

Cooley, Delaney (University of Oklahoma)

[364] *Resilience in Stone: The Role of Lithic Technology in Studying Colonial Encounters*

[WITHDRAWN]

Coon, Sarah (University of California, Riverside), and Michelle Rawlings (University of California, Riverside)

[287] *Un-Othering Paleoanthropology: A Bioarchaeology of Human Ancestors*

Historically, paleoanthropology has been largely separated from other anthropological disciplines. However, the history of the discipline overlaps with the birth of both archaeology and biological anthropology, often sharing paradigms and scientific tool kits. These disciplines emerged from the desire to better understand and define humanity and the human past. How we define “human” is contentious, and species outside of our own, *Homo sapiens sapiens*, have historically been “Othered.” We consider the history of paleoanthropology as a discipline which emerged alongside Enlightenment paradigms and still carries the burden of that origin. Here, we argue that paleoanthropology is inextricably linked in methodology, paradigm, and disciplinary history to a four-fields anthropological approach. We provide a review of theory in ethnogenesis and archaeological methods and present existing examples of a synthesis between paleoanthropology and archaeological disciplines. We propose a critical evaluation of paleoanthropology as bioarchaeology of human ancestors and provide visions for paleoanthropological futurisms. This includes the application and incorporation of archaeological and bioarchaeological methods and theory to paleoanthropology, including such principles as the bioarchaeology of care and osteobiography. Our objective is to un-Other paleoanthropology and its subjects, reinvestigating the humanity of human relatives. This presentation will include photographs of hominin skeletal remains. ***This presentation will include images of human remains.

Cooper, Anwen, Martyn Allen (Oxford Archaeology), Poly Baker (Historic England), Alice Dobinson (Oxford Archaeology), and Fay Worley (Historic England)

[207] *Beyond (and Including) Academia in Zooarchaeological Research in Britain: The “Rewilding” Later Prehistory Project*

The “Rewilding” Later Prehistory project has set a developer-funded fieldwork organization—Oxford Archaeology—and the wider developer-funded industry center stage of exciting cross-sector multidisciplinary research with environmental archaeology colleagues from academia, Historic England, and pioneering rewilding projects in Britain. Alongside wielding an unprecedented volume of zooarchaeological and other environmental evidence to produce a novel account of wildlife from 2500 BCE to 100 CE, project researchers are working with practitioners across the discipline to transform access to zooarchaeological data. This paper elicits three zooarchaeological aspects of this work: (1) an overview of zooarchaeological evidence for prehistoric wildlife from three case study areas; (2) community-wide work on the design, development, and testing of a new digital system for routinely logging zooarchaeological remains via OASIS, the national infrastructure for registering archaeological projects; and (3) emerging results from a multistranded study of the wildness (or not) of horses over the duration of the Holocene in Britain. We hope to convey the groundbreaking research that can be achieved through, as well as reflecting on the challenges and joys of joined-up zooarchaeology beyond (and including) academia.

Cooper, Jago [371] see Samson, Alice

Cooper, Jago [371] see Valcárcel Rojas, Roberto

Cooperider, Cindy [326] see McAllister, Christine

Cootsona, Melanie (UC Berkeley)

[87] *Oral Histories and Zooarchaeology: Where Are the Songbirds?*

In this poster I demonstrate how oral histories can help fill blanks in the (zoo)archaeological record. It is well-known (and documented and tested) that not everything that happened in the past ends up in archaeologist’s test units, screens, and collections. For zooarchaeologists, presence and absence of species is used to make larger arguments about the environment, economy, religious practices, and diet. This test case contrasts a legacy collection from Picuris Pueblo (New Mexico) excavated in the 1960s by Dr. Herbert Dick and reanalyzed by the author with oral histories conducted at the Pueblo also by the author. Small birds, particularly songbirds and similarly sized aves, are not found in the collection but are described by participants to be important food sources, especially when on the go. Including oral history narratives in zooarchaeological analyses produces histories which more accurately reflect the lived experiences of Indigenous peoples today and in the past.

Copeland, Steve [191] see Hughes, Katherine

Copeland, Steve [86] see Satterwhite, R. David

Coppa, Alfredo [283] see Cucina, Andrea

Coppock, Rachel (Mississippi State University)

[276] *Poetics on the Frontier: Using Poetics of Violence to Frame Skeletal Trauma at Colorado State Hospital*

This paper explores trauma patterning in a sample of 40 individuals associated with Colorado State Hospital dating from 1879 to 1898. Beginning in 1992, the remains of at least 155 individuals from unmarked graves were disinterred due to the developmental expansion of the San Carlos Correctional Facility. Interpretations of the behavioral cause of traumatic injuries can allow for the examination of possible socioeconomic or sociocultural factors that influence an individual’s life history. Analyzing demographic distribution of injury patterns can demonstrate to what extent different cohorts of individuals experienced differential risks of trauma. Results from this subsample were then compared to similar institutions in New York and Wisconsin utilizing the Poetics of Violence lens. Of the 40 adult individuals assessed, 27 (67.5%) exhibited at least one fracture, a significantly higher frequency than in other contemporary institutional contexts. The extensive trauma in this sample fits patterns of occupational injuries and interpersonal violence, signifying the vocational

and institutional hazards that these individuals faced. Taken with archival and documentary evidence, analysis of Colorado's early political economy revealed unique intersections of class distinction, state governance, gendered divisions of labor, violence, and institutional practices on the American western frontier. This presentation will not include images of human remains.

Corbett, Jack (Portland State University)

[242] *La Cueva de Las Manitas en contexto: Redescubrir La Cañada en el siglo XXI*

Aunque La Cueva de Las Manitas es un sitio singular, la realidad es que existe en un contexto ecológico y sociocultural complejo que imponen múltiples condiciones en su exploración, análisis, y puesta en valor. La necesidad de trabajar siempre con atención a la comunidad de Domingullo define factores que van más allá que valores arqueológicos y científicos. De hecho la necesidad tomar en cuenta toda la región de La Cañada impone límites pero también abre posibilidades de la integración de La Cueva de Las Manitas en un proceso de redescubrir una zona en gran medida marginada desde casi hace dos siglos. La Cueva figura como pieza central en la promoción de un programa de ecoturismo regional conocido como La Ruta del Río Grande, y sirve como ancla de La Primera Feria Cultural de la Ruta del Río Grande, anunciado por el 4 de julio de 2025. Llevar a cabo este re-descubrimiento implica una colaboración desde comunidades indígenas y fundaciones hasta gobiernos nacionales e instituciones internacionales, todos apoyando a La Cueva de Las Manitas.

Corbin, Clay [279] see Sedlmayr, Jayc

Corcoran, Katie [231] see Hirshman, Amy

Cordell, Ann (Florida Museum of Natural History)

[111] *The Influence of Tim Kohler's Early Pottery Analysis on Pottery Studies in Florida and the Greater Southeast*

Even as a grad student, Tim Kohler was a renaissance individual in terms of expertise with the artifacts and materials of the southeastern USA. At the Woodland Weeden Island period McKeithen site in North Florida, his innovative statistical analyses and computerized mapping documented chronological and demographic patterning. Status areas were identified partly from pottery attribute analyses defining elite, trade, and utilitarian wares. Tim by no means abandoned consideration of pottery when he left for the Southwest, but this was maybe the last time he got his hands dirty with firsthand analyses of physical and technological characteristics. Tim greatly influenced my own work with McKeithen pottery. Traditional microscopy, refiring experiments, and comparisons to local clays allowed fine tuning of manufacturing origins and statuses. Nonlocal manufacture was mostly based on anecdotal consensus rather than known distribution of clays. Fast forward a few decades, and anecdotal consensus is replaced with data from specialized analyses of Weeden Island and related pottery and clays from dozens of sites. My petrographic work has been in collaboration with Neill Wallis and others incorporating NAA and LA-ICP-MS analyses. Our combination of methods has spurred comparable research in other regions and time periods in Florida and the greater Southeast.

Cordero, Robin (SWCA), Paisley DeFreese (SWCA), and Nadia Waski (SWCA)

[228] *Beef, Beer, Lamb, and Liquor—A Glimpse into the 1883 Santa Fe Tertio-Millennial Expo: Monitoring of Refuse Deposits at the El Castillo / La Secoya Retirement Community, City of Santa Fe, New Mexico*

The establishment of the City of Santa Fe as a premier destination for tourism and New Mexico as a territory rich in resources and prime for investment is often traced to one singular historical event, the peculiarly named Santa Fe Tertio-Millennial Celebration and Exposition, held for 45 days in the summer of 1883. Devised by wealthy Santa Fe businessmen in cooperation with the Atchison, Topeka, Santa Fe Railroad, who had just established a line to Santa Fe in 1880, the objective of the event was to attract the attention of people from the eastern states of the union and showcase the economic opportunities and diverse culture of the New Mexico territory. This expo featured parades, horseraces, mining and minerals exhibits, Native American tribal wares and dances, and samples of New Mexican cuisine. During 2023 archaeological monitoring of cistern construction at the El Castillo / La Secoya property in downtown Santa Fe, New Mexico, SWCA archaeologists documented a dense refuse deposit associated with this expo, providing archaeologists with a unique opportunity to investigate a specific event in history with an emphasis on the cuisine, libations, and mercurial delights associated with this event.

Cordova, Carlos [332] see Iovita, Radu

Corey, Kasey (University of Mississippi), John Walden, Carolyn Freiwald (University of Mississippi), Julie Hoggarth (Baylor University), and Jaime Awe (Northern Arizona University)

[320] *Maya on the Move: Migration, Status, and Health at Late Classic Lower Dover, Belize*

The Late Classic period (AD 600–900) in the Maya lowlands saw the rise of a multitude of smaller Maya kingdoms. Some polities were founded by larger hegemonic powers, while others represented local level developments. One important way of discerning between these two possibilities rests on identifying the role migration played in the formation of these centers, and examining whether the individuals involved in the rise of such kingdoms were local or nonlocal. A growing number of studies in Mesoamerica show that population movement was common, but we still have a limited understanding of how migration impacted key aspects of peoples' lives and overarching political systems. This study examines the intersection of health, status, and migration among the Late Classic Maya at Lower Dover, Belize, to identify the factors which contributed to a person's status as migrant, and its effect on their life and surroundings thereafter. Combined with an understanding of the sociopolitical status of individuals and analysis of osteological health markers, we use Strontium ($^{87}\text{Sr}/^{86}\text{Sr}$) and Oxygen ($\delta^{18}\text{O}$) isotopic data to understand the relationship between migration, status, and physical health to create a well-rounded reconstruction of the political and demographic dynamics underlying the rise of a Late Classic polity.

Corl, Kristin (University of Texas, San Antonio), and Randee Fladeboe (Florida Museum of Natural History)

[87] *Avian Evidence as a Proxy for Investigating Behavioral and Environmental Change at the Harris Site*

The Harris Site (LA 1867) is a Late Pithouse period (AD 550–1000) agricultural village located along the upper Mimbres River Valley in New Mexico. Faunal remains recovered from the Harris site indicate that inhabitants continued to depend on a wide variety of wild resources even as they transitioned into a more sedentary agricultural subsistence strategy. The bird remains in particular illuminate how people living at the Harris site were producing changes in their surrounding environment and altering the ways in which they were interacting with a wide variety of bird species. We present our analysis of these remains and their depositional contexts with the aim of better understanding how complex human-environmental management strategies and their cascading effects on particular species may be reflected archaeologically.

Corneli, Katy [39] see Riley, Tim

Corr, Molly (Arizona State University)

[361] *Ancient Environmental DNA: A Novel Approach to Investigating an Early Classic Period Hohokam Trash Mound Context*

While various ethnographic and archaeological studies have shed light on different plant use in the Southwest, the breadth of plant use remains more enigmatic within the archaeological record. Like most artifacts studied in the archaeological record, ecofacts are at the mercy of preservational biases, which often favor specific contexts and plant species. However, using environmental DNA (eDNA), or the genetic material obtained from sediments, in conjunction with other archaeobotanical analyses can better position archaeologists to characterize vegetation at a given site. This study aims to build on previous work by investigating plant use at AZ U:9:319(ASM), an early Classic period Hohokam trash mound site located in Mesa, Arizona, through the use of eDNA. Additionally, this investigation is a novel pursuit as it is the first to implement eDNA techniques in a Hohokam trash mound context, allowing us to highlight the strengths and weaknesses of eDNA in this context. By detailing our methodology and discussing the implications of eDNA analysis, we hope to better understand and articulate the use of both domesticated and wild plants and, more broadly, resource management during a critical time of social transformation and florescence for the Hohokam peoples.

Corr, Molly [361] see Wheeler, Dean

Correa, Francisco [180] see Aguilar Aceves, Héctor

Correa, Leticia (University of São Paulo), Astolfo Araujo (University of São Paulo), and Camilo Neto (University of São Paulo)

[121] *Modeling Hunter-Gatherer Mobility in São Paulo State, Southeastern (Brazil)*

Hunter-gatherer dispersion in São Paulo State, Southeastern (Brazil), is mainly studied based on the traditional technological and morphological analyses of artifacts, where special attention has been given to arrowheads. In addition to absolute dating, this approach constitutes the basis for making inferences about human dispersal. Although many results have been achieved, showing a great cultural diversity in contemporary periods over more than 12,000 years, possible migration routes are still far from being understood. Based on our recent database that showed the existence of more than a thousand archaeological sites in the area, we explored time and space by observing possible paths taking into account some considerations obtained from ethnographic data from South American groups.

Correa Lau, Jacqueline (Universidad de Tarapacá, Arica, Chile), Calogero Santoro (Universidad de Tarapacá), Ester Echenique (Universidad de Tarapacá), Claudio Latorre (Pontificia Universidad Católica de Chile), and José Capriles (Pennsylvania State University)

[39] *Life Histories Conserved in the Unku Inka Fibers*

Unku were masculine tunics that safeguarded life stories crossing different cultures and periods in their fibers. They acted as territorial insignia of the empire generating a close and dynamic relationship between the state and provincial communities. *Unku* production was regulated under morphological, technical, and stylistic standards that could explain the agency of concatenated state structures and the identities of provincial communities. In this symbiosis, could the explicit values of the state have been reproduced and those of the local communities implicitly adapted? To explore the relationship between local knowledge and state technical knowledge, we studied low and high visibility attributes, resulting from different social practices. We analyzed these objects macroscopically to define the high visibility attributes and with archaeometric studies for the low visibility attributes. Radiocarbon dates highlight the need for specialized analytical studies, mainly on decontextualized pieces. Stable isotope analyses coincide in indicating that the camelid by-products necessary to produce *unku* involved camelids from similar elevations and/or foraging regimes. In short, the fibers preserve inalienable life histories that represent the vestiges that today testify to the dialectical processes associated with important cultural developments such as the Inka.

Cortell-Nicolau, Alfredo [114] see Barton, C. Michael

Cory, Mackenzie, and Carlton Shield Chief Gover (University of Kansas)

[189] *Old Methods, New Approaches: Rethinking Stone Circle Feature Recording at Hell Gap*

Domestic stone circles, commonly known as tipi rings, are among the most prevalent feature types on the Northwest Plains, with hundreds of sites documented. Despite their significance in understanding the domestic lives of Indigenous communities, researchers often overlook them, recording them with minimal time investment and little further consideration. This neglect stems partly from the belief that stone circles contain few artifacts and partly from the cost of precisely recording large numbers of them. In this poster, we present our methodology for intensively recording the stone circles at the Hell Gap landscape (48GO305 and 48GO556) and explain why we chose to record these features by hand. Over just five days, our field school crew uncovered significant artifact density within these features—findings that standard methods or drones would likely have missed. Based on these promising results, we plan to refine our methods in the next field season by integrating precision GPS mapping with our hand-drawn maps.

Cory, Mackenzie [368] see Radchenko, Simon

Cossich-Vielman, Margarita

[100] *Muros, vallas y cercas: Los signos de fortalezas en la escritura jeroglífica náhuatl*

La escritura jeroglífica náhuatl es un sistema logosilábico constituido por signos palabras (logogramas) y signos sonidos (fonogramas). En los documentos del siglo XVI (códices y lienzos) los signos de fortalezas están asociados al logograma TENA que provienen de la palabra en náhuatl *tenamitl* que se traduce al español como 'muro'. En esta conferencia se hará un recorrido por los ejemplos que existen en códices y lienzos de este

logograma en topónimos de México, Guatemala y El Salvador donde se observa gran variedad iconográfica de este signo. Se complementará con un mapa de sus apariciones en las regiones nahuas durante el siglo XVI y se tratará de buscar una correlación entre los topónimos y su arquitectura para descubrir si la utilización del logograma TENA corresponde a un rasgo arquitectónico de los lugares, a algún rasgo natural de la geografía o más bien a un signo con sus variantes que se estandarizaron exclusivamente para el sistema de escritura jeroglífica náhuatl.

Cossin, Zev, Amanda Butler, Georgia Dolan (American University), Katharine Grace McCartha (American University), and Kaitlyn Rice (American University)

[216] *A Disposable Footprint: The Archaeological Legacy of A Single-Use Consumer Explosion at a Minnesota Railroad Boomtown (ca. 1890–1910)*

The trillion dollar market for e-commerce sales has transformed the infrastructural landscape into one that delivers commodities to consumers in record time. Amazon Prime freight containers and delivery trucks have provided a ubiquitous convenience that has changed the material realities of our everyday lives in substantive ways. In this paper we explore the origins of this consumer revolution in the late nineteenth and early twentieth centuries as US railroad infrastructures spawned new boomtowns west of the Mississippi, delivered the first single-use commodities to consumers in record time, and propelled dispossession of tribal lands and local ecologies. We discuss our preliminary analyses of artifacts from one railroad boomtown in Winnipeg Junction, MN (ca. 1890–1910), where a large saloon trash midden and historic documents have revealed dramatic details of life for the mostly immigrant residents of this rural boomtown before it was soon abandoned. Crown caps, bottles, dry cell batteries, and imported tableware and alcohol, as well as receipts of purchase, reveal the rapidity with which the railroad provided rural residents access to the latest technologies and fashions. Archaeology here provides an intimate look at the lives of people caught up in early boom-bust towns and the unintended consequences of innovation.

Cossin, Zev [159] see Vasquez, Noelle

Costion, Kirk (Mesa Community College)

[361] *Artifact Distribution and Density Patterns in a Transitional Early Classic Period Hohokam Trash Mound at AZ U:9:319(ASM), Mesa, Arizona*

This presentation will report the results of an analysis of artifact distribution and density patterns in a well preserved transitional early Classic period Hohokam trash mound. The aforementioned trash mound is located at the small site of AZ U:9:319(ASM) in north-central Mesa, Arizona, along the northeastern margins of what was the ancient residential village associated with the Mesa Grande platform mound complex. The artifacts analyzed in this study were excavated as part of Mesa Community College's archaeological field methods course during the 2020, 2022, and 2023 field seasons. Excavations in four test units encountered between ~40 and 70 cm of intact trash mound deposits, while excavations in four other test units encountered a deeply buried cultural layer that was not part of the trash mound feature. Distribution and density patterns for ceramic sherds, lithic debitage, and charcoal will be reported for both trash mound deposits and the non-trash mound cultural layers in order to compare these contexts. The goals of this analysis are to provide insights about refuse disposal behavior and other domestic activities in this context at the edge of a large Hohokam residential community. These results will be compared to previously investigated Hohokam trash mound contexts.

Cottingham, Kathryn [107] see Palace, Michael

Cottle Peacock, Clelie [178] see Wyatt, Andrew

Coughlin, Nathan (Indiana University of Pennsylvania)

[128] *Deep beneath the Surface: A Geophysical and Geomorphic Assessment of the Mary Rinn Archaeological Site*

The Mary Rinn archaeological site is interpreted as a village site, radiocarbon dated AD 850–1550 along Crooked Creek in Indiana County, Pennsylvania. However, there is nearly continuous evidence of human habitation within the Cowanshannck-Crooked Creeks watershed between 16,500 and 500 years ago,

corresponding with the Paleoindian through Woodland periods in Pennsylvania. The site has shown evidence of being stratified through previous studies and excavations. This study is aimed to confirm that the site is stratified as well as explore minimally invasive techniques to yield maximum data recovery. This is done by utilizing ground-penetrating radar (GPR) to identify potential buried landscapes to be subsequently verified (i.e., ground truthed). The ground truthing is conducted by hand using a hand-operated soil auger. Within the Mary Rinn archaeological site, there has been no recorded testing like what this study has done. This study will expand on the current geoarchaeological interpretations of the Mary Rinn site and will provide valuable information for future geoarchaeological survey and archaeological testing that can significantly inform deep testing locations and depths and thus limit overall site disturbance to answer archaeological questions.

Counts, Derek (University of Wisconsin, Milwaukee), Erin Averett (Creighton University), and Michael Toumazou (Davidson College)

[81] *An Ethnography of Looting: Constructing Alternative Archaeologies in Modern Cyprus*

Recent shifts in archaeology have brought nuanced perspectives to undocumented digging and looting, acknowledging social justice issues tied to subsistence digging and expanding the definition of archaeology to embrace alternative and indigenous understandings of cultural heritage. Our project examines local, unscientific ways of understanding the past, challenging who has the right to own and interpret cultural heritage using Athienou, Cyprus, as a case study. Through interviews conducted between 1990 and 1995 with local looters, their descendants, and key figures involved in the antiquities market from the late nineteenth century until the 1960s, we aim to uncover previously unrecorded or marginalized local perspectives on cultural heritage. These interviews are contextualized alongside evidence of looting uncovered by the Athienou Archaeological Project and archival records. This research, grounded in archaeological ethnography and autoethnography, complicates the narratives around undocumented excavation and constructs an alternative archaeological history of the region. The evolving attitudes toward cultural heritage in Athienou reflect broader societal changes in Cyprus in the nineteenth–twentieth centuries, offering a microcosmic view of the island’s complex relationship with its past.

Coutu, Ashley (University of Oxford)

[279] *From Tusk to Town: Sourcing Flows of African Ivory*

Using an artifact biography approach combining archival, archaeological and scientific data, it is becoming easier to source raw materials such as ivory “from tusk to town.” By mapping artifact journeys, we learn how materials move and are eventually crafted and valued in different cultural contexts to their origins. This paper will explore some of the key case studies and future potential of these methods with a focus on how African ivory was central to developing nodes of trans regional routes along the Red Sea and across the Indian Ocean in the last millennium.

Couturier, Kathy [92] see Wurtz Penton, Michelle

Cova, Elisabetta (University of Wisconsin, Milwaukee)

[70] *The Origins of the Milwaukee Public Museum and its European Connections*

The Milwaukee Public Museum, officially founded in 1882, but in fact in its early stages since 1851, was at the forefront of nineteenth-century museography at a crucial time for both the establishment of Wisconsin as a state of the Union and the institution of museums in the United States. This paper investigates the historical, cultural, and social context within which MPM was established in the late 1800s and explores the connections between MPM’s early history and that of similar museums in Europe. In northern Italy in particular, museums emerged not only as a consequence of the origins of prehistory as a discipline and the idea of the Italian nation but also as a cultural institution serving the community. The paper will explore similar trends in the early years of MPM and also consider the political role MPM played in the settlement of Milwaukee by Europeans.

Covarrubias Ale, Gabriela [56] see Flores-Fernandez, Carola

Coverdale, Julia**[326]** *It's Kiln-ing Me: Revisiting Pottery Firing Techniques on the Precontact Colorado Plateau*

Pottery firing is one of the final and most important steps in the process of ceramic manufacturing. This paper will explore what archaeologists understand about the process of ceramic firing in the Four Corners region, specifically focusing on the Pueblo II (CE 900–1150) and Pueblo III (CE 1150–1300) time periods.

Archaeological evidence, or lack thereof, of firing methods and kilns will additionally be explored to discuss pottery firing in this region. The composition of the paste of these pots will also be considered in revisiting firing methods, as well as how these firing methods vary across the region and reflect their environment and community. Finally, I will discuss assumptions archaeologists make about these firing methods when compared to the archaeological and ethnographic evidence.

Cowan, Isabella, and Courtney Hofman (University of Oklahoma)**[193]** *Collinsella intestinalis as Potential Marker of Processed Dairy Consumption*

Maillard Reaction products (MRPs) are formed during the polymerization of a sugar and amino acid in the presence of heat, most of which add desirable flavor and aroma to the food we eat such as bread, powdered milk products, and other thermally treated items. MRPs have been shown to impact the composition and diversity of the human gut microbiome, especially in the context of industrially processed food items. Previous research has shown one common MRP, fructoselysine (which is produced during the hydrolysis of whey protein), dramatically increases the absolute abundance of *Collinsella intestinalis* in germ-free mice inoculated with human flora. Given that the consumption of MRP products may stimulate the proliferation of *C. intestinalis* in the human gut flora, here we aim to determine if presence of *C. intestinalis* DNA in human coprolites serves as a reliable indicator of consumption of thermally processed foods with MRPs such as bread, cereals, and milk products. By comparing humans with wild gorillas and chimpanzees—which do not consume thermally treated products—we can determine if *C. intestinalis* is present in the *Homo* gastrointestinal system regardless of food preparation methods. This could serve as a marker of processed dairy consumption in the past.

Cowan, Jacqueline (Indiana University)**[87]** *A Comparison of Faunal Assemblages of Two Gila Forks Sites in the Upper Gila Region*

The Mogollon-Mimbres culture is well known for its production of distinctive pottery styles and the expansive cultural connections through the American Southwest and Northern Mexico. Located approximately 5 km apart, the occupations of the Twin Pines Village and South Diamond Creek Pueblo sites in the Gila National Forest and Wilderness date primarily to the Georgetown Phase (AD 550–650) and the Mimbres Classic Phase (AD 1000–1130). Despite their proximity and overlapping temporal occupations, recent archaeological excavations revealed contrasts in the faunal assemblages present at these two sites. This study aims to use faunal data and analysis to investigate the types animal remains present, their abundance, and evidence of butchery or cooking. The results of each site's assemblage are compared to understand diet variability and animal resource access within the Upper Gila Region.

Cox, Brian (University of Washington)**[300]** *Ochre Manufacturing at the Tanginak Springs Site*

The Tanginak Springs site, on Sitkalidak Island, Kodiak Alaska, dates to the earliest (Ocean Bay (I) culture-historical period on the Kodiak Archipelago. As is typical of sites of the time, there are several red ochre “floors,” along with the tools used to manufacture the ochre. There appears to be a significant ochre manufacturing industry during the Ocean Bay I period, although the specifics of that industry are not well understood. Here, I present a technological analysis of the grinders used to produce ochre pigment to understand the way in which ochre was manufactured through the 1,500-year occupation of the site, with implications for the use of ochre by Ocean Bay period communities more generally. The strongly faceted grindstones feature the occlusal surfaces at the time Alutiiq ancestors stopped using the tool. By evaluating the variability of ochre grinders stratigraphically, I will explore changes in the ways that Alutiiq ancestors used their tools, in particular the intensity of use of ochre-grinding tools. The relative stratigraphic positions of ochre grinders, ochre floors, and other tool classes will be examined to paint a picture of the ways that Alutiiq ancestors lived in their space and how they used ochre.

Cox, Chris [345] see Mullins, Tyler

Cox, Kim

[353] *Counting Time: Calendar Systems in the Rock Art of Paint Rock, Texas (41CCI)*

The site of Paint Rock, Texas (41CCI), is a 300 m broken limestone bluff along the Concho River that contains dozens of spectacular solar interactions with rock art that was placed there over the course of two millennia. Through five years of observation, the members of the Paint Rock Project have recorded over 50 solar interactions that mark specific times on a daily calendar (sunrise, sunset, and solar noon) and on an annual cycle (the equinoxes, solstices, and cross-quarter days). Several of these interactions tell stories that are identifiable from recorded Mesoamerican and Southwestern mythologies, and other more recent ones that are recognizable to our Comanche and Apache colleagues.

Cox, Whitney (Rowan University)

[353] *It's (Still) About Time: Calendar Systems in the Lower Pecos*

Following the talk by Kim Cox, this talk will further detail the importance of the calendar systems preserved in the rock art and its solar interactions at Paint Rock in the Lower Pecos, Texas. By creating rock art panels that intersect with the natural landscape and continue to mark events in time with solar motion, the artists effectively instilled life into their creations, making pieces that moved with time—and thus were, in essence, alive. The function of this rock art as a calendar system is made even clearer by the inclusion of eighteenth-century art that incorporates Spanish missionary elements that are themselves tied to specific points on the Gregorian calendar. By incorporating both Indigenous and colonial markers of time on the same panels, the artists blended elements of different religious traditions into their work, further emphasizing the sacred nature of timekeeping and its function in the rock art.

Crabtree, Pam (New York University)

[373] *Ethical Considerations in Closing a Zooarchaeological Comparative Collection*

I have spent nearly 35 years building a comparative zooarchaeological collection at New York University that includes both modern comparative specimens and heritage collections. I plan to retire in 2026, and it is likely that I will not be replaced. This presentation will address the ethical questions that surround closing a comparative collection. How do I find appropriate homes for both the modern comparative specimens and the heritage collections? How can I accomplish this in an ethical way that guarantees that the collection can find a home or homes where it will be accessible to other scholars and students? How can I make sure that as much documentation as possible accompanies the comparative and heritage collections? While there is a lot of literature on building comparative collections, the questions surrounding closing a comparative collection have not been discussed in detail. This presentation will address these issues.

Craig, Oliver [278] see Carolus, Christina

Crater Gershtein, Kathryn [207] see Breslawski, Ryan

Crawford, Dawn (AR Consultants Inc.; Southern Methodist University), Alan Skinner (AR Consultants Inc.), and McKenzie Alford (Southern Methodist University)

[275] *Safeguarding a Long Legacy: Preserving Jay C. Blaine's Collections*

During his lifetime, Jay C. Blaine was a prolific avocational archaeologist, whose expertise professional and avocational archaeologists relied on. Upon his passing at 99, Jay's friends faced finding new homes for his collections. S. Alan Skinner, owner of AR Consultants Inc., took on the responsibility of preserving Jay's legacy for future researchers. Upon receiving temporary custody of Jay's collections, Crawford reached out to repositories in Texas, California, and Nevada. This paper provides details on the planning and preparation of the Jay C. Blaine Memorial Collections for accession at Southern Methodist University and the Nevada State Museum. Additional portions of the collections are still being prepared for other repositories in Texas and Oklahoma. This paper provides an example of the management and care of legacy collections by a CRM firm. As academic institutions struggle with dwindling resources, CRM firms with experience in curation preparation can assist in the growing legacy collection management issue. While it is a heavy burden for firms

to take on, working with these collections provides community outreach opportunities and the chance to preserve collections from their regions for future generations rather than allowing them to be discarded.

Crawford, Dawn [378] see Kovacevich, Brigitte

Creel, Andrea (University of California, Berkeley)

[219] *Senses of Liminality and Ritual on the Rural Road: A Case Study from Kuntillet 'Ajrud, Sinai*

Marginal landscapes, their inhabitants, and their traditions and practices are often considered peripheral to broader regional and temporal trends in archaeological scholarship. However, these communities played a fundamental role in facilitating travel and generating innovation and connectivity across regions. Roadside ritual, also rarely considered in archaeological literature, and liminality, an undertheorized concept, are intrinsic to this phenomenon. In this talk, I present the first millennium BCE site of Kuntillet 'Ajrud, a waystation deep in the northeastern-central Sinai, as a case study to explore the interactive flows between ritual, liminality, and marginal landscapes. I follow Catherine Bell in identifying ritual as an abstract sense of Bourdieu's "socially informed body," similar to senses of duty, beauty, propriety, or "common sense." I elaborate that liminality is also an abstract sense, one that is relational, subjective, and multiple. The same liminalities can mean different things and exist for different reasons to different people. Liminalities bend and change over time. Liminalities shift, intersect, and nest within each other. My analysis traces how senses of liminality at Kuntillet 'Ajrud interacted with visibility, movement, accessibility, and material culture to generate an atmosphere of ritual power, specific to this site and relevant to other marginal ritual sites.

Creese, John

[287] *For a Posthuman Subject: People, Power, and Politics after Humanism*

Recent debates over the merits of posthumanism in archaeology might produce a creeping sense of déjà vu. While much has changed since the 1990s, including the increasingly fragmented nature of archaeological discourse, we are again presented with seemingly stark alternatives that, on closer inspection, have much more complementarity than is often admitted by either proponents or detractors. On the one hand, critics have made somewhat alarmist claims that a "posthuman turn" involves literally abandoning our subject—the human—and along with it, social agency and an ethical imperative to expose and critique the all-too-human origins of power and exploitation. On the other, certain posthumanist charges (such as of uncritical representationalism, failing to take "things" seriously, and Cartesianism)—honed within disciplines such as literary criticism where discursive and constructivist approaches have long held sway—fail to land so squarely with a discipline in which theoretical engagements with the phenomenological and poststructuralist critiques of subject/object, agency/structure, and material/ideal have been ongoing and productive for over 20 years. Without denying the differences between poststructuralism and posthumanism, I make a case for a "mitigated monism" and the possibility of studying people, power, and the political after humanism.

Cresci-Fulmer, Kelly (ENMU)

[127] *Analyzing Ancient Ground Stone Tool with a Modern Tool Kit: A Summer Lab Project*

The discovery and archaeological excavation of the Hell Gap National Historic Landmark, north of Guernsey, Wyoming, provided archaeologists with a breadth of knowledge of North American cultures, ranging from Folsom to Archaic. One set of artifacts recovered from the site is an ancient ground stone tool kit that has been curated at the University of Wyoming (UW) in the Hell Gap Lab under the oversight of Dr. Marcel Kornfeld. The tool kit is on loan to Dr. Elizabeth Lynch and Eastern New Mexico University (ENMU) as a teaching collection. Our hybrid in-person and remote team of graduate, undergraduate, and recently graduated students has begun to utilize modern methodologies of photogrammetry, microscopy, and 3D modeling to examine these tools. The goal of this research is to create and maintain a sustainable dataset to be stored in the digital archives at the Hell Gap lab to be available for further residue analysis. This poster describes the experience of the overall lab project challenges and successes and presents additional questions for consideration.

Crevecoeur, Isabelle [229] see Ambrose, Stanley

Criddle, Kaylee**[202] *Who's That Figure? Eastern and Western Basketmakers in the Uinta Basin through the Lens of Rock Imagery***

Recent research within the Uinta Basin suggests that proto-Kiowa-speaking Eastern Basketmakers and pre-Hopi-speaking Western Basketmakers migrated together into the Uinta Basin throughout several generations, and were included in the umbrella of the “Fremont culture” of the Uinta Basin. Due to this mutual migration, Eastern and Western Basketmakers are expected to have frequently interacted within the basin. This project intends to answer whether cultural differences between the Eastern Basketmakers and Western Basketmakers can be applied to Uinta Basin iconography. Applied methods include the analysis of rock imagery photography within the Uinta Basin to find common themes such as clothing, hairstyles, and adornments in an attempt to determine the interaction of these two peoples, as well as analysis of current literature to determine areas of interaction as shown by the Uinta Basin rock imagery.

Crider, Destiny**[289] *Newly Analyzed Postclassic Ceramic Data from Cerro Portezuelo and Surrounding Sites***

Deborah Nichols's profound impact on the study of Postclassic ceramic exchange and production in the Basin of Mexico is characterized by her extensive collaboration and mentorship of emerging researchers. Building on the Cerro Portezuelo Reanalysis Project's established neutron activation analysis program, led by Nichols (Dartmouth) and Cowgill (ASU), this analysis summarizes our final dataset of 215 Postclassic ceramics submitted for instrumental neutron activation analysis (INAA at MURR) from UCLA's collections of Cerro Portezuelo and Texcoco survey sites. We submitted 86 comal specimens reflecting the site's Postclassic occupational history. Samples were selected to reflect variation in paste and form within this category of utilitarian service ware. The remaining vessels represent Epiclassic and Early Postclassic traditions from nearby survey sites, aiming to enhance our understanding of regional economic practices, especially in the relationship between rural sites and the large center of Cerro Portezuelo. Despite their potential significance, these compositional data have largely remained unexplored and these newly analyzed data aim to contribute to a more nuanced understanding of ceramic production and trade in the region.

Cristiani, Emanuela (Sapienza University of Rome), Annamarie Marko (University Hradec Králov, Czech Republic), Natalie Munro (University of Connecticut), Roxanne Lebenzon (University of Connecticut), and Gonen Sharon (Tel Hai College)

[56] *Epipaleolithic Fishing Technologies in the Southern Levant: New Insights from Jordan River Dureijat, Upper Galilee (Israel)*

Fish has been a significant part of the human diet for nearly two million years, yet early fishing technologies remain challenging to trace due to the perishable nature of materials like wood and plant fibers. Discoveries at the Epipaleolithic site of Jordan River Dureijat (JRD) in Israel have uncovered a remarkable collection of well-preserved bone fish hooks and grooved stones, providing valuable insights into early fishing methods. These artifacts, dating from 15,000 to 12,000 years ago, represent the largest known assemblage of line fishing gear from this period in Southwest Asia and Europe, including the earliest examples of lure fishing. This presentation examines fishing technologies in the southern Levant, focusing on the JRD site and often overlooked elements of material culture, such as net sinkers and bone tools. The JRD site has yielded minimally modified pebbles, functionally analyzed as net sinkers, providing insights into their use with implications for other sites. Additionally, the presence and analysis of bone tools offer crucial evidence for reconstructing net-making and fishing technologies. Recent ichthyological analyses further enhance our understanding of fishing techniques at this site, establishing JRD as a key reference for this period.

Cristiani, Emanuela [56] see Flores-Fernandez, Carola

Cristiani, Emanuela [384] see Gazzo, Silvia

Critz, Tuesday (New Mexico State University)**[326] *Compositional Analysis of Ceramics from Cottonwood Spring Pueblo (LA 175): Negotiating Exchange Networks within the Vicinity of the San Andres Mountains during the El Paso Phase (AD 1275/1300–1450)***

Exchange is a dynamic and fundamental practice that intersects social networks, identity, and physiographic boundaries. During the El Paso phase (AD 1275/1300–1450) Cottonwood Draw was an epicenter for

aggregation and community coalescence. The Cottonwood Spring Pueblo complex (LA 175) is situated along this east-west trending drainage on the western flanks of the San Andres Mountains. Ceramic assemblages here reveal exchange to the north and east with peoples in the Sierra Blanca, to Chihuahua in the south, and the Mimbres and Gila valleys to the west. To explore these patterns more deeply, I conducted neutron activation analysis (NAA) on a sample of 200 sherds from two villages at the Cottonwood Spring Pueblo complex. These data shed light on the nuances of exchange practiced by these peoples.

Crowley, Suanna (SWCA Environmental Consultants)

[183] *Mind the Gaps: Geoarchaeology in New England*

Geoarchaeological methodologies are regularly employed across North America and have been for decades within cultural resource management. However, this specialty is less well known or used within the six states of New England, particularly in landscape settings that would benefit from deep testing evaluations. Few state guidelines or requirements for geoarchaeological methods, procedures, or reporting of results are in place. Even fewer early career specialists seem to be emerging from the academy here. And while there is growing interest, there is not universal demand by Tribal authorities for adding geoarchaeological analyses to review and compliance undertakings. Consequently, there are significant gaps in our knowledge around site formation and archaeological site potential within the varied landscapes of the region. How can geoarchaeology add new value to CRM in New England and become an essential part of heritage management? This paper reviews the current state of geoarchaeology in the Northeast and considers avenues for expanding its practice. The discussion will highlight deep testing procedures as a necessary addition to the suite of tools being adopted in the region and examine creative solutions for supporting clients, municipal and state agencies, and descendant communities.

Crowther, Alison (University of Queensland), Mark Horton (Royal Agricultural University), Patrick Faulkner, Tabibou Ali Tabibou (CNDRS, Comoros), and Bourhane Abderemane (CNDRS, Comoros)

[59] *Comoros Connections: Recent Archaeological Research on Maritime Trade and Migration in the Western Indian Ocean*

The Comoros islands have been a key node in Indian Ocean trading systems since the late first millennium CE and are suggested to have played a significant role in the still mysterious Austronesian colonization of Madagascar. Yet little systematic archaeological research has been undertaken in the archipelago since the 1980s, leaving major gaps in our understanding of the origins and lifeways of the earliest Comorians and their maritime connections. This paper presents an overview of recent archaeological research in the Union of the Comoros, involving new excavations at the sites of Membeni and M'Bachile on Ngazidja and Old Sima on Ndzuani. A major focus of the project has been on the systematic collection and analysis of archaeo-biological datasets to better understand the origins of the people, plants and animals found at the earliest "Dembeni" phase settlements, as well as high-definition studies of local and exotic material culture. These studies are allowing us to better understand the place of the Comoros in trans-regional networks of exchange and mobility and situate contemporary Comorian culture in a longer-term trajectory of maritime interactions and influences that stretch far across the Indian Ocean to Asia and beyond.

Cruz, Leslie

[269] *Comparando la cerámica de dos sitios preclásicos en Oaxaca: Monte Albán y Monte Negro*

Monte Negro y Monte Albán fueron centros demográficos importantes durante la Época I (Preclásico Tardío) en Oaxaca. Los trabajos arqueológicos en Monte Negro han revelado valiosas conexiones culturales, donde la proximidad entre estas dos ciudades prehispánicas se ha reflejado en las similitudes de cultura material. Análisis cerámicos recientes, basados en los estudios originales de Alfonso Caso y Jorge Acosta, comparan características de las pastas, formas, y decoraciones correspondientes a esta temporalidad. Semejanzas sugieren que los artesanos de Monte Negro podrían haber intentado imitar piezas, en barro local, similares a las que llegaban a la región desde Monte Albán. El estudio profundo de la cerámica de Monte Negro ayudará a arrojar luz sobre las redes de intercambio y las esferas de influencia política en Oaxaca durante el Periodo Formativo. Esta presentación recapitula lo que se sabe sobre la cerámica de Monte Negro y cómo podemos continuar su estudio.

Cruz-Gil, Rafael (Cornell University)**[368]** *Making It “Worthwhile” for All: Local Tourism, Archaeology, and Sierra de San Francisco Rock Art*

The Sierra de San Francisco cave paintings are a hard to access archaeological site in Mexico’s Baja California Sur state. Visiting some of the largest of them requires traversing a canyon on muleback, two nights of camping, and taxing hikes, as well as hiring guides and coordinating with the local National Institute of Anthropology and History (INAH) authorities. The paintings themselves are understudied within the archaeological community, not claimed by any Indigenous group living in the state, and the local population, mostly economically vulnerable subsistence ranchers, have an even more distant, transactional relation to them. Guiding tourists to the cave paintings is one of the most coveted jobs for the community given the monetary relief it can provide, even as said tourism is relatively scarce, which protects the paintings themselves. Given such a tension, how might archaeology, tourism, and the local community interact with one another in a more mutually beneficial way?

Cruz Sosa, Ivonne (Escuela Nacional de Antropología e Historia), Valeria Aguirre Aldana (Escuela Nacional de Antropología e Historia), Akira Ichikawa, and Arthur Joyce (University of Colorado, Boulder)**[290]** *Resultados preliminares de la intervención arqueológica en unidades domésticas habitacionales en el sitio de Río Viejo: Secuencia ocupacional de las fases Yuta Tiyoo y Yugüe en operación C*

Esta investigación se centra en dar a conocer la evidencia material cultural recuperada mediante los trabajos de excavación en el sitio de Río Viejo, en el área determinada como operación C dentro del Proyecto Río Verde en la temporada 2024. Se tuvo como principal objetivo el obtener información relacionada con los aspectos culturales, socioeconómicos, domésticos y la subsistencia de las poblaciones asentadas durante la transición Clásico Tardío-Posclásico Temprano. Se identificó un conjunto habitacional de población común conformado por tres estructuras de las fases Yuta Tiyoo (500-800 dC) y Yugüe (800 a 1100 dC), las cuales presentaron reutilización y modificación en sus distintas ocupaciones, cuyo periodo más representativo fue la transición entre ambas fases. Se excavó al interior de las unidades habitacionales para reconocer actividades domésticas y al exterior para comprender la organización espacial de estos hogares. En el área común se registró la presencia de dos hornos de Posclásico Temprano y algunos depósitos de desechos o basureros, así como algunos entierros humanos. Se espera que estos datos contribuyan al conocimiento de dinámicas sociales más amplias, tales como cambios sociales, políticos, económicos, vida cotidiana-doméstica y subsistencia de los asentamientos prehispánicos de la Costa Occidental de Oaxaca. *****Esta presentación incluirá imágenes de restos humanos.**

Cucina, Andrea (UADY), and Alfredo Coppa (Univ. Sapienza, Rome)**[283]** *Maya and Caribbean Islands’ Population Affinities: Coastal Movement in Prehispanic Times*

The Yucatán Canal, separating Mesoamerica from the Caribbean’s Greater Antilles has been thought of representing a geographical barrier for the movement of people and goods. This has supposedly forged independent population dynamics in the two macroregions. Nonetheless, the so far sporadic presence in the Greater Antilles of goods and people from Mesoamerica (for example, obsidian) suggests that the Yucatán Canal might not have represented such an obstacle for the movement of material culture and individuals. This allows to build three different scenarios. First, the Yucatán Canal did prevent bidirectional demographic movement in prehispanic times, forcing independent evolutionary paths in mainland and islands. Second, admixture might have taken place, but not to such an extent to give rise to a clear shared morphological pattern in the two regions. Third, consistent genetic exchange occurred through the Yucatán Canal. Dental morphological traits have been analyzed in seven groups from the Yucatán Peninsula, dated from Preclassic to Postclassic times, and eight groups from Cuba and the Dominican Republic dated from Preceramic to contact period. Despite evident group separation between Maya and Caribbean dental morphology, results suggest some degree of shared morphology between the two macroregions, supporting the second scenario.

Cuellar, Andrea (University of Lethbridge), and Venicia Slotten (UC Berkeley)**[239]** *Precolumbian Forest Management in the Ecuadorian Eastern Andes / Upper Amazon: An Anthropological Historical Ecology Approach*

We present a trajectory of precolumbian forest resource management and sociopolitical change in the Quijos

region, an upper Amazonian / eastern Andean setting in north Ecuador. We evaluate if and how forest resource use changed in association with changing social and population dynamics from the early (1000 BC–AD 500) to the late (AD 500–1600) precolumbian occupation; specifically, whether this trajectory was marked by greater specialization or diversification in forest resource. Through a discussion of anthropological research questions, scales of analysis, and methods for better understanding ancient forest resource use, and human-environment relations in general, we illustrate how anthropologically defined spatial and temporal scales of analysis and methods are likely to yield information useful in the context of applying knowledge on ancient forest resource use to modern-day land-use policies, which is of special relevance in settings where contemporary land-use practices differ from those of the past.

Cuenca, David [57] see Straus, Lawrence

Cuevas, Mauricio (Universidad Veracruzana), and Gabriela Montero

[48] *Custody of Archaeological Sites in Puebla: The Tehuacán el Viejo Proposal*

The legal and technical custody of archaeological sites in Mexico is entrusted by law to the National Institute of Anthropology and History (INAH). This responsibility presents a significant challenge for researchers due to the vast number of sites across the country. Recently, a pilot program was introduced in Mexico to protect archaeological heritage, with Tehuacán el Viejo in Puebla being one of the sites selected at the national level. Nearly three years into the program, this paper offers a detailed analysis of its benefits and challenges, along with recommendations for improvements to better protect the nation's archaeological heritage.

Cullison, Jennifer

[323] *Variations in Ceramic and Obsidian Dispersal among the Ancestral O'odham*

It has been long understood that the trade routes for obsidian differ from that of other materials such as ceramic among the Ancestral O'odham (also known as the Hohokam). Previously conducted sourcing studies have shown that many materials including ceramic are exchanged among communities that share an irrigation canal. However, obsidian is seemingly traded through kinship-based networks as individual houses within communities seemingly have different sources. Many papers have noted this phenomenon but there has been less published offering explanations. I posit that one potential explanation for the differing modes of trade is a fear of warfare which has resulted in obsidian being traded among kinship groups. Ceramics and other materials are not tools of war, but obsidian has the potential to be used for violence. Thus, one may wish to limit access to such a material to those who can be trusted. Unlike ceramics, which could be exchanged in public markets, obsidian was only exchanged among the most trusted of allies like kin. While only currently a hypothesis, it is one that warrants further examination.

Cunningham, Andreana (Boston University)

[45] *Elucidating Processes of Objectification, Contestation, and Repair for African Diasporic Burial Spaces*

Human remains occupy a contested status both in bioarchaeology and culturally, wherein the same set of remains can be conceived of as a complex former person or as a disembodied object without depth. This paper explores the contested status of these remains in diasporic contexts by outlining a theoretical model called the "Black Postmortem Subject," which adapts Martinican philosopher Frantz Fanon's theories of alienation and spatial compartmentalization to historic Black Ancestors. This model outlines a process for how the objectification of Black Ancestors occurs, in which displacement of Black Ancestors in life and their continued displacement in death are key to their alienation, and the places these Ancestors are (un)buried are a reflection of their ascribed value. The model also emphasizes the importance of time; initial conceptions of the dead versus conceptions that occur long after reveal the tumultuous power dynamics that can alter outcomes for how we treat human remains. These considerations are applied to a case study of Rupert's Valley, St. Helena, highlighting how fraught notions of identity and kinship, as well as evolving conceptions of value and urgency for the dead, have directly impacted the fates of these Ancestors. *****This presentation will include images of human remains.**

Cunningham, Andreana [201] see Wesp, Julie

Cunningham, Douglas [284] see Hurst, Stance

Cunningham, Jerimy (University of Lethbridge)

[103] *On the Limits of Ethnographic Analogy: Ontology and the Self in Casas Grandes*

[WITHDRAWN]

Curet, L. Antonio (Smithsonian Institution), Josh Torres (National Park Service), Glenis Tavarez (Museo del Hombre Dominicano), and Jorge Estevez (Higuayagua Taino)

[233] *Beyond Styles and Modes: Taking a Closer Look at Ceramic Changes in the Greater Antilles*

Undoubtedly, one of the most important developments in human history is the invention of pottery. In archaeology alone, it is difficult to imagine how much the discipline would have learned without it. Thanks to pottery we have been able to advance studies in diet, production, chronology, religion, long- and short-distance interaction, aspects of identity, and many other topics. However, at least in the case of the Caribbean, one topic that has been ignored is explaining why and how ceramic styles changed. In this presentation we discuss two cases of marked pottery changes: one from Puerto Rico and the second from Dominican Republic. The first case focuses on the Santa Elena style (or *Elenan* subseries) from Puerto Rico, a style that appears dramatically in the eastern side without any antecedents and it is abandoned 300 years later. The second is the *Chican* subseries, a type of pottery that developed originally in Dominican Republic replacing the local styles and eventually influencing the pottery from other islands.

Curet, L. Antonio [233] see Look, Cory

Cureton, Travis, Jay Franklin (Logan Simpson), William Bryce (Southwest Archaeology Research Alliance), and John Bowler (Logan Simpson)

[189] *Methodological Approaches to Lithic Landscapes of the Middle Little Colorado River Valley*

We present recent research on a lithic landscape in the middle Little Colorado River Valley in northern Arizona. The landscape hosted millennia of lithic procurement behavior distributed across a patchwork of activity areas. The vastly strewn secondary raw material sources within which the activity areas occur are crucial as they document cognitive abstract design experimentation, reduction strategies, manufacturing techniques, conveyance, and the transmission of geological, technical, and social knowledge over extended periods. As such, lithic landscapes are invaluable to archaeologists studying land use and toolstone connections with hunter-gatherers, farmer-foragers, and later sedentary groups, of which habitations are more commonly the focus of archaeological research and cultural resource management. A comprehensive understanding of either requires an integral and systematic examination of both. In this study, we propose a refined approach to investigating established lithic landscapes and introduce new hypotheses concerning lithic procurement and group mobility in the middle Little Colorado River Valley.

Curran, Naomi [33] see Rodgers, Rilee

Currie, Elizabeth

[105] *Engines of Transformation, Purveyors of Wealth: Volcanoes as Apus in the Indigenous Andean Psyche*

In the Andes, many large mountains are volcanoes, although Indigenous Andean peoples don't necessarily distinguish "mere mountains" from those that are seismologically active. The name given to the largest and most significant in a region and accorded the highest veneration is "*apu*," meaning Lord. They are the mountain spirits and in the post-Spanish conquest colonial period, *apus* became understood to be loci where goods were transformed into gold and silver, overseen by a man dressed richly in Spanish colonial style, mounted on horseback—the personification of the *apu*. Beliefs surrounding mountains and mountain spirits are fundamental to the Andean psyche and continue into the present, as recent surveys of Indigenous Andean beliefs demonstrate. This paper explores some of principal mythological themes associated with volcanoes as *apus*, and discusses how and why these changed under the influence of invading European paradigms.

Curti, Giorgio [99] see Dongoske, Kurt

Curtis, Kira [202] see Hora, Elizabeth

Cusicanqui Marsano, Solsiré [327] see Robles, Erika

Custer Bojakowski, Katie [227] see Johnson, Taryn
Custer Bojakowski, Katie [227] see Jones, Lauren

Cuthbertson, Jennifer (Washington State University)

[298] *Prediction in Unpredictable Times: The Uses of Predictive Models for Survey in Changing Climates*

How do we keep track of the patterning of settlements on landscapes when those landscapes have been altered? Predictive modeling and mapping has only grown more helpful to CRM field surveyors seeking to determine and focus on areas with higher likelihoods of cultural materials, often in expansive landscapes. Yet with urbanization and climate change commingling to permanently alter what we can see and perceive on a landscape, and resources dying up or drying up, what do we include to help inform these models and maps? In arid environments in particular, where limited water proximity for peoples in the past and present has been a critical driver for settlement, how do we use our models while acknowledging just how much these resources have changed? This poster uses a comparative analysis of current GIS literature and techniques for survey, combined with a study of how GIS can be used to help identify dried hydrological features throughout the Great Basin of the western United States, to further the conversations about some of the many pressing concerns regarding paleoenvironmental reconstruction, the omissions of altered landscape features in inferential maps, and the impacts that a lack of understanding the environment can have on survey success.

Cutright, Robyn (Centre College), Gabriela Cervantes Quequezana (University of Pittsburgh), and Sarah Taylor (University of South Florida)

[273] *The Late Prehispanic Period in Chira: A View from Monte Lima*

At least five monumental centers were occupied in the lower Chira Valley during Piura Phase 3 and 4 (1000–1532 CE). Richardson et al. (1990) attribute this settlement pattern, along with the introduction of blackware ceramics and the intensification of irrigation agriculture, to influence from, and perhaps integration into expanding Lambayeque and Chimú states during a period of intensified trade with polities in what is now Ecuador. However, neither the timing and nature of these interactions, nor the sociopolitical and economic organization of local Chira communities, are currently well understood. We draw on preliminary results from recent excavations at Monte Lima, one of these large monumental centers, to begin to evaluate Richardson's models for the role of the lower Chira in larger regional dynamics. Specifically, we use new calibrated radiocarbon dates to place Monte Lima within regional chronologies for Lambayeque, Chimú, and Inka expansion. Contrary to initial expectations of an occupation spanning interaction with Lambayeque and Chimú polities, our dates place various site components between 1400 and 1550, potentially suggesting a very late period of more intensive Lambayeque interaction, followed by an extremely short period of Chimú influence and a domestic occupation that extended into the early colonial era.

Cutts, S. Jordan [188] see Parbus, Brett

Czaplinska, Tina [316] see Airola, Danielle

Da Silva Pereira, Daniel [384] see Doyon, Luc

D'Agostino, Andy (University at Buffalo), and Griffin Fox (University at Buffalo)

[217] *Avocational to Aspiring Archaeologists: 35 years of Community Engagement at the McKendry Site*

The McKendry Site is a multicomponent precontact Indigenous and postcontact Euro-American site located in Chautauqua County, western New York. Archaeological excavations involving public participation have been carried out since 1989. Throughout the site's 35 excavation seasons, the past 18 have been directed by students from the University at Buffalo Department of Anthropology. Project goals have been reoriented from rote excavation and identification to how methodologies and interpretations influence motivations to excavate and the increasing attention on Indigenous archaeological frameworks; focusing more on site

mapping, artifact and feature analysis, record keeping, and collaboration with Indigenous communities. The shifts in data recovery and preservation law reflect the ever-evolving paradigms of North American archaeological practice. Investigating these changes serves to highlight the ethical advantages of a more Indigenous, community-based archaeological project.

Dahlstedt, Allisen [186] see Caseldine, Christopher

Dalmas, Daniel (University of Utah), Lawrence Todd (GRSLE Inc.), and David Rapson

[196] *Past Movement and New Models: Reconstructing Past Mobility in the Absaroka Mountains by Applying Bayesian Neural Networks toward Refining Trace Element Modeling*

Sourcing lithic raw materials in North America has become increasingly valuable for understanding past human behavior. However, the process often faces challenges due to monetary costs and the need to remove materials from their original landscape. Refining pXRF obsidian sourcing methods can help mitigate these issues. By utilizing a large dataset from the GRSLE project, which includes obsidian sourced through eXRF and pXRF scans, we developed a multinomial model using Bayesian neural networks to predict obsidian sources from pXRF scans. The Bugas-Holding site, included in this analysis, highlights the benefits of understanding within-site patterning of obsidian. The application of machine-learning techniques not only enhances our knowledge of the past but also improves the ability of archaeologists to record data for future research.

Dalmas, Daniel [298] see Auker, Brianna

Dalmas, Daniel [126] see Codding, Brian

Dalmas, Daniel [298] see Downey, Zachary

Dalmas, Daniel [188] see Orngard, Charles

Dalmas, Daniel [223] see Rapson, David

Dalmas, Daniel [196] see Reid, Ethan

Dalmas, Daniel [382] see Todd, Lawrence

Dalmas, Daniel [191] see Zekas, Sophia

Dalpra, Cody [274] see Civitello, Jamie

Dalton, Jordan (American Museum of Natural History), Alexis Rodríguez Yábar (University of South Florida), and Irving Aragonéz Sarmiento (Universidad Nacional San Luis Gonzaga de Ica)

[195] *The Middle Horizon in the Chincha Valley: Preliminary Insights from Las Huacas*

Occupations of the Chincha Valley are well-known during the Formative period (1800 BC–AD 200) when the valley was home to the Paracas people, and the late prehispanic periods (AD 1200–1532) when it was home to the Chincha Kingdom, but research is just beginning to address the thousand years between these two cultural groups. In this paper, I will present new data from the site of Las Huacas, which is located in the agricultural fields of the Chincha Valley. New radiocarbon dates from excavations demonstrate that the site was occupied as far back as the Middle Horizon (AD 600–1000), and analyses of artifacts offer preliminary information on Middle Horizon ceramic traditions in the region. The presentation also offers insights into the development of the Chincha polity and the role that intensive agricultural production played.

Damick, Alison [337] see Bullen, Jonah

Damstedt, Jane (University of Utah), and Kasey Cole (University of Utah)

[196] *Using Past Ecosystems to Understand Modern Climate Change: A Case Study from Utah's House Mountain Range*

As human impacts on ecosystems accelerate, there is a growing emphasis in conservation planning toward maximizing the capacity of ecosystems to respond to anticipated changes in the near future. Doing so requires understanding how ecosystems responded to past changes (e.g., human impacts, altered climates) that occurred over timescales exceeding those of direct human observation. Paleozoological data provides

such a record and documents baselines of animal communities that can be used to evaluate historic anthropogenic change and attest to the responses of species to ecosystem changes over geological timescales. This study uses paleozoological data from Utah's House Range mountains to build a paleozoological baseline species occurrence in the area over the past 1,000 years. Then, using a suite of statistical analyses, including Random Forest Machine learning, we compare the paleorecord to modern zoological survey data (e.g., Arctos and VertNet) and climate records to evaluate whether anthropogenic climate change has contributed to local range shifts or extirpations, as has been predicted for the region's montane mammals. Our results have important implications as baselines are essential to understanding how climate change has and will continue to shape ecosystems and can inform ongoing wildlife management by documenting species distributions beyond our modern observations.

DAndrea, William [107] see Davis, Dylan

Daneshvari Berry, Shamsi [385] see Bocinsky, Kyle

Dangerfield, Nicole (Bureau of Reclamation)

[95] *Balancing the Stewardship of Historic Properties and Management of Irrigation Infrastructure as Modern Water Delivery Systems*

With the establishment of the Bureau of Reclamation in 1902, the federal government endeavored to reclaim the arid American West and support historic European settlers' homesteading efforts through large-scale irrigation infrastructure construction that provided a reliable water supply year-round. Today, much of this infrastructure has surpassed 50 years of age and poses a conundrum in balancing management of the irrigation infrastructure determined eligible for the NRHP with their continued use. Regardless of the age of the canals and dams, they still must function within the modern water delivery system and be reliable, necessitating continual maintenance and, at times, upgrades to guarantee this. The emphasis of functionality and efficiency is further exacerbated by severe droughts across the western United States, bringing a focus to water savings where they can be found. This presentation sets out to explore the impacts that maintenance and upgrades have played on the aspects of integrity of canals and dams determined eligible for the NRHP, the management of these impacts, and how Reclamation archaeologists have balanced the stewardship of these historic properties with the management of Reclamation infrastructure.

Danis, Annie [322] see Kamp-Whittaker, April

Darlington, Emily (CSU Northridge), Chin-hsin Liu (CSU Northridge), H el ene Rougier (CSU Northridge), and Michael Mathiowetz (Getty Research Institute)

[36] *Cranial Modification Practices in Postclassic West Mexico: Interaction and Identity in the Aztatl an Tradition*
Artificial cranial modification is a social identity marker that was practiced throughout precolumbian Mesoamerica, including in the Postclassic Aztatl an tradition of West Mexico. Modified human crania from Tizap an el Alto (Jalisco) and Amapa (Nayarit) are assessed to identify cranial modification trends that may indicate a shared ideology at Aztatl an sites. Methods include macroscopic identification of cranial modification styles, comparison of digitized lateral profiles of modified crania, and statistical analysis of craniometric measurements. Results suggest the existence of intra-site trends in the Tizap an el Alto and Amapa assemblages where all individuals with crania were modified in the tabular erect style, there being few modification forms and varieties, and most crania were asymmetrical. The comparison of cranial modification practices from other Aztatl an sites demonstrates that there are similarities throughout these sites, as well as with other Postclassic Mesoamerican sites, with the majority of individuals being modified, and all modified individuals having tabular erect modifications. These similarities may suggest the embodiment of shared ideologies regarding cranial modification at Aztatl an sites, indicating possible inter-site interactions. However, the presence of different cranial modification forms and varieties suggests that local identity also influenced the modification practice. Images of human skeletal remains will not be shown.

Dart, Allen [326] see Franklin, Jay

Darwent, Christyann [182] see Hall, Morgan

Darwent, Christyann [99] see Wu, Nikki

Dastrup, Neil [91] see Freeman, Jacob

Datka, Zhuldyz (University of Pittsburgh), Andrea Torvinen (Florida Museum, University of Florida), Anthony Farace (University of Florida), Alisa Luthra (University of Florida), and Neill Wallis (Florida Museum of Natural History)

[66] *Characterizing Ceramic Paste Recipes at the Spring Warrior Complex (8TA154): Insights into Middle to Late Woodland Ceramic Technology*

Ceramic paste recipes (e.g., variations in inclusion types, sizes, and frequencies) have the ability to show shifts in communities of practice through the choices made at the micro- and macroscales. By integrating morphological and stylistic data with paste analysis, this research contributes to a more nuanced understanding of technological and cultural dynamics at the Spring Warrior Complex (8TA154) located along the Florida Gulf Coast. The results provide significant insights into how material culture changes in response to social and environmental changes, offering a richer perspective on the historical development of ceramic traditions in the southeastern United States. Recent reevaluation of legacy pottery collections, combined with new excavations from the site, have revealed an east-to-west spatial trend in the site's occupation from 200 to 1000 CE, covering the transition from the Swift Creek (Middle Woodland) to the Weeden Island (Late Woodland) periods. This poster presents an investigation of ceramic pastes using Dino-Lite imagery, aiming to elucidate the relationships between paste recipes and the observed spatial and temporal patterns in ceramic technology.

Davenport, Christian [32] see Lee, Bonita

Davenport, James (University of Missouri)

[66] *Assessing the Production of Middle Horizon "Pachacamac" Style Pottery from Pachacamac, Peru, Using Petrography*

The "Pachacamac" style has been identified on the central and north coasts of Peru during the Middle Horizon. It is characterized by thin-walled and high-fired ceramics, restricted to serving vessel forms, and decorated with polychrome motifs that share iconography with both other contemporaneous Middle Horizon styles and with contemporary Lima and Nieveria ceramics from the central coast. On the central coast, it is found infrequently and is generally restricted to elite contexts, raising questions about its local production in that region. Production of "Pachacamac" style ceramics at a different Wari location outside the central coast would support a connection between local elites and a broader Wari network. Alternatively, local production may indicate an independent adoption of Wari iconography and ideology. This study examines the production of "Pachacamac" style pottery from Max Uhle's excavations at the site of Pachacamac in the Lurín alley of Peru's central coast using thin-section petrography in combination with data from neutron activation analysis. The data are compared with those from other styles of pottery from Pachacamac as well as pottery from other Wari centers.

Davenport, James [296] see Davis, J.

David, Anna-Marie (University of Montana), and Meradeth Snow (University of Montana)

[321] *Epigenetic Age Estimation on Hard Tissues for Forensic Skeletal Identification*

The ability to narrow the age-at-death estimation using epigenetic markers from DNA extracted from skeletal remains is showing great promise, narrowing the range from 20+ years to just ± 2 years. But, when utilizing skeletal remains, different skeletal elements experience bone turnover rates at very different points. Therefore, certain elements will demonstrate more accurate age-at-death estimates than others. Current morphometric analysis and visual assessment to determine age-at-death are often problematic. This presentation introduces a new methodology for accurate age estimation that supplements current aging techniques while minimizing destruction to skeletal remains that is common in other molecular DNA sampling methods. Using four distinct genes (ASPA, PDE4C, ELOVL2, and EDARADD) associated with aging

in other tissues, this project identifies the best location for the extraction of DNA from the human skeleton for the purposes of age-at-death estimates and creates a detailed map of epigenetic alteration of the skeleton. In doing so we address that (1) there is a linear correlation between chronological age and the methylation in the four genes, but (2) different elements will have greater variance in their correlation, with (3) trabecular bone representing the greatest correlation due to higher rates of bone turnover. *****This presentation will include images of human remains.**

Davidson, Jaron (University of Oklahoma), Michael Searcy (Brigham Young University), Spencer Lambert, David Yoder (Weber State University), and Scott Ure (Brigham Young University)

[245] *Creating a Strontium Isotope ($^{87}\text{Sr}/^{86}\text{Sr}$) Baseline from Rodent Teeth for Archaeological Applications in Utah*
Few strontium (Sr) isotope studies have focused on the eastern Great Basin of North America, and because Sr ratios vary regionally and stratigraphically, establishing an isotopic baseline is often the first step in being able to interpret Sr values in their archaeological context. Such isotope baselines can help in determining local vs. nonlocal remains and assist in piecing together trade and migration in the past. The goal of our current project is to help create a more robust Sr isotopic baseline in the eastern Great Basin to determine if using Sr ratios in interpreting the archaeological record is practical in such a geologically heterogeneous region. Small rodent remains from archaeological sites and modern samples were assayed to explore multiple parameters that play into Sr isotopic ratios. First, we report on the overall effectiveness of archaeological and modern rodent tooth samples in predicting Sr isotope values in Utah. Second, we explain how the valley-wide Sr ratios may conflict, but Sr ratios within-valley drainages differ predictably. Finally, we compare these results to previous findings and present the $^{87}\text{Sr}/^{86}\text{Sr}$ ratio results of a case study from Utah Valley.

Davidson, Matthew [50] see Ritchison, Brandon

Davis, Audrey [336] see Cook, Paris

Davis, Caitlin (Yale University)

[335] *Reconstructing Usulután Production and Exchange Patterns in the Late Formative Southern Maya Region*
Usulután is a type of resist-decorated pottery common in Late Formative southern Mesoamerica. This presentation will review the results of compositional analysis of 217 Usulután ceramic samples from sites in southern Guatemala and western El Salvador. The compositional data indicates that Usulután pottery was primarily produced and consumed locally. However, small quantities of Usulután pottery were exchanged between cities. The compositional data will be used to discuss Usulután production processes, regional and local Usulután styles, and possible relationships between Usulután-producing communities.

Davis, Dylan, William DAndrea, and Kristina Douglass

[107] *A Geoarchaeological Approach to Coupled Human-Natural Systems on SW Madagascar*
Environmental archaeology provides important insights to the long-term consequences of different human-ecological dynamics. Recent research has shown that historic and ancient patterns of human land use can have lasting impacts to ecosystems. However, discerning between different land-use activities in the past remains challenging, especially for small-scale, mobile populations. Here, we use a combination of remote sensing and organic geochemistry to investigate local and regional ecological impacts of subsistence economies in SW Madagascar over the past millennium. Madagascar is often cited as an example of how human land use has degraded the island's ecosystems. However, our results suggest that centuries of traditional land-use practices are positively correlated with ecosystem function, despite fluctuations in climate and environmental conditions.

Davis, J. Britt (Arizona State University), Matt Peeples (Arizona State University), Claire Ebert (University of Pittsburgh), and James Davenport (University of Missouri)

[296] *Reconstructing Early and Middle Preclassic Social Interaction Networks in the Upper Belize River Valley*
Over the past 30 years, archaeological research into the origins and development of the Preclassic Maya has greatly expanded, resulting in an enormous amount of material culture, which makes regional studies more

feasible than at any time in the past. This project takes advantage of existing pottery collections from 13 sites in the Upper Belize River Valley region of the eastern Maya lowlands to reconstruct Early and Middle Preclassic (ca. 1200–300 BCE) interaction networks using a combination of neutron activation analysis (NAA) and social network analysis (SNA). Over 430 sherds were subjected to NAA, to supplement a smaller dataset of existing NAA data for the region, making this the largest Preclassic NAA study in the eastern Maya lowlands. Here we present several novel SNA approaches and metrics based on both ceramic typological similarity and the distribution of geochemical groups gathered through NAA to examine the regional socioeconomic networks that shaped the development of complex organizational structures in the Upper Belize River Valley. The results clarify how local political strategies and regional socioeconomic networks directly led to increased social and economic complexity.

Davis, J. Britt [109] see Awe, Jaime

Davis, J. Britt [301] see Hoggarth, Julie

Davis, Jenny [373] see Bishop, Katelyn

Davis, Jera (VHB Inc.)

[58] *Identification of a Maypop Theme in Mississippian Iconography*

Maypop (*Passiflora incarnata*), also known as passionflower, is a climbing vine native to the southeastern United States. Based on its common occurrence in precontact middens and its preference for anthropogenic habitats, maypop is identified as a weed crop cultivated since at least the Late Archaic period. Judging from ethnographic and ethnohistoric accounts of its use by American Indian groups, maypop was likely valued prior to European contact not only for its edible fruit, but also for its roots, leaves, and flowers that can be used to make a medicinal tea. This latter use is probably one of several reasons why representations of its otherworldly blossoms were engraved in the Hemphill style on bottles from the Mississippian period Moundville site, an identification made for the first time in this paper.

Davis, Jordan (University of Texas, Austin)

[112] *More Than Square Nails and Abandoned Fields: Toward an Archaeology of Black Agrarianism in Central Texas*

The centrality of agrarianism to African American experience cannot be overstated. Although profoundly shaped by the legacies of racial chattel slavery and sharecropping, the story of Black agrarianism is not reducible to narratives of forced labor, exploitation, and ecological alienation. Ideologies of racial uplift and rural reform; aspirations of landownership and economic security; and land-based dreams of food sovereignty and collective liberation have all been articulated and made manifest by Black farmers. In Central Texas, archaeologists working alongside African American descendant communities have deepened and greatly expanded our understanding of the material, social, and ecological worlds of Black farmers, especially during the Reconstruction and Jim Crow eras. Still, the archaeological study of Black agrarianism faces several challenges—from the generational loss and erasure of Black rural landscapes to persistent assumptions within the discipline that late nineteenth- and early twentieth-century farmsteads lack significance, integrity, and research value. In this paper, I explore past and more recent archaeological approaches to Black agrarianism by focusing on three post-emancipation farmsteads in Central Texas. I will also outline a developing research agenda that aims to place archaeology in closer dialogue with African American agricultural history and traditions of Black environmental thought.

Davis, Kaitlyn (Northern Arizona University; Chronicle Heritage), and Kyle Bocinsky (University of Montana)

[385] *More Than Maize: Modeling the Cotton, Wheat, (and Maize) Cultivation Niches beyond the Four Corners*

Agricultural niche reconstruction efforts in the North American Southwest have primarily focused on maize and have primarily been focused in the Four Corners region. This paper expands that work by modeling the growing niches for cotton and wheat, also important crops for Ancestral Pueblo people, and investigating the maize niche in the Northern Rio Grande region of New Mexico. We build on the PaleoCAR model by using climate data to assess locations where growing requirements for maize, cotton, and wheat were met and estimate yields. The model suggests that the maize niche was relatively healthy, followed by wheat, with

cotton having a very limited niche that required additional agricultural technologies. These results are supported by pollen and phytolith data and provide an additional line of evidence to support a slower adoption of wheat relative to maize versus a quicker adoption of sheep (wool) relative to continued cotton cultivation by Ancestral Pueblo communities in the Northern Rio Grande region. This case study, along with two preliminary case studies from northwest Colorado and north-central New Mexico, demonstrate how geographic and crop-type expansions of PaleoCAR and the SKOPE app can be used to address community-guided questions about past agricultural possibilities.

Davis, Kaitlyn [298] see Boerger, Caroline

Davis, Kaitlyn [322] see Leddy, Katherine

Davis, Kaitlyn [385] see Mills, Barbara

Davis, Loren (Oregon State University), David Madsen (University of Nevada, Reno), Masami Izuho (Tokyo Metropolitan University), and Fumie Iizuka (University of Wisconsin, Madison)
[292] *The American Upper Paleolithic and Its Origins*

A number of North American sites predating ~14.5 ka, well before an ice-free corridor became available, have relatively large stone tool assemblages that allow some assessment of the underlying characteristics of the lithic tradition they share. These assemblages have a broad technological similarity involving the use of dual core-and-blade and biface technologies similar to dual core-and-blade and biface technologies found in Late Upper Paleolithic (LUP) assemblages in northern Japan dating to ~20 ka. We suggest a pre-Jomon population became isolated somewhere in the vicinity of the Japan/Paleo-Sahkalin, Hokkaido, Kuril (PSHK) region of northeast Asia, developing genetically into an ancestral ancient Native American population. Between ~22 and 18 ka a subset of this population bearing LUP technological knowledge began migrating by foot and boat along the southern Beringian coast and down the Alaskan and Canadian coastline into the Americas. By ~16–15 ka they had become widely dispersed across North America south of the continental ice sheets. Here, we share preliminary 3D scanning of these Japanese assemblages that demonstrate clear technological similarities to the North American assemblages.

Davis, Loren [292] see Des Lauriers, Matthew

Davis, Loren [56] see Duarte, Claritsa

Davis, Loren [292] see Iizuka, Fumie

Davis, Loren [292] see Stone, Samantha

Davis, Loren [183] see Wriston, Teresa

Dawson, Emily, and Kathleen Martin (Denver Museum of Nature and Science)

[293] *Examining the Unexamined: Peruvian Archaeological Textiles from the Denver Museum of Nature and Science*

This paper discusses collaboration between the Avenir Conservation Center and Curators at Denver Museum of Nature and Science (DMNS) through an ongoing Textile Research Project. The current stage of research focuses on archaeological textiles from Peru. So far 200 archaeological textiles from Peru have been identified. This research seeks to understand the DMNS's textile collection in three ways; first, through examination of archival information to understand how these textiles came to the museum. The majority of DMNS's South American textile collection was donated by individuals living and working in South America during the late nineteenth and early twentieth centuries. Second, through physical examination and analysis of textiles within DMNS's collection. Finally, this paper considers ethical and care of duty responsibilities related to working with donated collections. It asks, what are the ethical considerations when working with donated collections that have limited information about provenience? How does the nature of donation affect handling of objects, conservation practices (e.g., repairs or stabilization treatments), and decision-making around various forms of analysis (destructive vs. nondestructive)? How do the conditions of donation affect the ability of the museum to display archaeological textiles?

Dawson, Tom [99] see Mitchell, Juliette

Day, Peter (Ceramics and Composite Materials Research Group, Institute of Nanoscience and Nanotechnology)**[171]** *How to Make a Cooking Pot on Lesvos, Greece*

Cooking pots do a job, a hard job. As a result, we have enshrined them as a special measure of ceramic functional suitability, a witness to know-how, and even technological progress. This paper explores the production of cooking pots by three different groups of potters on the island of Lesvos, Greece, over the course of the twentieth century until the present day. Located only a short distance from the mainland of modern day Türkiye, Lesvos has hosted the influx of potters from both coastal Asia Minor and the islands of the Aegean, as well as the long-established production on the island itself. Cooking pots have been produced by these groups in different styles and under contrasting circumstances. Distinct choices in terms of raw material selection, vessel morphology and surface finish characterize the three pottery traditions discussed: potters from Agios Stephanos, Siphnos, and Menemen. We contemplate the role of practice, narratives of tradition, and the changing political landscape in the production of this basic ceramic household equipment, in the face of wars of independence, the demise of the Ottoman Empire, and, more recently, the arrival of electricity and piped water.

Day, Zachary**[334]** *Rock Art 3D Modeling: Documentation and Presentation of Federal Sites*

Rock art documentation strategies often focus on extracting individual panels out from the whole of a rock art site to photograph, document, and study the site. This approach has provided the majority of rock art site documentation on Bureau of Land Management public lands for decades. However, as archaeology and technology have progressed, these strategies are no longer the best approach toward complete documentation. It is becoming increasingly evident that individual panels and murals are not the only components necessary to understand the entirety of a rock art site. The California BLM Bakersfield Field Office archaeological staff have begun utilizing recent technology and documentation practices to fully document entire rock art sites. Full-scale 3D modeling of these sites, with the focus of preserving an accurate representation of the entire space, provides a better record of the rock art murals, panels, and site at the time. Additionally, detailed site documentation at this level can be obtained using readily available technology allowing on-the-go documentation of sites that previously would not have been easily achievable. Lastly, site documentation in this fashion allows for interpretive avenues that offer an improvement to previous interpretive methods that do not do adequate justice to these amazing sites.

De Barros, Philip [171] see Ownby, Mary

De Carteret, Alyce (LACMA)**[172]** *House-Building, Communal Labor, and Place among the Maya*

This paper examines communal labor as a principal means by which people make and experience their place in the world. Emplacement is an active and ever-evolving phenomena that emerges from the things people do together. For Maya communities past and present, building a house is a paradigmatic example of communal, placemaking work. A house, of course, is not just a physical space but also a sociocultural place laden with meaning. To build such a place is an act of engagement and negotiation: with the structures that orient society at large, with the properties of the natural world, with embodied knowledge shared between generations of practitioners, and with the cosmos itself. Through communal labors like house building, Maya peoples maintain community bonds and socialize the youngest among them. And the house, itself a new member of the community, must be socialized too. Rites guide both house and household into proper communion, re-creating cosmic order. In a literal act of world-making, the construction of a house (re)centers and anchors the cosmos around the household and community. This paper builds on archaeological, art historical, ethnohistoric, and ethnographic evidence of Maya house building to demonstrate how placemaking and community building go hand-in-hand.

De Ceuster, Sarah [228] see Wang, Chen

de Jesús Verdejo Balan, Montserrat [349] see Tsukamoto, Kenichiro

De La Cruz, Ricardo [182] see Roman Vargas, José

De La Cruz, Rudy, Jr. [322] see Razo, Mikaela

De Leon, Jason (UCLA Cotsen Institute of Archaeology)

[106] *Political Economies Big and Small: Reflections on Ken Hirth's Contributions to Anthropological Archaeology*

Over his long career, Ken Hirth has made important and lasting contributions to our understandings of ancient political economies, craft production, and urbanism across Mesoamerica and beyond. In this paper I reflect on some of Hirth's work and the crucial (but often underappreciated) role that ethnographic analogy, ethnoarchaeology, and ethnohistory have played both explicitly and implicitly in his analyses and in his training of graduate students for the last four and half decades. I highlight some case studies of Hirth's holistic approach to questions about the past and argue that his commitment to a broadly anthropological archaeology has been a cornerstone of his long and illustrious career.

De Souza, Patricio, Isabel Cartajena (Universidad de Chile), Rodrigo Riquelme (Universidad Católica del Norte, Chile), Antonio Maldonado (CEAZA, Chile), and Boris Santander (Universidad Alberto Hurtado, Chile)

[53] *Multidisciplinary Studies on Human and Environmental Dynamics during the Central Andes Pluvial Event (16–9 ky BP) in the Punta Negra and Imilac Basins (24.0°–24.5° S)*

There is consensus that during the Late Pleistocene–Early Holocene (16–9 ky cal BP), climatic conditions on the western slope of the Andes between 18° S and 25° S were wetter than today. This event of higher humidity is known as the “Central Andes Pluvial Event” (CAPE) and is associated with the formation of paleo-wetland deposits due to groundwater discharge in the Imilac (24° S) and Punta Negra (24.5° S) salt flats. In synchrony with the later part of this event (12–9 ky cal BP), more than 30 archaeological sites have been recorded on the shores of these two salt flats and in the ravines that drain into them. In addition, the presence of groves of different species that do not exist today in this area has been detected in spatial and chronological association with the human settlements. In this work, we summarize the paleoenvironmental and archaeological studies carried out in the area, which include (1) sedimentary and magnetic properties of the wetland deposits, (2) pollen analysis in rodent middens, (3) taxonomic study of tree species, and (4) spatial variations of human settlements. These studies allow us to analyze climatic variations and their relationship with human settlement dynamics at different scales within the CAPE.

De Souza, Patricio [331] see Cartajena, Isabel

De Tomassi, Mirko (LMU Munich)

[36] *Funerary Archaeology at Late Classic Palenque: The Grave Goods from Group IV*

Classic Maya grave goods are traditionally understood as offerings for the afterlife or signifier of religious beliefs, identity, and socioeconomic status of the deceased. The variety of interpretations underscores the complexity of these objects, whose funerary usage is influenced by multiple factors. I examine the grave goods recovered from 41 burials recently excavated in the Late Classic compound Group IV at Palenque (AD 500–850). I align with contemporary trends in funerary archaeology that view burials as outcomes of a series of ritual practices. Consequently, I offer a categorization of graves that allows for a detailed analysis of each object in relation to the burial context and skeletal arrangement. Methodologically, it allows identifying the specific activities involving grave goods by considering their spatial distribution within the burial and their association with the deceased. I classify the grave goods from Group IV according to their connection to burial practices: body preparation, inhumation, and posthumous activities (reopening, exhumation, reinterment). The findings reveal a lack of direct correlation between grave goods and the personal attributes of the deceased. Therefore, I argue that grave goods served as crucial instruments for the living in facilitating the deceased's postmortem transformation and their journey to the afterlife. *****This presentation will include images of human remains.**

De Vore, Steven [225] see Wiewel, Adam

Dean, Emily (Southern Utah University)**[234] *Experience and Experiment: Undergraduate Experimental Archaeology at Southern Utah University***

In fall 2024 Southern Utah University, a regional, teaching focused, public university, offered its first ever undergraduate course on Experimental Archaeology. Experimental Archaeology has long been recognized as a particularly effective and impactful educational approach, at both the public and the student level (see Clarkson 2015; Outram 2008; Reynolds 1972). Its active and actualistic approach is fun and engaging, while at the same time cultivating student skills in experimental design and critical analysis. This presentation presents four short case studies focused on experimental class projects, ranging from taphonomic experiments to use wear analyses to actualistic studies of traditional technologies. It also briefly describes the variety of independent projects students undertook for their final projects. In the course of my discussion, I address the challenges of offering this course with a limited budget and laboratory space and examine the measurable and intangible learning outcomes of a face-to-face, hands-on experiential class. I conclude the presentation by looking at how these small-scale campus experiments can contribute to broader community-based educational initiatives.

Dean, Jeffrey (University of Arizona), and Scott Russell**[375] *Dendrochronological Recognition of Two Traumatic Events in Navajo History: The Fearing Time / Long Walk and the 1918 Influenza Pandemic***

Over recent centuries the Navajo of the US Southwest have faced several traumatic periods that affected their culture and lives. Two of the most dynamic of these were the Fearing Time / Long Walk of the 1850s and 1860s and the 1918 Influenza Pandemic. The Fearing Time resulted in the Navajo seeking refuge and safety in protected locations while the Long Walk involved the roundup of most of the Navajo population and their forced relocation to a reservation far from their homeland. The flu, within a period of a few months, caused the death of over 10% of the Navajo population. Utilizing a corpus of over 800 tree-ring-dated Navajo archaeological sites from northeastern Black Mesa, Arizona, we examine the time periods around both events to determine if they are identifiable in the tree-ring records of our sample. Our analysis of relevant sites explores the ways in which both events are, indeed, reflected in the tree-ring record.

Dean, Logan (University of Wyoming, Laramie), and Daniel Hampson (Binghamton University)**[65] *Runnin' Round Bears Ears: Preliminary Reconnaissance and Interpretation of New Lidar-Identifiable Landscape Features in SE Utah***

Over the past five years, the United States Geological Survey's 3D Elevation Program (3DEP) has provided archaeologists across the country with a new lens to view and interpret landscapes and landscape features. Until recently, the 3DEP had unfinished survey of a large portion of southeastern Utah, which includes the majority of Bears Ears National Monument. With the data now published and available to the public, new investigations into the prehistoric occupation, land use, and manipulation are underway. Previously unknown man-made swales, interpreted as "roads" and "loop roads," are the majority of the features being identified and examined. Findings from this reconnaissance provide a starting point for more broad interpretations about how prehistoric landscapes were connected and used.

Dean, Logan [55] see Field, Sean

Deegan, Matthew [336] see Coble, Shawn

DeFreese, Paisley [228] see Cordero, Robin

DeGaglia, Cassandra (Tulane University), Darcie Badon, Hannah Willis (Mississippi State University), and Molly Zuckerman (Mississippi State University; Cobb Institute of Archaeology; Smithsonian Institution National Museum of Natural History)**[333] *Case Studies Reveal Material Complexities of Reconstructing Physical Impairment, Disability, and Health-Related Caregiving in the Past***

Bioarchaeological approaches to health-related caregiving fundamentally engage with the inequities, differential draws on community and household resources, and agency and social identities of providers and

recipients of care in past populations. Thus, conducting this research in a way that incorporates the cultural, community, spatial, and temporal complexities of the necessity, availability, and efficacy of past care requires highly context-specific investigations. However, as we emphasize here, these are dependent on substantial variation in the availability of both direct material evidence for impairment and care (e.g., skeletal individuals) and relevant contextual information (e.g., mortuary archaeological data, archival medical records). Here, we highlight several case studies to explore how reconstructions of physical impairment, disability, and caregiving, especially downstream to trauma and endemic infectious disease (e.g., treponematosi) can be differentially facilitated and constrained. These range from highly stratified well-documented contexts, such as industrializing eighteenth- to nineteenth-century London, UK, and institutions for those with chronic illnesses in early twentieth-century Mississippi, USA, to scarce evidence from egalitarian sociopolitical systems in Mississippian-era Tennessee, USA. Combined, these enable us to begin to comprehend the role of material evidence in reconstructing entanglements between social, economic, and political systems and caregiving in the past. *****This presentation will include images of human remains.**

Degnan, Bridgette (University of California, Santa Barbara)

[228] *An Integrative Social Network Approach to Obsidian Consumption in the Eastern Three Rivers Adaptive Region*
 Across all social ranks, ancient Maya people were connected to both long-distance and local exchange systems that provided access to necessary goods like obsidian, ceramics, salt, stone tools, and granite grinding stones. Many studies of long-distance exchange focus on obsidian because it is ubiquitous at Maya sites and can be geochemically matched to a volcanic source with a high degree of confidence. This poster considers trends in the consumption and production of obsidian in the eastern half of the Three Rivers adaptive region (TRR) during the Classic period (250–810 CE). In this study, I leverage network analysis to understand diachronic trends in the distribution of obsidian artifacts and the centralization of obsidian trade across sites in the region. I test the network models against the geographical distribution of urban centers and architectural investments in public spaces at sites including Chan Chich, Dos Hombres, and La Milpa. The results are considered in the context of ongoing research on marketplaces in the TRR during the Late Classic period. Findings from this study provide insight into the economic integration of the TRR's urban centers, with broader implications for understanding wealth inequality and movements of people, goods, and ideas through this region.

DeGraffenried, Jennifer [223] see Freund, Kyle

Degryse, Patrick [228] see Wang, Chen

Dekker, Joannes [278] see Carolus, Christina

Del Cairo Hurtado, Carlos (Instituto Colombiano de Antropología e Historia), Carlos Reina (ICANH), Juan Sarmiento Rodríguez (NGO Colombia Anfibia), Antonio Jaramillo Arango, and Jesús Alberto Aldana Mendoza (NGO Colombia Anfibia)

[41] *Lo ritual y lo profano de El Dorado: Arqueología del paisaje lacustre del Altiplano Cundiboyacense, Colombia*
 El vínculo entre las comunidades que han habitado por siglos el territorio colombiano y los cuerpos de agua han conllevado a una continua adaptación y apropiación de los paisajes en los cuales conviven y subsisten. En este sentido, una arqueología de la comprensión de estos paisajes y las aguas que los constituyen supone el desarrollo y aplicación de complejos marcos interpretativos que contribuyan a dar respuesta a las complejas preguntas que surgen al analizar el pasado de estas sociedades. Así, los cuerpos de agua continentales y los paisajes que los constituyen han carecido de aproximaciones que ayuden a entender los vínculos y las relaciones entre las comunidades, en este caso prehispánicas, y estos entornos tan relevantes en las trayectorias e itinerarios locales. Particularmente la correlación existente entre las comunidades asentadas en el Altiplano Cundiboyacense (Región Andina) y los cuerpos de agua asociados a lagos y lagunas. En este orden de ideas, el objetivo de la presente ponencia consiste en presentar una apuesta interdisciplinaria por comprender desde la arqueología subacuática los procesos históricos que han incluido la ritualidad de los lagos y lagunas, y la profanación a la cual se han visto expuestos desde el periodo Colonial hasta la actualidad.

Del Cairo Hurtado, Carlos [41] see Sarmiento Rodríguez, Juan

Del Giacco, Luca [316] see Tran, Cathy

Del Solar Velarde, Nino Vadick (Ministry of Culture of Peru)

[386] *Assessing Ceramic Occupations within the Historic Sanctuary of Machu Picchu: Application of a Multiproxy Approach to Understand the Technological Practices at the Archaeological Site of Isla Chico*

In this research, a highly representative sample of ceramics ($n = 80$) from the archaeological site of Isla Chico at the historic sanctuary of Machu Picchu (corresponding to prehispanic pottery from the Formative, Early Intermediate, Middle Horizon, Late Intermediate, and Late Horizon periods) has been characterized through stylistic analysis, macroscopic and microscopic observations (LD), petrographic studies, and chemical analysis (pXRF). In fact, the ceramic sequence at Isla Chico is complete and reflects that the geography around Machu Picchu was active and fully occupied long before the Late Horizon or Inca. The analyses carried out have allowed us to obtain results with major archaeological implications, being able to highlight (1) the recognition of different traditions and technological changes in pottery throughout the periods of occupation through the establishment of technological groups and provenance, and (2) the formal proposal that this space was part of a broad and continuous regional trade network characterized by the transfer of materials, products and information since approximately the first millennium BC.

Delaere, Christophe [41] see Lara Tufiño, Pamela

Delgado, Annmarie (UC Berkeley, Sonoma State)

[194] *Commemorating Childhood: The Bioarchaeology and Mortuary Archaeology of the Achaemenid Levant*

This study examines the social status of children in the Ancient Middle East, focusing on a fifth-century BCE cemetery at Tell el-Mazar, Jordan. Using mortuary archaeology and bioarchaeology methods, the research aims to uncover how children were commemorated within their familial and communal contexts. Bioarchaeological methods will be employed to explore aspects like age, biological sex, and societal constructs of gender and childhood. Concurrently, mortuary archaeology will help me consider issues such as how the living commemorated the dead using mortuary furniture and objects. Although the original excavation data from Tell el-Mazar is unavailable, a comparative analysis with a detailed report from Kamid el-Loz will supplement the study. By examining burial practices and community care for vulnerable members, children, this research seeks to reveal the roles and significance of children within nuclear families and wider communities. Moreover, insights into disease prevalence, living conditions, and intergenerational pathologies will be explored, providing a holistic understanding of childhood in ancient societies. Through this multidisciplinary approach, the study aims to explain the societal values and perceptions attached to children in the past in the Achaemenid era Levant. *****This presentation will include images of human remains.**

Delgado, Miguel (Division Antropología, Facultad de Ciencias Naturales y Museo, UNLP), and George Scott (University of Nevada, Reno)

[165] *The Initial Peopling of the Americas: New Insights from Continental Patterns of Dental Diversity in Past Native Americans*

The early peopling of the Americas is a topic of intense debate. Among the most contentious issues remains the timing of the initial entry of humans into the continent. Currently, archaeological evidence recovered from sites dated to the Last Glacial Maximum has been reported across the New World, indicating that humans entered before that period. However, we still have limited information about the biological diversity of the first inhabitants of the continent because early skeletal remains are scarce, sparse, and unevenly preserved. Here, we evaluate, from a continental perspective and using quantitative genetic methods, the patterns of dental diversity in past Native Americans and discuss peopling models fitting the results obtained. At the continental level, we found a high fixation index ($F_{ST} = 0.08$), where some differences appeared at the regional level, with Arctic populations exhibiting very high diversity, with average variation in other regions. Genetic distances suggest spatial and temporal differentiation, indicating three clusters: Arctic; Northwest Coast; and North, Central, and South America. These results are similar to those obtained using high-

resolution (paleo)genomic data, which supports the notion that the degree of biological diversity found and the patterns of interpopulation differentiation support an earlier date for the initial peopling.

Delgado Espinoza, Florencio (Universidad San Francisco de Quito)

[105] *Temporal Ruptures and Continuities in the Coaque River Valley, Manabí, Ecuador*

The history of northern Ecuador is marked by the enduring resilience of its inhabitants, who have continuously adapted to a dynamic and often challenging environment. Along the northern coast, communities have repeatedly faced significant hardships, including frequent flooding during strong El Niño years, droughts during La Niña periods, and recurrent seismic events. Main of these challenges are the impacts of volcanic eruptions from the nearby Andes. The effects of volcanic eruptions are prolonged, some persisting for centuries or even millennia. These eruptions have played a crucial role in the abandonment, collapse, and displacement of local populations. Despite originating many kilometers away from the coast, these eruptions, particularly due to their Plinian nature, produce vast columns of ash that spread across large areas of the coast, even reaching the ocean. In the Coaque River Valley and its tributaries, we have identified three distinct layers of tephra from these ash falls, which likely caused both the abandonment and subsequent repopulation of the area. These events led to significant cultural ruptures and discontinuities in the region. This study aims to explore the history of the Coaque River Valley by examining the continuities and ruptures triggered by ash falls from Andean volcanic eruptions.

Delgado Espinoza, Florencio [321] see Anzellini, Armando

Delgado González, Carlos [386] see Aráoz, Miriam

Delgado González, Carlos [386] see Quave, Kylie

Dello-Russo, Robert [183] see Rachal, David

Dello-Russo, Robert [53] see Willis, Mark

DeLuca, Anthony

[180] *The “Baja Abajo” on Bajareque at Los Guachimontones*

Small, hard, orange, and usually featureless, *bajareque*, or fired daub, is part of the material culture recovered during excavations. Occasionally, a piece will stand out having impressions of cane or thatch and be regarded as a curiosity. *Bajareque* is often not found in any substantial quantities to warrant closer scrutiny due to its formation under specific circumstances, often the burning of a perishable building covered in daub. At Los Guachimontones, the situation is different. Despite not having desert conditions like at Paquimé, a substantial amount of *bajareque* was recovered by PAT from the years 1999 to 2010. An initial analysis targeting artifact bags containing the greatest weight of *bajareque* revealed surprising results to its recovered contexts, its various forms, and its composition. These results lend new insights into how the guachimontones were constructed and the use of domestic knowledge bases for public construction projects.

Delvigne, Vincent [345] see Marguet, Louis

Demyan, Marcela (University of Georgia), Amanda Roberts Thompson (University of Georgia, Laboratory of Archaeology), Kristine Schenk (University of Georgia, Laboratory of Archaeology), Jay Boyd (University of Georgia), and Emma Iracondo

[227] *Archival Processing and Rehabilitation of Extant Archaeological Collections from the Georgia Coast*

The UGA Laboratory of Archaeology is on year three of an NPS Saving America's Treasures grant to rehabilitate archaeological material and associated documentation and media collected within Georgia's five coastal counties. This includes over 1,500 boxes from more than 300 cultural sites, over 50 different investigations, and represents in some cases the only evidence for cultural sites that are in danger of erosion or development or are already destroyed. With a rehabilitation project as large as this, various curation issues were encountered. This poster addresses these challenges and the strategies developed and presents lessons learned as an example for those beginning rehabilitation projects.

Demyan, Marcela [188] see Parbus, Brett

Denby, Hayden [198] see Harahsheh, Maryam

Deng, Haofan [279] see Tian, Yajing

Deng, Yufei (Harvard University)

[44] *The Sources and Processing of Fuel for Lamps in the Han Dynasty*

The Han dynasty was a prosperous period for lamps that used animal fat (or beeswax) and vegetable paste oil as fuel. While several articles used ORA to confirm the upper class's consumption of animal fat, we argue that commoners often used liquid oil. The pottery oil lamps in the shape of quotidian utensils were widely used for lighting. The only fuel for lamp recorded in Han dynasty literature was oil extracted from gourd seeds and hemp. Experiments simulating the conditions in the Han dynasty suggest that at that time the oil might have been extracted through water boiling and that the lamp wick might have been made of hemp fibers. During the Han dynasty, hemp and gourd were widely planted, the boiling method for extracting oil was easy to practice, the material for wick was readily accessible, and pottery lamps were generally applicable, all of which made pottery lamps a good solution for lighting in the Han dynasty.

Denis, Megan

[129] *Pondering Parenchyma: An Examination of Tubers and Other Plant Tissues Recovered from Housepit 54*

This research provides an overview of the process of parenchymatous tissue identification as well as what plant tissues have likely been recovered from excavations at Housepit 54 thus far. Soil samples have been collected from previous field seasons from 15 floors, then floated to extract macrobotanical remains. These remains were then examined using a microscope, identifying each sample's cellular walls to differentiate woody materials from fleshy tissues. These tissues are likely to be from tubers, but they may also represent fruits, roots, or stems. These separated samples were examined using a scanning electron microscope (SEM). Images taken with the SEM can be used to identify internal plant structures, which can then be compared to modern plant materials. As there is currently a lack of a modern comparative parenchymatous tissue collection for the Mid-Fraser Canyon, the authors are in the process of constructing this comparative collection in addition to examining the recovered material from Housepit 54.

Denis, Megan [129] see Jack, Joshua

Dennison, Rory [44] see Underhill, Anne

Denoyer, Allen [198] see Anderson, Sara

Densmore, AI (University of Wisconsin, Milwaukee)

[302] *CARE to Be FAIR: Case Studies in Accessible Digital Data Management*

Massive amounts of data are produced during archaeological investigations, yet they are often siloed away by individual researchers and institutions or only made accessible through paywalled publications. This widespread inaccessibility makes it difficult to justify the destruction of the nonrenewable resource that is the archaeological record. Digital data repositories such as the Digital Archaeological Record (tDAR) enable researchers and the public alike to preserve, share, and reuse archaeological data in new ways, providing an escape from the endless cycle of destruction and inaccessibility associated with the typical model of archaeological data publication. Using two case studies from tDAR, this research illustrates how the FAIR Guiding Principles for scientific data management and stewardship and the CARE Principles for Indigenous Data Governance can be employed to create meaningful interactions with archaeological data. By keeping data as open as possible, but as closed as necessary, digital data repositories foster reuse and engagement across academic and public spheres. These accessible and reusable case studies are exemplary blueprints for the future of ethical and accessible stewardship in an increasingly digital age.

DePlata-Peterson, Mackenzie**[122] *Is Human Presence Identifiable through the Spatial Composition of Proboscidean Bonebeds?***

Across North America, there have been more than 75 proboscidean bonebeds with proposed evidence of human predation or scavenging (Grayson and Meltzer 2015). Only 14 of these sites are uncontested with strong evidence contributing to a collective agreement that these sites are indeed culturally associated (Grayson and Meltzer 2015). This leaves the vast majority of proboscidean bonebeds in a gray area with ambiguous evidence of human involvement and contested status. This research focuses on investigating human presence at proboscidean bonebeds across North America using a new method that statistically compares the spatial relationships between skeletal elements. For this study I selected 17 bonebeds that I georeferenced in QGIS, and for each, I analyzed skeletal completeness and dispersion using an algorithm I created in the R programming language. Results from this method suggest there are no strong indications of distinct spatial differences between a culturally associated and a natural proboscidean bonebed.

Derian, Alexandra (Trent University), and Paul Szpak (Trent University)**[288] *Possible Scavenging Behavior by Arctic Fox (*Vulpes lagopus*) in the Thule Whaling Zones (Nunavut, Canada)***

Arctic fox (*Vulpes lagopus*) have been hunted by Paleo- and Neo-Inuit for thousands of years, yet little is known about the interactions between humans and arctic foxes prior to the deposition of a fox's remains in the archaeological record. Stable isotope analysis provides an opportunity to explore the life history of individual arctic foxes that shared space with Inuit and were eventually hunted. We analyzed the stable carbon ($\delta^{13}\text{C}$), nitrogen ($\delta^{15}\text{N}$), and sulfur ($\delta^{34}\text{S}$) isotopes of bone collagen from arctic fox and associated fauna in zooarchaeological assemblages from the Thule whaling zones (Nunavut, Canada). Hunting of bowhead whales (*Balaena mysticetus*) was an important subsistence and social activity during the Classic Thule period (~AD 1200–1500), and may have also created a new food source for arctic fox. We found variability in $\delta^{13}\text{C}$, $\delta^{15}\text{N}$, and $\delta^{34}\text{S}$ of arctic foxes that suggests some individuals had a greater amount of marine protein in their diets, possibly indicating scavenging from human settlements. Understanding the foraging ecology of arctic fox from zooarchaeological assemblages yields insight into the relationships between Inuit and arctic fox, beyond the economic value of fox pelts.

Dering, James [174] see Steelman, Karen

Derouen, Hannah [226] see Johnston, Julia

Derr, Kelly [95] see Ryan, Ethan

Derry, Emma (Jamestown Rediscovery [Preservation VA]), Ashley McKeown (Texas State University), Sean Romo (Jamestown Rediscovery [Preservation VA]), Jamie May (Jamestown Rediscovery [Preservation VA]), and Douglas Owsley (Smithsonian Institution)**[75] *Revisiting "The Usual Burying Place" on Jamestown's Statehouse Ridge***

On a ridge to the northwest of the original James Fort site, a large, unmarked burial ground sits beneath the foundations of Jamestown's third and fourth Statehouse structures and the current Archaearium Museum. This burial ground was first discovered in the 1930s and further investigated in the 1950s. Between 2000 and 2004 a large section encompassing 65 graves containing the remains of 78 individuals was excavated by Jamestown Rediscovery archaeologists. Artifactual, demographic, and historical evidence suggests that the burial ground was in use between 1610 and 1630 and likely served most of the settlement's population whose status did not warrant interment within the church itself in the years before a surrounding churchyard was established. New excavations are underway to find the southern boundary of the burial ground on Statehouse Ridge and to assess the accelerating deterioration of the remains caused by increasingly severe wet/dry cycles in the area. This renewed focus presents an opportunity to pursue more in-depth statistical analysis of the demographic and burial treatment data for this burial population, expand knowledge of spatial distribution and patterning, and revisit previous interpretations with the benefit of 20 additional years of archaeology at the site.

Dersam, Sari [300] see Dersam, Scott

Dersam, Scott (Alpine Ecosystems Research Institute), Sari Dersam (Alpine Ecosystems Research Institute), and Katrina Rorhus (University of Cambridge)

[300] *Coming into the High Country: Initial Observations, Geometric Morphometrics, and Raw Material Conveyance Patterning from Clovis Localities in the Mountains of Southwest, Montana*

Between 2021 and 2024, two complete fluted Clovis projectile points and eight fluted point fragments were recovered from five localities in the mountains of southwest Montana. Each of these five localities exhibits formal tools and reduction sequences consistent with Clovis lithic technology. Here we present observation on the 10 fluted points production, geometric morphometrics, and geochemical and visual raw material identifications. Furthermore, we provide preliminary observations comparing our results with the assemblages of other Clovis localities surrounding the central Rocky Mountains. Overall, our results suggest a significant connection between western Clovis localities surrounding the central Rocky Mountains, potentially indicating a macroscale mobility cycle or territory within the Yellowstone Plateau. Furthermore, our data implies the habitual use of high-elevation ecosystems by populations using the Clovis technocomplex in the central Rocky Mountains and that these Late Pleistocene mountain adaptations involved probable extended duration occupations involving diverse domestic behaviors, rather than limited transient hunting forays.

Des Lauriers, Matthew (California State University, San Bernardino), Loren Davis (Oregon State University), and Antonio Porcayo-Michelini (Centro INAH Baja California)

[292] *The Island of Fogs at the End of the Age of Ice: Clear Evidence for Fully Developed Maritime Adaptations By the End of the Pleistocene in Baja California*

Placing people in particular spots in time and space gives only part of the evidence that we need to understand human history. With such limited information, we are adrift as to where populations may have come from and what decisions they were making in a world structured by human knowledge and technological capacity. In Greenland, Viking and Inuit populations occupied overlapping landscapes, but their engagement with their respective worlds were very distinct. We here present evidence from recent investigations of Terminal Pleistocene sites on Isla Cedros, Baja California, that demonstrates an overwhelmingly dominant focus on marine resources as early as 13,400 cal BP. An examination of archaeological evidence for knowledge systems and material technologies can lead to a more robust comprehension of the “how” and “why” for the population movements that fall under the umbrella term “Peopling of the New World,” a complex geographic and demographic process that may directly link Pacific Rim populations of the Pleistocene. Among the most salient items of material culture from early Isla Cedros sites are single-piece shell fishhooks that bear an uncanny resemblance in design, material, and function, to hooks from even earlier Pleistocene sites in Indonesia and Okinawa, Japan.

Des Lauriers, Matthew [56] see Duarte, Claritsa

Des Lauriers, Matthew [382] see Porcayo-Michelini, Antonio

Des Lauriers, Matthew [292] see Stone, Samantha

Devlin, Sean (Colonial Williamsburg Foundation)

[33] *Exhibiting Knowledge: Archaeology in a Museum*

The archaeology department of the Colonial Williamsburg Foundation is committed to the practice of public-facing archaeology. This work takes many forms from community and descendant partnerships to public programming at sites of active research excavation. The fall of 2024 saw the first time this work was extended to include an exhibition solely of archaeological artifacts in the DeWitt Wallace Decorative Arts Museum. The exhibit *Worlds Collide: Archaeology and Global Trade in Williamsburg* features over 220 objects excavated from within the city of Williamsburg and the surrounding region. The goal of the project was to encourage visitors to reflect on the ways objects are evidence of overarching historical processes such as colonialism and capitalism, as well as individual acts of social agency, resistance, and persistence in the century of the nation’s founding. While the display of artifacts may be among the oldest forms of exhibition of archaeological knowledge, work on *Worlds Collide* highlighted the need for continual retheorization and development of narrative practice within this form of public-facing effort. This paper reflects on the process by which archaeological knowledge was connected through objects and narratives to the visiting public within the context and framework of a modern decorative arts museum.

DeWitte, Sharon (University of Colorado, Boulder), and Eric Jones

[238] *'Til Death Do Us Part? Effects of Marital Status on Patterns of Mortality in Nineteenth-Century Upstate New York*

Numerous studies of twentieth- and twenty-first-century populations have produced evidence of a health-promoting effect of marriage. Fewer studies have examined this effect in older historical populations. In an effort to contribute to our understanding of the potentially historically and culturally contingent nature of the effect of marriage on health and demography, we analyze mortality schedules from federal and state census records ca. 1850–1880 for the primarily rural, agriculturally based Madison County in Upstate New York. Specifically, we use Kaplan-Meier survival, Cox proportional hazards, and Chi-square analyses of data on age, sex, cause of death, and marital status. Our results reveal a substantial, significant effect of marital status on survivorship and risks of mortality for both men and women (i.e., higher survivorship and lower hazards of death for married individuals). Analysis of proportionate mortality indicates that single individuals suffered significantly higher rates of infectious disease and external causes of death (e.g., accidental injury, poisoning, homicide, and suicide), and married people experienced higher rates of noncommunicable disease, in line with expectations based on survivorship. However, we also find that married men experienced a more dramatic benefit with respect to health and mortality compared to married women.

DeWitte, Sharon [238] see Reardon, Emily

Diaz, Hugo [335] see Kaplan, Jonathan

Diaz, Katherin [290] see Mayes, Arion

Diaz, Spencer

[202] *Cephasylogy and “Trophy Heads” in Fremont Culture*

The presence of flayed scalps, severed heads, and ears (henceforth referred to as cephasiles) preserved in the archaeological record of the US Southwest suggest a greater diversity in significance than simply a status-granting warrior’s symbol, as previously thought. In this paper the author makes an argument in favor of three broad categories of cephasiles, depending on the purpose of the cephasile; those wherein the purpose of the cephasile is for the benefit of the crafter/carrier, those wherein the benefit is for the deceased, and those wherein the benefit is for the community. The following work is primarily concerned with the Basketmaker and Fremont cultures, but the practices of Uto-Aztecan cultures broadly are considered.

***This presentation will include images of human remains.

Díaz-Andreu, Margarita (ICREA, Universitat de Barcelona)

[185] *Hidden Female Hands in Spanish Archaeology: A Perspective from the Herstory Project*

In the past five years, the history of women in Spanish archaeology has been explored through two projects: ArqueólogAs (2020–2024) and Herstory (2024–2028). The Herstory project aims to provide a global, comparative, and diachronic perspective on women’s roles and contributions in Spanish archaeology. A key method has been collecting biographical information on women working in Spanish archaeology and Spanish women abroad from the eighteenth to the twentieth centuries. Building on the extensive biographies available at <https://arqueologas.es/pioneras>, this paper examines the diversity of women’s roles within the discipline. It begins with an overview of women’s integration into professional archaeology across universities, museums, archaeological administration, and contract archaeology. The primary objective is to uncover the “hidden hands”—women whose contributions have been neglected in archaeological histories. These women served as assistants, illustrators, librarians, coordinators, and in numerous other roles deemed minor, leading to their erasure from disciplinary memory. The paper concludes by advocating for archaeology to be recognized as a collective practice that includes a more diverse range of actors, particularly women. Acknowledging their role in creating archaeological knowledge is an essential and overdue task. This work is part of the Herstory project (ref. PID2023-149477NB-I00).

Diaz-Guardamino, Marta [85] see Robson, Archie

Dibble, Flint (Cardiff University)

[155] *It's Time To Talk about Pseudoarchaeology: Impacts, Strategies, and Outcomes for Engaging with Archaeology Misinformation*

Over the last few decades, pseudoarchaeology has dramatically increased in popularity. While it might seem easy to laugh off and ignore, as these claims are widely divorced from the reality of our lived experience as archaeologists, the savvy tactics used by pseudoscientist influencers means that misinformation has a real cost on the field of archaeology and its stakeholders. Pseudoarchaeologists have an outsized impact on the public perception of our field, with best-selling books in the archaeology section, top TV shows and online videos, and major media headlines. These impacts have had a knock-on effect on how archaeological sites are managed across the world, from here in the United States to Turkey to Indonesia. Due to the increasing frequency of these negative impacts, we must become informed and respond in an effective manner. In this paper, I critically examine my own journey in high-profile engagement with the Atlantis “Lost Civilization” branch of pseudoarchaeology, from Joe Rogan and newspaper headlines to Twitter and YouTube. Drawing on up-to-date misinformation research, I present effective strategies for engaging with the media and on social media, addressing the dangers and benefits of public engagement. The conclusion is clear: we have to engage. But in a strategic manner.

DiBiase, Benjamin (Burns & McDonnell)

[94] *The Diversity of Growth in Kansas City: Connecting Archaeological and Historical Research in Kansas City's Historic Northwest Neighborhoods*

In 2019, the Missouri Department of Transportation (MoDOT) contracted Burns & McDonnell Engineering Company Inc. (Burns & McDonnell) to complete this survey in compliance with all applicable federal laws and in accordance with the relevant stipulations of a Programmatic Agreement. Over the course of the next five years, archaeologists conducted archaeological survey, testing, and data recovery excavations. During this period, they identified several sites eligible for the National Register of Historic Places (NRHP) and conducted thorough excavations and diagnostic analyses on thousands of artifacts recovered. Concurrent to that work, historians uncovered a complex narrative of diverse and nuanced occupation patterns within the project area, spanning from approximately 1870 to 1950. Located in some of Kansas City's oldest neighborhoods, this paper provides an overview of the effort to integrate a complex urban archaeological record with archival records, shedding new light on the underrepresented communities that contributed to the development of one of the most influential urban centers in the United States.

Diboyan, Larra (University of Tennessee, Knoxville), Molly Zuckerman (Mississippi State University; Cobb Institute of Archaeology; Smithsonian Institution National Museum of Natural History), James Hardin (Mississippi State University), and Shawn Lambert (Mississippi State University)

[237] *Jugha: How Story Mapping Can Reveal Landscape Structural Violence*

Old Jugha, located in the Azerbaijani exclave of Nakhichevan, was once a prosperous ancient Armenian city with its famous cemetery filled with Khachkars in the borderlands between two adversarial empires, the Ottoman and Persian. Jugha suffered three periods of destruction over three centuries, which have been supported and supplemented through the utilization of historical narratives and eyewitness accounts. The first period was in 1604–1605 by the forced removal of the population and subsequent vandalism of the city by Shah Abbas I's troops. From 1903 to 1904, during the second period, the Oulukhanlu-Julfa Railway used rubble from the town and khachkars as fill to level the path. The third and final period occurred between 1998 and 2006, with the complete erasure of the site by the Azerbaijani government. Using an ethnohistorical approach to landscape archaeology and twenty-first-century technology, an erased site can be revived through story mapping and community engagement. Furthermore, using these digital techniques and ethnographic and ethnohistorical evidence, theoretical frameworks such as landscape structural violence can be visualized and applied to these destructive state acts.

Dick, Kelly (National Park Service)

[179] *Indigenous Connections at Rocky Mountain National Park: Embracing People as Part of the Landscape*

Rocky Mountain National Park is located along the Continental Divide of northern Colorado. Park staff strive

to be inclusive of ancestrally connected Tribal Nations. Indigenous people have fostered relationships with the plants, animals, and beings that also call these mountains home. The Indigenous Connections Project is a long-term interdisciplinary effort to incorporate Indigenous perspectives, including modern and ancestral uses and histories of the area into park programs and stewardship strategies. Indigenous people maintain their connections to ancestral lands via cultural memory and practice as well as their continued stewardship of the landscape. How do we manage archaeological sites as landscapes and provide opportunities for continuing cultural practices? Is cultural practice a form of preservation? This presentation discusses the challenges and opportunities associated with managing a dynamic landscape in a way that is culturally appropriate and respectful of Tribal sovereignty.

Diederichs, Shanna (Woods Canyon Archaeological Consultants)

[55] *The Application of Lidar in the Documentation and Protection of Chacoan Great Houses*

Chacoan great houses, dating to the tenth and eleventh centuries AD, are one of the most impressive and enigmatic categories of Ancestral Pueblo architecture in the Southwest. Affordable and convenient lidar scanning applications now allow us to generate extraordinary images and scaled interactive models of these structures. Lidar products can contribute to our understanding and protection of the Chacoan built environment but to do so they must be applied systematically and made accessible to descendant communities and cultural heritage managers. This paper discusses the integration of lidar into the Intermountain Region National Park Service Architectural Documentation process, which is designed to contextualize architectural elements within the layered history of a great house and the built environment of Chaco. The documentation package also captures and quantifies acute and long-term deterioration threats and provides a platform for comprehensive conservation planning. Lidar models can contribute to every stage of this process. In short, lidar is changing our perception of Chacoan great houses and it is up to us to ensure the application of this tool is used to capture the intricacies and significance of these structures and to protect and preserve them in culturally competent ways.

Dierks, Zachary (University of Oregon), and Cristina Castillo (UCL, Institute of Archaeology)

[61] *Plant Remains from Baset Village: A Provincial Angkor Archaeobotanical Analysis*

A key aspect in understanding people's lives in the past is to identify the relationships with their environments, and in particular, human-plant entanglements. Plants are important to Southeast Asian contexts as they have traditionally been used (and continue to be used) in day-to-day life for many things such as foods, crafts, medicines, fuel, and rituals. Baset Village, a provincial Angkorian site in Battambang, Cambodia, with substantial Pre-Angkorian and Angkorian contexts, provides a rich case study in which to study these relationships and their changes over time, allowing us to begin to bridge the Pre-Angkorian and Angkorian periods. This paper explores the methods used to gather archaeobotanical materials from Baset Village as well as the preliminary results from archaeobotanical analysis. The archaeobotanical examinations of the site go hand-in-hand with other analyses to help us better understand changes occurring during the Pre-Angkorian and Angkorian periods such as possible agricultural intensification and changes in the importance of particularly useful plants.

Diezbarroso, Alberto (INAH), Gracia Sara Vargas Carbajal (ENAH, PUCP), Erick Marcial, Manuel Barragan, and José Antonio Álvarez

[48] *Nuevos aportes para la arqueología de la región de Valsequillo, Puebla: Hallazgo de una unidad doméstica del Posclásico en Zacachimalpa*

Los recientes estudios de unidades domésticas en arqueología, han aportado nuevas interpretaciones para aproximarnos a entender las dinámicas sociopolíticas regionales en diferentes escalas de análisis, sean éstas a nivel local o incluso suprarregional. En el área de Valsequillo, en los valles centrales de Puebla, este tipo de contextos no habían sido registrados, por lo cual no existe mucha información al respecto. Es hasta el año 2023 cuando, como resultado de un salvamento arqueológico, se descubrió una unidad doméstica del Posclásico, la cual pone de manifiesto las relaciones culturales entre Cholula y la región de la Mixteca Baja de Puebla. Este artículo subraya la importancia de la región Valsequillo - Totimehuacan, dentro de la ruta de un corredor comercial que partía desde Cholula hacia el sureste de México. ***Esta presentación incluirá imágenes de restos humanos.

Dillehay, Tom**[106]** *Ken in Kentucky (and Beyond)*

This presentation is a discussion of Ken Hirth's academic and professional contributions to the anthropology and archaeology program at the University of Kentucky when we were colleagues there in the 1980s and 1990s. It also entails Ken's brief career in Peru where we first met and other aspects of our friendship and collegiality over the past four decades.

Dillian, Carolyn [340] see James, Sydney

Dillinger, Michael (University of Oklahoma)**[190]** *Analysis of Lithic Material from Las Chachalacas*

This poster presents the analysis of ground stone tools and chipped stone material from Las Chachalacas, Sonora, Mexico, excavated in the winter of 2021 to 2022. Numerical dates suggest a periodic occupation from the Early Archaic period to the Early Agricultural period. The ground stone tool analysis focuses on the intensiveness of grain processing (wild or domesticates). This is facilitated by a measurement of the size and ground surface area of artifacts and depth of bottom stones (metates). The chipped stone artifacts, specifically the bifaces, permit an evaluation of the transition from a mobile hunter gatherer lifeway to a more sedentary lifeway. This was facilitated through an attribute analysis that included material type, stage of reduction, and dimensions of the chipped stone pieces. The use of bifaces as cores or tools was further evaluated through flake scar sizes and the presence of fine retouch.

Dine, Harper (Brown University)**[325]** *Making Place with Plant Foodstuffs at Yaxuna and Joya, Yucatán*

Food practices are fundamentally emplaced, occurring in spaces such as gardens, kitchens, house lots, farming plots, markets, or underground ovens. At the same time, the relationships and memories cultivated with and amid particular foodstuffs, necessarily somewhere, contribute to the meaningful existence of those very places. In this paper I present microbotanical findings from a set of ceramic sherds and obsidian blades excavated in household and agricultural spaces at Yaxuna and nearby Joya, two ancient Maya sites connected by a sacbe, and occupied in both the Preclassic and Classic periods. These objects span a range of time periods and, along with their associated contents, reflect the material and embodied experience of food preparation and consumption at different points in space-time.

DiPietro, Lyndsay [96] see Graf, Kelly

Diserens Morgan, Kasey (University of Pennsylvania)**[159]** *Creating La Buena Vista? Heritage Preservation and the Changing Nature of Archaeological Practice in Tihosuco, Mexico*

Government interventions and local restoration work on historic era buildings in the rural town of Tihosuco, Quintana Roo, Mexico, have changed the nature of the relationship between the buildings and the community, and subsequently the community and their history. These structures are still occupied by local residents, which changes the ways in which archaeology and preservation can be conducted. I will present my reflections about how the heritage preservation work being done in Tihosuco has created "La Buena Vista," or a veneer that looks like progress in town. The focus remains on the materiality of the past, and not on how it is being used in the present, and for the future. This paper will then suggest how the methods of historic preservation and historical archaeology can come together to create a practice of heritage that builds from historic materials to a collaborative and public facing endeavor.

Disotell, Samuel [86] see Drees, Svenya

Disque, Candice (Statistical Research Inc.), Michael Heilen (Statistical Research Inc.), and Shelby Manney (Arizona Army National Guard)**[92]** *A TRU Approach to Landscape Archaeology in the American Southwest*

Landscape archaeology can be defined as the interplay between humans and their environment as derived

through scientific approaches, historical studies, and ethnography. Sections 106 and 110 of the National Historic Preservation Act require federal agencies to manage historic properties and consider project-specific and cumulative effects to historic properties and Indigenous landscapes. Agencies are now adopting landscape approaches to management but are limited to conventional survey methods and lack methods for recording and managing landscapes. There is increasing interest from Indigenous groups to adopt a survey method that bridges compliance with traditional knowledge and the natural world and considers the landscape as the dynamic, living entity it is. Integration of Tribal interests into survey design allows for a better understanding of how Tribes interact with the landscape and informs the agency on approaches to protect it from emerging climate impacts. The transect recording unit (TRU) survey system is a holistic and comprehensive approach to pedestrian survey that can not only help agencies meet their compliance requirements but also strengthen relationships with consulting Tribes and better address the impacts of climate change and development. This poster explores how the TRU system can address requirements to incorporate landscape studies into pedestrian survey.

Dittmar, Jenna [79] see Berger, Elizabeth
Dittmar, Jenna [321] see Welch, Nathan

Divido, Jared (University of Pittsburgh)

[225] *Evaluating Desktop 3D Laser Scanning Technology for Digital Replication of Faunal Bones*

This poster presentation highlights the feasibility of using desktop 3D laser scanning technology for digital curation and creating accurate digital replicas of faunal bones for comparative and educational purposes. It compares the performance of two different desktop scanners, focusing on their ability to replicate the humeri, carinae, and coracoids of various Anatidae species. The study finds significant differences in performance, with one scanner achieving an 86% overall scan completion rate compared to the other's 2.7%. The presentation also discusses how the application of powder enhances scan completion rates and explores the implications of these findings for selecting equipment and preparation methods in zooarchaeological research. This work emphasizes the importance of choosing the right scanning technology and preparation techniques for digital curation and creating detailed digital models of faunal bones. It also suggests directions for future research to refine digital replication methods in archaeology.

Dixon, E. James (Maxwell Museum of Anthropology)

[292] *The North Pacific Coastal Migration Hypothesis: New Insights from the Northwest Coast*

A transitory island archipelago along the southern coast of Beringia existed ca. 30,000–8000 BP and may have facilitated human dispersals to the Americas from NE Asia. However, opportunities for human dispersals southward from the Gulf of Alaska along the Northwest Coast (NWC) of North America were constrained by the extent of glacial ice during the Last Glacial Maximum (LGM). This may have restricted opportunities for human dispersal southward along the coast to two intervals, or “pulses”: (1) prior to the LGM ca. 30–21,000 BP and (2) following the LGM ca. 18–14,000 BP. Evidence from the northern NWC demonstrates that the first human occupation did not originate from the microblade traditions of interior eastern Beringia. It developed independently on the NWC from the fusion of a resident coastal non-microblade-using population and people from interior Canada following deglaciation of the Canada's Stikine Plateau ca. 12,500–10,700 cal BP. Older NWC sites, paleoenvironmental evidence, isotope, aDNA, and artifact analyses indicate that the NWC was first occupied sometime prior to ca. 14,000 cal BP by an early maritime archaeological tradition emphasizing the production of organic artifacts using flake, percussion, and abrading tools and occasionally stemmed and foliate bifaces for large mammal hunting.

Dixon-Hundredmark, Chris (Bellevue College)

[349] *Echoes of Who Once Lived Here: The People of the Classic Maya Site of Joya de Cerén, El Salvador*

The Classic period Maya farming community at Cerén, El Salvador, is world renown for the extraordinary preservation of living surfaces, buildings, an earthen road, and agricultural fields covered by multiple meters of volcanic ash. Through decades of careful archaeological research, we have gleaned important insights into communal organization, political economy, household specialization, and agricultural production at the site. Noticeably absent in the archaeological record has been individualized traces of the identities of those who

lived in these spaces. The emphasis on households rather than specific individuals affords key insight into Cerén's community structure. Despite the exceptional preservation of the site, with an almost complete lack of human remains, images of individuals, or faces carved into stone, archaeologists are still left gleaning microscalar traces of the people who once occupied these spaces. While individual corn kernels in the fields and a human footprint on the sacbe are captured in this archaeological record, the echoes of Tringham's (1998) "faceless blobs" are still challenging to overcome. This paper explores the dearth of conspicuous individual emphasis in evidence from Cerén, draws on previous interpretations, and reexamines what we know about the people who called this place their home.

Dober, Joseph, Rachel Cajigas, and Alexandre Tokovinine (University of Alabama)

[169] *Restructuring and Redefining Place: The Role of La Sufricaya in the Holmul Region*

La Sufricaya is a smaller site within the Holmul region, but its size belies its significance in the local political history. Recent magnetic gradiometry and ground truthing research on La Sufricaya's plazas reveal their internal structure (and restructuring) and emphasize the importance of La Sufricaya as the regional seat of power in 378–550 CE. Public spaces and monumental architecture at La Sufricaya were clearly meant to serve a wider political community. Their subsequent modifications reveal an increased emphasis on memory and a reorientation of the external connections that sustained the local regime.

Dobinson, Alice [207] see Cooper, Anwen

Dodd, Lynn (USC), Sabina Zonno (University of Southern California; Huntington Library), Lauren Malkoun (Sapienza University of Rome), and Mathieu Borges (University of Southern California)

[227] *Virtual Experiences of Sustainability and Substance that Promote Wider Audience Access to Archaeological Spaces and Ancient Manuscript Preservation*

Empowering manuscript repositories and increasing audience agency in encounters with ancient materials is a key goal of the Virtual Reality Global Library (VRGL). Our research supports the dual—and often dueling—missions of preservation and access that curators and conservators confront daily. Moderately tech-savvy people gain a means of transforming legacy or new 2D scans of parchment manuscripts into an immersive VR headset experience of interactive reading of ancient books with realistic 3D parchment page physics simulation. This NEH-funded project is Unity-based and is intended for wide, free public use. We show a 500-year-old manuscript from the University of Southern California in a gendered space. Archaeologists gain the ability to include evidence-based 3D models as the interactive, virtual space in which the embodied experience of presence unfolds. Input from conservators and curators prompted a focus on the preservation role of museums and the life history of the manuscript. In this way, everyone can do more with manuscripts including experiencing them anew. Anyone who has wished for the superpower of reaching into a museum case to turn the pages of a rare, fragile manuscript gains that ability, with translations and interactives. No travel is required for a sustainable, low carbon footprint experience.

Dodge, Robyn (Hicks & Company)

[109] *Once a Mentor Always a Mentor: Two Decades of Research, Pedagogy, and Life Lessons from Dr. Fred Valdez Jr.*

This paper reflects on research, pedagogy, and life lessons from Dr. Fred Valdez Jr. His lifelong commitment to archaeology, teaching, mentorship, and scholarship will be emphasized but are too numerous to name in this context. His many contributions to ancient Maya commoner theory and social complexity revolutionized the perception of everyday people in the past. This approach is transferable to his teaching and mentorship philosophy. Dr. Fred Valdez Jr. is tactful and impactful in cultivating meaningful relationships while demonstrating strong and steady leadership. In summary, this talk will focus on my personal experience learning from and collaborating with Dr. Valdez first as his student and now as a professional archaeologist. The paper will celebrate his mentorship and its successes.

Dodge, Robyn [228] see Sabourin, Faith

Dodge, Sophia (University of Utah), Alexandra Greenwald (University of Utah), and Hayley Kievman (University of Utah)

[126] *Gambel Oak Acorns as a Food Resource in the Great Basin, Colorado Plateau, and Southwest*

This project addresses the understudied presence of Gambel oak acorns in the archaeological record of the Mountain West. While ethnographic data indicate that some Indigenous groups in the region consumed Gambel oak acorns, their recognition in archaeological contexts has been limited. Recent ethno-experimental work shows Gambel oak acorns have a high caloric return rate and low processing costs; however, their inclusion in the diet is dependent on the availability of other higher ranked resources. This study explores why Gambel oak acorns, despite their high caloric returns and low tannin content, have not been visible in the archaeological record by assessing cap, shell, and nut preservation based on ethnographically informed cooking and disposal methods. Preliminary results indicate that burned acorns remain identifiable and intact up to 400°C at which point they ash. However, these results do not account for postdepositional taphonomic processes. An improved recovery of Gambel oak acorns from the archaeological record of the Mountain West has potential to improve our understanding of past human responses to climate change and the ongoing struggle for Indigenous food sovereignty, providing valuable insights into sustainable food sources for the future.

Doershuk, John (University of Iowa Office of the State Archaeologist)

[340] *A Community-Inspired (and Energized) Mastodon Excavation in Southern Iowa*

Wayne County is a relatively remote and lower population density (96th of 99) rural county in Iowa but features the vibrant and well-managed Prairie Trails Museum that enjoys strong community support. A 2022 discovery by an area resident of a complete and surprisingly well-preserved mastodon femur in a drainage in the southwest part of the county led to a community-initiated research project that ultimately included the landowners, museum staff, University of Iowa Office of the State Archaeologist (OSA) personnel, and local interested avocationalists. Initial project development took the traditional form of requests to OSA to “please come do a dig!” that typical time and especially cost constraints rendered almost impossible to contemplate. As key community leaders came to understand the realities of the logistics and expenses associated with the scientific recovery of an unknown quantity of potentially well-preserved megafauna remains—particularly if approached archaeologically (a condition of OSA involvement)—the tenor of the relationship evolved significantly into a real collaborative enterprise. Local control emerged and energized the project, continuing today into the conservation, analyses, and exhibition design phases. This presentation serves as a practical case study focusing on how the project was organized, funded, and operationalized.

Doery, Mairead (University of Arizona)

[368] *Iconographies of Interaction: Relating Rock Art Images in Western Colorado*

North American rock art researchers have long relied on stylistic conventions for identifying the age, cultural association, and, therefore, presumed “meaning” of petroglyphs and pictographs. These categories project archaeological lenses onto Indigenous iconography; when employed at rock art sites bearing multiple iconographic “styles,” this approach isolates individual icons from one another based on their assumed origins. Conversely, a relational approach like those advocated for in Indigenous studies encourages archaeologists to consider the ways that rock art images relate to and interact with the whole of their physical and metaphysical contexts. This includes images on or in the vicinity of a given panel that are ordinarily associated with different Indigenous groups. In this paper, I take a relational perspective to examining a multicomponent rock art site in Dominguez Canyon, Colorado. Drawing from local ontologies related to land use and relationality, I analyze the layering of iconographic forms adjacent to and over one another, and how interactions between images record understudied aspects of Indigenous history in this region. In doing so, I demonstrate that an over-reliance on discrete, Western categories for identifying rock art images obscures important relationships between individual icons and thus the narratives depicted on complex rock art panels.

Doessel, Fiona [174] see Levchenko, Vladimir

Dogandžic, Tamara [234] see Carlson, Meredith

Doherty, Caitlin (Center for the Study of the First Americans, Texas A&M University), and Ted Goebel (University of Kansas)

[382] *Hemispheric Perspectives on Paleoindian Settlement Organization: A Comparison of Western Stemmed Tradition and Fishtail Patterns*

Conventional models of Paleoindian settlement organization characterize the earliest inhabitants of the Western Hemisphere as highly mobile foragers operating in large territories, selectively utilizing high-quality toolstone. Raw-material studies, and particularly those engaging geochemical approaches, have been centered prominently in these discussions. Recent attention, however, has been paid to their limitations. Specifically, the common overemphasis on projectile points and volcanic toolstone and little consideration of differentially distributed lithic landscapes can all contribute to the overestimation of Paleoindian mobility. In this presentation, we compare emerging patterns of settlement organization and landscape use associated with two Paleoindian technologies from North and South America. From North America, we present our recent studies combining raw-material and lithic-technological approaches to Western Stemmed assemblages in the eastern Great Basin and discuss the resulting nuanced pattern of high mobility and exotic toolstone use alongside local exploitation of poorer quality materials as an adaptive response to regional toolstone scarcity. Additionally, we evaluate existing evidence for high mobility among Fishtail-equipped populations across South America. Through this comparison, we seek to reach a more comprehensive understanding of Paleoindian behavior on both continents.

Doherty, Caitlin [57] see Goebel, Ted

Dolan, Georgia [216] see Cossin, Zev

Dollinger, Samantha [45] see Boutin, Alexis

Dombrosky, Jonathan (Crow Canyon Archaeological Center), Miranda LaZar (University of Arizona), Corrie Hyland (University of Oxford), and Seth Newsome (University of New Mexico)

[288] *Individuals from Isotopes: Can Stable Isotopes Distinguish the Remains of Different Cooper's Hawks (*Accipiter cooperii*)?*

Zooarchaeologists frequently try to calculate or isolate individual animals from assemblages that are highly fragmented and commingled, which often presents serious methodological hurdles. Biomolecular approaches can vastly improve the ability to identify individual animals from archaeological contexts but some, such as aDNA analysis, are cost prohibitive. Stable isotope analysis is a cost-effective biomolecular tool commonly used in zooarchaeological research that can identify individuals in the past through comparison of isotopic variation within and between individual animals. We test the reliability of this approach using a collection of modern Cooper's Hawks (*Accipiter cooperii*). We provide paired carbon ($\delta^{13}\text{C}$), nitrogen ($\delta^{15}\text{N}$), and hydrogen ($\delta^2\text{H}$) isotope values of bone collagen, muscle, and liver from the same 10 skeletal elements across 20 individuals. We explore this dataset from a few different angles: providing basic descriptive statistics, calculating the amount of overlapping isotopic space across individuals, and estimating individual animal prediction accuracy with machine learning models. We find that there is large within-individual variation, a high degree of overlap, and that prediction accuracy is low. Our results suggest that identifying individuals from isotopes is difficult at best, but focusing on bones that grow similarly and using multiple isotope systems can help improve accuracy.

Dombrosky, Jonathan [86] see Satterwhite, R. David

Dombrosky, Jonathan [196] see Welker, Martin

Domic, Alejandra (Pennsylvania State University), Amber VanDerwarker (University of California, Santa Barbara), Heather Thakar (Texas A&M University), Kenneth Hirth (Penn State University), and Douglas Kennett (University of California, Santa Barbara)

[235] *Archaeobotanical Evidence Supports Indigenous Cucurbit Long-Term Use in the Mesoamerican Neotropics*

The squash family contains some of the most important crops cultivated worldwide. Squashes were among

the first cultivated crop species, but little is known about how their domestication unfolded. We employ direct radiocarbon dating and morphological analyses of desiccated cucurbit remains from El Gigante Rockshelter, Honduras, to reconstruct human practices of selection and cultivation of *Lagenaria siceraria*, *Cucurbita pepo*, and *Cucurbita moschata*. Direct radiocarbon dating indicates that humans started using *Lagenaria* and wild *Cucurbita* starting ~10,950 cal BP, primarily as watertight vessels and possibly as cooking and drinking containers. A rind directly dated to 11,150–10,765 cal BP represents the oldest known bottle gourd in the Americas. Domesticated *C. moschata* subsequently appeared ~4035 cal BP, followed by domesticated *C. pepo* ~2190 cal BP associated with increasing evidence for their use as food crops. Statistical analysis of seed size and shape show that archaeological *C. pepo* assemblage exhibits significant variability, representing at least three varieties: one similar to present-day zucchini, another like present-day vegetable marrow, and a native cultivar without modern analogs. Our archaeobotanical data supports the hypothesis that Indigenous cucurbit use started in the Early Holocene, and that agricultural complexity during the Late Holocene involved selective breeding that encouraged crop diversification.

Domínguez Pérez, Cuauhtémoc [48] see Trejo Ordoz, Alondra

Dong, Tianyi (Universitat de Barcelona)

[185] *Reconstructing Women's Contributions in Chinese Archaeology: Roles in Fieldwork and Museums*

In the history of Chinese archaeology, despite the significant contributions of women in Chinese archaeology since the early twentieth century, the discipline's historical narrative has remained predominantly male-centric, with women's voices seldom featured in mainstream discourse. Although women have played a vital role in fieldwork, museums, and other research institutions, their contributions have largely been marginalized within the field's discourse. Over the past decade, limited studies have been dedicated to the history of female archaeologists, and most research on women in Chinese archaeology remains observational. This paper advocates for the development of a more equitable and pluralistic methodology that reexamines the role of women in the discipline highlighting their overlooked contributions. Using an intersectional approach, this paper explores the contributions of female archaeologists, focusing on how factors like class, identity, and gender shaped their integration into the field. Through documentary and oral history methods, this study examines the barriers that have hindered women's progress and seeks to dismantle these invisible obstacles.

Dong, Yu [320] see Huang, Xinyi

Dongoske, Kurt (Zuni Cultural Resource Enterprise), Giorgio Curti (Cultural Geographics Consulting; San Diego State University), Edward Wemytewa (Pueblo of Zuni Tribal Council), and Emily Williams (University of California, Merced)

[99] *For Not Limiting Material Culture: Becoming Worthy to the Effects of Climate Change through the Life of Ino:de Heshoda:we*

The effects of climate change disproportionately impact indigenous peoples and their deep time and deep space adaptive capacities. Diminishments in such capacities are overwhelmingly the product of the converging courses of capitalism, industrialism, and colonialism. This presentation examines how colonial- and industrial-induced climate change is expected to impact the Pueblo of Zuni community; included are the impacts to their broader cultural landscape(s) inclusive of water, plants, animals, and Ino:de Heshoda:we, or ancestral places and materials commonly reductively termed "archaeological." Drawing from collaborative work with Zuni in developing a climate-change response and resiliency document based on lessons of the ancestors, we navigate Zuni traditional praxes as productive responses to these harmful effects. We also identify the consistent failure of federal agencies to meaningfully address climate change in their permitting and licensing processes and under compliance procedures of Section 106 of the NHPA and NEPA. We then highlight how agency failures to incorporate informed understandings of colonial- and industrial-induced direct, indirect, and cumulative impacts associated with climate change can be productively and constructively addressed through Zuni Indigenous Knowledge (IK) under the charges of multiple Executive Orders and a White House memorandum on IK.

Donta, Christopher (SWCA Environmental)**[217]** *The Pocumtuc, Core Areas, and Woodland Period Archaeology of the Connecticut River Valley*

One of the central questions facing anthropologists within the Algonquian culture area is to understand how the Connecticut River groups differed from others such as the Nipmuc, Abenaki, and Mohican. What did it mean to be Pocumtuc in the fifteenth to seventeenth centuries? Archaeological information gathered from the late nineteenth through early twenty-first centuries identifies a number of locations across the landscape where sites are concentrated, reflecting centers of social identity. Archaeological projects have now identified over 600 sites within the valley in Massachusetts. A number of core areas of settlement are evident. A focus on Agawam and Northfield documents the types of information that are available from within these core areas and what potential there is for defining the nature of Pocumtuc culture. Deposits of stone tools and tool manufacturing waste in association with ceramic sherds and soil features reflect a large population particularly during the Late Woodland period, within the last millennium. Site data from archaeological projects and collectors provide indications of trade with locations in the Champlain Valley and the Hudson River area. Focusing on the characteristics of data from within core areas may be important in defining the characteristics of Algonquian ethnic differences.

Donta, Jaime (POWER Engineers), and Stuart Eldridge (POWER Engineers)**[217]** *Paleoindian Period Materials from Kennebec County, Maine*

Site 38.99 was initially recorded in 2008 in the course of site locational testing within an existing electrical transmission corridor in Windsor, Kennebec County, Maine. Additional testing in 2009 established the site's affiliation with the Paleoindian period, dated in Maine to approximately 10–12,000 years ago. Site 38.99, which sits on a terrace overlooking a tributary of the Sheepscot River, was relocated in 2020 through shovel testing across the terrace. Numerous lithic artifacts were recovered during the relocation effort including a fluted projectile point, a bifacial side scraper, two unifacial crescentic blades, and debitage, all of Munsungan chert or Jefferson rhyolite. One cultural thermal soil feature was also observed during the 2020 survey. Results of the 2020 excavation will be discussed and articulated with the wider Paleoindian cultural landscape in northern New England and Maritime Canada.

Doubles, Catherine (University of Illinois, Urbana-Champaign), and Brandon Ritchison (University of Illinois, Urbana-Champaign)**[32]** *Situating the Gap: A Legacy Data–Based Bayesian Regional Chronology for the Appalachian Cumberland Gap*

As Bayesian modeling has taken a prominent position in the interpretation of the archaeological record, there is a growing need for the reconsideration of archaeological chronologies. The Cumberland Gap, the major natural passage across the spine of the Appalachian Mountains, has been a major bottleneck in human movement since long before European contact. However, the Gap, and thus the archaeological discourse of the region, sits along the extreme edges of three distinct states (and, importantly, their databases). As a result, few region-scale investigations have centered the role of the Gap in Indigenous interactions and movements. In this paper, we evaluate the state, and potential, of the extant radiocarbon record for situating the Gap and its environs into larger regional histories. This paper also presents new radiocarbon dates from two Mississippian sites in Virginia, Carter Robinson and Ely, and places their establishments and declines within the broader region. This refined chronology and the need for continued efforts it conveys, along with multiple seasons of previous excavation data affords a more nuanced view of relations and movements through the largest pass in the central Appalachian Mountain range.

Dougherty, Ryan [157] see Smeeks, Jessica

Douglass, Kristina [107] see Davis, Dylan

Dowd, Anne (USFS)**[284]** *Toolstone Raw Material Conveyance and Use in Central Oregon*

Archaeologists excavated the Dudley House Pit site (nos. 06070100100, 671NA222) on the Ochoco National Forest and Crooked River National Grassland in 1989 and 1990. At least 40 surface depressions were documented. Researchers identified organic materials yielding a radiocarbon date from a hearth in

Depression #1 (1520±50 BP, Beta-111003). Small Rosegate corner-notched projectile points, principally made of locally available cherts (cryptocrystalline silicates) and obsidians from further away, such as Glass Buttes 75 miles to the south, were found. A spring through fall occupation was surmised. This case study has much to offer in understanding the context of changing technology as shifts occurred between the use of darts and atlatls to bows and arrows, processing cultural foods still important to American Indian Tribes in the region, and acquiring raw materials to produce tools. First Foods contributing to traditional Indigenous knowledge have considerable time depth in the region. Water availability in high desert regions is restricted and can contribute to some sites becoming persistent places on the landscape. This presentation explores these Indigenous lithic technology and use, subsistence, settlement, and toolstone raw material conveyance themes.

Dowd, Marion [65] see Calistri, Hannah

Downey, Zachary, Lawrence Todd (GRSLE Inc.), Daniel Dalmas (University of Utah), and Charles Orngard (Iowa State University)

[298] *Peoples and High-Elevation Wilderness in the American West: Addressing Misconceptions*

Since their inception, federally protected lands have inspired adventure and recreation for hunters, fishermen, backpackers, and nature enthusiasts. However, a widespread and harmful misconception persists: that these lands were historically uninhabited or marginally inhabited by humans and exist solely as pristine natural environments. The Shoshone National Forest in Wyoming, part of the Greater Yellowstone Ecosystem, holds abundant evidence of long-term human occupation, including over 250,000 artifacts recorded by the GRSLE project from surface surveys of less than 1% of the forest. These findings reveal a deep history of Indigenous presence and ecological interaction spanning over 12,000 years, challenging the Wilderness Act of 1964's definition of wilderness as a place "untrammeled by man, where man himself is a visitor who does not remain." Recognizing the enduring relationships between Indigenous peoples and these landscapes is crucial for informed and inclusive management strategies. Detailed archaeological documentation of high-elevation (>2,500 m) settings provides valuable insights into long-term ecological change, demonstrating that human influence is a fundamental part of these ecosystems. By integrating this knowledge into contemporary management practices, we can better honor the cultural heritage of these areas and make informed decisions that respect both natural and human histories.

Doyle, Kristina (National Park Service)

[70] *Historic Exploration at Wind Cave National Park*

This project aims to document the material evidence of historic exploration of Wind Cave in South Dakota, which occurred during the late nineteenth and early twentieth centuries. Since the cave maintains a consistent dry climate and cool temperatures, items such as newspaper clippings, notes from early visitors, and candle remains can be found completely or near-completely intact. This project will record known artifacts as archaeological sites, as well as survey the areas of the cave known to early explorers/tourists for further cultural information.

Doyon, Luc (CNRS UMR5199 PACEA, Bordeaux University), Daniel Da Silva Pereira (CNRS UMR5199 PACEA, Bordeaux University), and Solange Rigaud (CNRS UMR5199 PACEA, Bordeaux University)

[384] *Cross-Referencing Proxies to Refine the Aurignacian Sociocultural Geographies*

The Aurignacian is a pivotal technocomplex in European prehistory marked by the development of novel socioeconomic strategies and symbolic and cultural systems at a continental scale. In recent decades, efforts were made to outline the contour of the cultural provinces occupied by the human groups comprised within the Aurignacian metapopulation and to evaluate the nature and extent of their interactions. Here, we use a continental-scale database on the morphology of Aurignacian osseous projectile points and personal ornaments to explore the cultural geography of Europe circa 35,000 years ago. Significant relationships between personal ornament types and points' proximal morphologies allow the definition of three geographic clusters: southwestern France, southern Europe, and the area encompassing the Meuse watershed and the Swabian Jura. We then focus on connectivity between clusters and on the variability documented for sites

that do not belong to one of them to discuss the factors; e.g., site function, cultural variability, or boundary, that likely contributed to the emergence of original regional and local expressions.

Doyon, Luc [348] see Yin, Ruixue

Dozier, Crystal (Wichita State University)

[314] *Recent Research from the Boxed Springs Site (41UR30), an Early Caddo Mound Site in East Texas*
 Since 2019, Wichita State University has been engaged in archaeological investigations at the Boxed Springs site (41UR30) directly off the Sabine River in east Texas. The site, held on private property, has been of interest since the 1950s as a mounded Native American site with an Early Caddo cemetery and potential domestic features. This talk highlights the recent finding on the eastern half of the site, which includes remote sensing, geoarchaeological excavation, and radiocarbon data. These investigations confirm an Early Caddo occupation with domestic features and also suggest a multicomponent possibility for this site. Boxed Springs has suffered intensive looting, the results of which will also be discussed, as the reported mounds are no longer evident on the landscape.

Drake, Lee [320] see Hamilton, Marian

Drees, Svenya, Erin Martin, Anastasia Iorga, Samuel Disotell, and Katheryn Twiss (Stony Brook University)

[86] *A Paleopathology Report on the Animals in Ur during the Early Second Millennium BCE*
 Mesopotamian cuneiform texts document animals who showed clear signs of disease and even mention animal doctors. These records provide only glimpses into the world of Mesopotamian animals, however, and archaeological evidence of animal pathologies is as of yet extraordinarily sparse. Excavations in 2015–2019 at the southern Iraqi site of Tell al-Muqayyar (the ancient city of Ur) recovered animal remains dating primarily to the first half of the second millennium BCE. This poster reports on the animal paleopathologies identified in the Ur faunal assemblage. Paleopathologies have as yet been identified only in domesticated caprines, cattle, pigs, and equids. Recorded pathologies affect both bones and teeth, and are indicative of joint disease, bone remodeling, and dental hypoplasias. The data presented here advances scholarly understanding of animal health, management, and consumption in the ancient city of Ur.

Dreiling, Crystal [220] see Ottman, Shayleen

Dresser-Kluchman, Elizabeth (University of California, Berkeley)

[239] *Living with Trees in Gallina, New Mexico*
 The most iconic of the US Southwest's landscapes are not its forests. Rather, deserts, scrubland, and floodplains cover a significant physical and intellectual footprint. Especially in the north of the region, however, Pinyon-Juniper woodlands and Ponderosa forests make up a substantial landscape, in which people have gathered wood, fruit, and nuts; hunted; farmed; and lived, seasonally and year-round, over thousands of years. In the past and now, these forests are simultaneously rich with resources that enhance life and food security in an arid environment and at-risk during bouts of drought and related forest fires. This paper considers the ways in which the Gallina people of northern New Mexico, an ancestral group who lived mostly in the forested hills between about 1100 and 1300 CE, made use of and lives with the forest. Though their iconoclasm in architecture, settlement, and craft is established, Gallina food and plant relationships are not yet well contextualized within their environmental and social context. Taking the Gallina hearth (in the house, in the forest) as a site of social forest interaction, I examine the ways in which past firewood, in context, might answer anthropological questions about life in and near Southwestern forests.

Drew, Madison (University of New Mexico)

[63] *Messages of Social Identity and Ideology in Mimbres Classic Period Shell Bracelet Bowls*
 Shell bracelets are a prevalent form of bodily adornment throughout the North American Southwest, appearing as material culture in the Ancestral Pueblo, Hohokam, Casas Grandes, and Sinagua cultures. Though these ornaments typically appear as jewelry objects, they are also present within the ceramic

iconography of the Classic period (1000–1130 CE) Mimbres tradition. Style III Mimbres Black-on-White bowls are known for their communicative symbolism, depicting daily life, ideological narratives, and worldviews. Several Style III bowls have been recovered that feature shell bracelets as independent motifs, separating them from those that display bracelets on the body. The depiction of individual *Glycymeris* shell bracelets on Style III bowls indicates that they held a unique significance within Mimbres communities, as they are the only ornament form to appear as singular objects on ceramic vessels during this time. Through the analysis of these bracelets and their imagery on Style III ceramics, I argue that shell bracelet bowls functioned as iconographic communicators of Mimbres group identity and ideological beliefs.

Drew, Madison [42] see Schleher, Kari

Druc, Isabelle (UW-Madison; Field Museum Chicago), and Yuichi Matsumoto (National Museum of Ethnology)

[66] *Production and Provenance of Ceramics from the Site of Campanayuq Rumi (1100–400 BC), Ayacucho, Peru* Located in the Ayacucho highlands near Huancavelica, the site of Campanayuq Rumi in use during the late Initial period until the Early Horizon (1100–400 BC) displays monumental public architecture and the influence of Chavín de Huántar in its material culture. Its location close to major obsidian sources (e.g., Quispisisa) might have played a role to give the site regional importance. The diversity of pottery styles (Janabarriu or Chavin International, South coast Paracas, North Coast Cupisnique, Local in the south-central highland) suggest that Campanayuq Rumi functioned as a regional node of interregional interactions for the south-central highlands. These characteristics prompted the petrographic study of 108 ceramics to assess their production and provenance. Similar to other Chavín-related sites, the majority of the production seems to have been local, using volcanic pyroclastic material readily available around the site. Fewer ceramics present a mixed composition or the use of intermediate to basic intrusive materials from different resources, local or regional, or even possibly from the coastal batholith where granodiorite and diorite outcrops abound. Several compositional groups have been recognized suggesting a multiplicity of production units or local resources used, sharing the same technological knowledge.

Druc, Isabelle [66] see Nicolas, Richard

Druggan, Patrick

[37] *Chronometric Evidence Does Not Support Cahokia's "Big Bang"*

Cahokia was the largest precontact Indigenous population center north of Mexico, and its development and dissolution are tied in myriad ways to numerous communities across the American Southeast and Midwest. Most current scholarship emphasizes a "Big Bang" that models the emergence of Cahokia as a profound and rapid event at ca. AD 1050 characterized by dramatic demographic expansion, migration, unprecedented monumental construction, and residential reorganization that speaks to the emergence of new social arrangements and a centralization of political authority. This model, however, is underpinned by materially based chronologies. In this paper, I synthesize the existing regional radiocarbon data, individually assess the reliability of dates, and provide revised ceramic chronologies within a contemporary Bayesian framework. I leverage this to produce new demographic estimates and present these data alongside models of monumental construction in order to evaluate the pace of demographic expansion and the timing of social change as materialized in construction events. Results suggest that the demographic expansion of Cahokia was more gradual and later in time than current models propose, and the political history of Cahokia materialized in monumental construction is far more dynamic.

Drysdale, Andrew [336] see Gillaspie, Amy

Du, Weisha [392] see Charlton, Michael

Duarte, Claritsa (California State University, San Bernardino), Matthew Des Lauriers (California State University, San Bernardino), Antonio Porcayo-Michelini (Centro INAH Baja California), and Loren Davis (Oregon State University)

[56] “Any man who pits his intelligence against a fish . . .”: What a Diverse Set of Fishing Tools and Strategies Tells Us about the Earliest Known Fishing Communities of Baja California

The recovery of several dozen single-piece shell fishhooks, fishing weights, indirect evidence for the use of small-gauge nets, and harpoons from Terminal Pleistocene / Early Holocene contexts on Isla Cedros, Baja California, provides the earliest definitive evidence for a fully developed Maritime Adaptation on the coast of the Californias. Other early contexts place people in coastal environments and provide some indication of littoral gathering but up to this point lack evidence for sophisticated, broad-spectrum exploitation for the full scope of available marine resources with technologies specifically and exclusively designed for use in marine environments. It is incumbent on us to pay attention to not only the chronology and geography but also the physical evidence for knowledge systems and technological capabilities possessed by the earliest inhabitants of the Pacific coast of the Americas. By doing so, we will be able to infer a great deal more about the routes taken and choices made by the ancestral native populations that were the last humans to enter and settle a continental landmass.

Dubois-Francoeur, Camille, Carolyn Freiwald (University of Mississippi), and Christina Halperin (Université de Montréal)

[320] *Human Bones in the Maya Tool Box at Ucanal, Petén, Guatemala: Isotope Analyses and Chaîne Opératoire*

The excavations carried out in 2018 and 2019 at Ucanal, a site located in the Maya Lowlands of Guatemala, unearthed the remains of a bone tool workshop dating to the Late Classic period (AD 600–900). It was primarily composed of production waste in which a large proportion of the worked bones were human (up to 40%). Human bones, along with the white-tailed deer and other animals, appear to have been preferentially selected by Ucanal’s crafters to make a variety of tools. Although instances of human bone use is documented across Mesoamerica, fewer examples were found in the Maya region. Our understanding of such a practice is often limited to ornamental objects and ritual contexts. Therefore, the making of utilitarian objects using human bones as raw material is poorly documented. A comparative analysis between the *chaîne opératoire* of the animal and human bones shows no significant differences between treatment of both type of raw materials. In addition, strontium ($^{87}\text{Sr}/^{86}\text{Sr}$) and oxygen ($\delta^{18}\text{O}$) isotopic data, collected from isolated human teeth in the deposit, point to a mostly local origin of the human remains. ***This presentation will include images of human remains.

Dubois-Francoeur, Camille [376] see Freiwald, Carolyn

Dudgeon, John (CAMAS/Idaho State University), Rebecca Hazard (Idaho State University), and Richard Hansen (Idaho State University; FARES Foundation)

[383] *Obsidian Source Analysis and Properties Testing from Artifacts at El Mirador*

pXRF elemental source analysis was conducted on a sample of 990 obsidian artifacts curated in the Foundation for Anthropological Research and Environmental Studies collections in Guatemala. The majority of the artifacts analyzed were from El Mirador, with additional material from sites in the Mirador-Calakmul Basin. Over 70% of the analyzed blades can be sourced to El Chayal, with additional material being sourced to other Guatemalan sources Ixtepeque and San Martín Jilotepeque. Some non-Guatemalan obsidian is sourced to Mexico and consists exclusively of projectile points. The artifact collection suggests a reliance on El Chayal as a primary obsidian source, and materials testing of the Guatemalan obsidians indicate that variability in the performance of the different sources may have played a role in the selection and utilization of El Chayal obsidian. These observations are compared with other sociocultural data on obsidian utilization in the Petén.

Dudgeon, Kate (Autonomous University of Barcelona), Andrés Mejía Ramón (Autonomous University of Barcelona), Lautaro Hilbert (Autonomous University of Barcelona), and Umberto Lombardo (Autonomous University of Barcelona)

[67] *Scaling Up Phytolith Analysis: A Novel Workflow for the Application of Artificial Intelligence in Large Datasets*

Phytoliths are a key proxy for understanding a wide range of research questions in archaeological and

paleoenvironmental research. However, the workflow from phytolith extraction to analysis is time consuming, laborious, and costly, constraining sample numbers and the potential of phytoliths to provide broader spatial and temporal perspectives on past human plant interactions and vegetation histories. The Llanos de Moxos (LdM) of Bolivian Amazonia is a vast (>100,000 km²), understudied area, with an estimated 4,700 precolumbian sites spanning >8,500 years of human occupation. A regional perspective encompassing many millennia is essential to better understand past human-environment relationships and their legacy in modern LdM ecosystems. Within the ERC-DEMODRIVERS project, we have developed a novel workflow for the generation and analysis of large phytolith datasets. This poster presents five key stages of the workflow: (1) optimization of phytolith extraction, (2) digital slide scanning and image capture, (3) generation of 3D point clouds for morphometric analysis, (4) segmentation of objects, and (5) implementation of machine learning and AI to automatically classify phytoliths. Using the LdM as a case study, we demonstrate the unprecedented scale at which this new methodology allows us to explore past human-environment relationships not possible through conventional analysis.

Dudley, Meghan (University of Oklahoma)

[237] A “Lost and Found Culture”: An Ethnographic Archaeology of Queer Heritage in Oklahoma

Willey and Phillips (1958:2) famously once said that “American archaeology is anthropology or it is nothing”—and in the twenty-first century, we got the memo. As archaeologists increasingly embrace a community-engaged archaeology like our cultural anthropological colleagues, many of us are considering ways our collaboratively created work can be used to achieve social justice goals for the historically marginalized groups we work with (or are a part of). I suggest that, in addition to working with communities whose heritage is already buried in the dirt, we can also use our skills to empower those whose heritage is buried in the metaphorical closet: LGBTQ+ communities. By queering our methods with an archaeological artifact analysis, participant observation, and ethnographic object interviews, I show (1) how queer folx in Oklahoma use their materiality to both express their identities and connect to their past, especially in a place where erasure of queer heritage is supported by state politics; and (2) how the development of queer heritage has changed over time. In doing so, this research makes visible that unique heritage and people and preserves the archaeological record of today for generations to come.

Duenas-Garcia, Manuel, and Miriam Campos Martinez (UC Merced)

[64] Reconstructing the Salón de las Columnas at La Quemada: Archaeological Insights into Construction Techniques and Architectural Significance in Northern Mesoamerica

The Salón de las Columnas at La Quemada, Zacatecas, stands as one of the largest roofed structures in Mesoamerica, showcasing impressive architectural complexity and monumental columns. Despite its significance, limited research has explored the detailed construction techniques and ceremonial functions of this space. This study aims to reconstruct the hall’s original form and use by integrating data from archaeological excavations, historical records, and modern digital technologies. This research examines the architectural techniques employed in the building’s construction, materials such as rhyolitic tuff and massive stone columns, along with wooden beams likely sourced from nearby forests. UAV surveys and 3D modeling offer new perspectives on the structure’s configuration and structural stability. Key findings include evidence of human osteological remains, burned flooring, and the hall’s role in ritual practices, suggesting its importance within the sociopolitical and ceremonial landscape of La Quemada. These insights provide a deeper understanding of the hall’s function. This research underscores the Salón’s role as a major ceremonial center in the Malpaso Valley and its broader significance for northern Mesoamerican studies. *****This presentation will include images of human remains.**

Dufresne, Sydney (Salve Regina University), and Emily Henderson (Salve Regina University)

[125] A Deeper Look into Colonial Newport through Orphaned Collections

The Wanton-Lyman-Hazard House is the one of the oldest surviving homes in Newport, Rhode Island. Built for Stephen Mumford in 1697 the property encapsulates the colonial era of New England and provides insight into its changing communities highlighting the lives of marginalized groups. In 1998, an excavation of the backyard of the property was conducted by archaeologists at Salve Regina University; however, the artifacts recovered were never fully analyzed and the documentation for these excavations was partially lost. Our

research aims to discover the place an orphaned archaeological collection has in gathering new data to aid in the understanding of the Wanton-Lyman-Hazard House and all those who inhabited it throughout the years. Overall, this research provides insight into understanding the makeup of the coastal community and gaining new perspectives from groups whose story has not yet been told. These efforts will contribute in creating a larger narrative about the history of Rhode Island, and in particular the lives of enslaved people, and will show how revisiting orphaned collections can contribute to important new research.

Dugas, Lisa [185] see Leight, Megan

Duke, C. Trevor (New South Associates), and Neill Wallis (Florida Museum of Natural History)
[101] *Social Relations at the Nature-Culture Nexus: A Case Study from Mississippian (AD 1050–1550) Tampa Bay, Florida*

The idea of property, as a resource to be owned, controlled, and inherited, is in many ways foundational to anthropology. Heritable property is particularly integral in developing what we often refer to as corporate groups, clans, and social houses. As traditionally conceived, the social group forms through interactions of dichotomous phenomena: nature and culture. Humans identify the resource to be owned and manipulated, and thus map onto it a prefigured template that converts “nature” into the more social “property.” This perspective, however, only considers a one-way flow of relations from subject (e.g., humans) to object (e.g., resource). While much attention has been dedicated to the relational construction of agency, as seen in applications of Actor-Network Theory, for example, the relational turn has yet to extend fully to the anthropology of kinship and identity. We present petrographic, chemical, and technological data of pottery to discuss the recursive roles humans and clay resources played in shaping social relations in Mississippian Tampa Bay, Florida. We mobilize these data to argue that the “natural” qualities of local clays presented new opportunities for interaction, ultimately establishing social differences between generations of potters.

Duke, Daron (Far Western Anthropological Research Group), and L. Suzann Henrikson (Museum of Idaho)

[372] *Folsom’s Western Swing: Idaho’s Contribution to Understanding Folsom Lifeways*

Idaho’s Folsom record has received relatively little attention for lack of bonafide site assemblages. That recently changed with a reexamination of the Layer 18 component at Owl Cave and a newly examined open-air site named It Still Breathes. Like most Folsom points in Idaho, these finds are within the greater Lake Terreton hydrographic of eastern Idaho. As with most Folsom sites outside of Idaho, they exhibit evidence consistent with bison hunting and processing, short-term camping, and highly economized tool production and maintenance. In this paper, we describe Owl Cave, a possible kill site, and It Still Breathes, a camp and Folsom point production site, within the distinctive terrain and diverse social landscape found west of the Rocky Mountains.

Duke, Daron [223] see Freund, Kyle

Duke, Daron [372] see Henrikson, L. Suzann

Duke, Daron [317] see Martin, Erik

Duke, Daron [183] see Young, D Craig

Duke, Guy (University of Texas Rio Grande Valley), Sarah Rowe (University of Texas Rio Grande Valley), and Sara Juengst (UNC Charlotte)

[297] *Evidence for Early Cacao Use at the Valdivia Site of Buen Suceso, Ecuador (3710–3034 cal BC)*

Recent microbotanical and aDNA analyses of materials from Buen Suceso have found the presence of a wild ancestor of *Theobroma cacao* aDNA as well as methylxanthines (theobromine, caffeine, and/or theophylline) in residues on materials recovered from some of the deepest and oldest contexts as yet excavated at the site (3710–3034 cal BC) (see Lanaud et al. 2024:Supplementary information, Tables 1 and 2; Sonia Zarillo, personal communication). While the date range for this evidence is wide, at the earliest point it would be one of the oldest examples of cacao related evidence found so far, both in Ecuador and elsewhere. This poster places this information in material and social context of the Early Valdivia period at Buen Suceso, as well as within the Valdivia tradition and Formative period in Ecuador and the Americas more generally. More dates and residues are necessary to solidify Buen Suceso’s place in the sequence of use and development of cacao,

but this preliminary evidence indicates a strong possibility for Buen Suceso and coastal Ecuador being an early location for cacao use.

Duncan, Neil [65] see Batres, Kimberly

Duncan, Neil [58] see Kiernicki, Lydia

Duncan, Tiana [230] see Matsuda, Marie

Dundas, William

[361] *A Morphological Analysis of the Projectile Point Assemblage from AZ U:9:319(ASM), Mesa, Arizona*

This presentation analyses projectile points recovered during the 2020–2023 field seasons at site AZ U:9:319(ASM) during the Mesa Community College field methods class. The goals of this study were to analyze the typologies, material makeup, and chronology of the points recovered to gain insights into their place within the Hohokam material culture. The methodology involved taking measurements of the length, neck width, greatest thickness, base width, and blade width of each point using calipers with a digital interface. The material types were identified by referencing *Simon and Schuster's Guide to Rocks and Minerals*. Definitions found in *Projectile Point Typology Gila River Indian Community, Arizona* were used to assist the assignment of typologies to the projectile points based on their measurements and physical characteristics. In total, 53 projectile points were recovered from the site. This analysis determined that the majority, 41, are from the Sacaton phase (950–1150 CE) of the Hohokam material culture. This aligns with the results of the ceramic iconographic analysis done for this site, which also indicates a possible Sacaton phase habitation period.

Dunham, Samantha

[218] *The Auburn Chinese Joss House: An Analysis of an Artifact Collection through Descendant Community Collaboration*

The Auburn Joss House Chinese History Museum is one of the few remaining structures from the mid-nineteenth- to twentieth-century Chinatown in Auburn, California—a prominent gold rush town. A man named Charles Yue opened it as the Ling Ying Association building in the 1920s to be used as a temple, boardinghouse, Chinese language and culture school, and community center until it closed in 1968 when it became boarded up and subsequently fell into disrepair. In the 1990s, Richard Yue (Charles Yue's grandson) restored it as a museum which is still managed by the Yue Family with items related to the Auburn Chinatown, Ling Ying Association, and the museum stored in the museum basement. This project collaborated with the Auburn Chinese descendant community to conduct historical research, an in-depth inventory of items in the basement, and collect oral history interviews from the Yue Family. This paper examines the nature of the items stored in the museum basement and the lives of people who lived in the Auburn Chinatown and interacted with the Ling Ying Association, as well as reflects on how in-depth collaboration with a descendant community can influence historical and archaeological research.

Dunham, Sean [37] see Kooiman, Susan

Dunleavy, Scott [59] see Moffett, Abigail

Dunn, Amethyst [314] see Powis, Terry

Dunn, Auriana (University of Utah), Kasey Cole (University of Utah), Austin Green (University of Utah), Tyler Faith (University of Utah), and Randall Irmis (University of Utah)

[196] *Mapping Zoological Baselines through Time in the Bear River Range: When Archaeology Meets Wildlife Science*

Zoological baselines are key datasets when evaluating climate issues and wildlife conservation projects. This project looks at three types of ecological surveys in the Bear River Basin: (1) a zooarchaeological survey of two cave assemblages, (2) modern camera trap data, and (3) modern museum live trapping surveys. The first survey, using cave assemblages of animal skeleton remains, included remains from Boomerang Cave and

Thundershower Cave, in the Bear River Range of Cache Country in northern Utah. Specimens from 1938 were analyzed between the two caves. These deposits showed a distribution of species class size expected from known species diversities and most of the mammalian diversity expected in the area. The other two surveys, camera trapping and live trapping, both bias certain size classes over others. When analyzing the datasets together using machine-learning techniques, a zoological baseline can be created for the paleontological and modern Bear River Range. This information then can be analyzed in relation to climate issues and wildlife conservation, to see if and how the baseline has changed over time.

Dunn, Auriana [196] see Cole, Kasey

Dunning, Nicholas (University of Cincinnati), Timothy Beach (University of Texas, Austin), Sheryl Luzzadder-Beach (University of Texas, Austin), and Christopher Carr (University of Cincinnati)

[52] *New Perspectives on the Bajos of the Elevated Interior Region of the Maya Lowlands: Pfb and Beyond*
In the early 1990s, Fred Valdez, Vernon Scarborough, Nicholas Dunning, and others initiated a project examining ancient Maya land use in the Programme for Belize including several small bajos. These karst depressions are common physiographic features within the Elevated Interior Region (EIR) of the Maya Lowlands and are often fringed by ancient Maya settlement. Views on the attraction of bajos for the Maya have ranged from their function as agricultural breadbaskets to their general unsuitability for cultivation. A more nuanced understanding of bajos within the EIR is emerging with the aid of lidar surveys and intensive field and lab investigations of soils, water, and multiple paleoecology proxy lines of evidence. Bajos have proven to be environmentally varied, and ancient Maya adaptations to these features were similarly and fascinatingly varied.

Dunning, Nicholas [52] see Luzzadder-Beach, Sheryl

Dunning, Nicholas [239] see Vazquez-Alonso, Mariana

Dunseth, Zachary [103] see Beach, Isabel

Dupont, Catherine (CReAAH-CNRS)

[345] *Stone Age Archaeological Shell Middens in the Atlantic France: An Overview of Prehistoric Marine Pluriactivities*
The marine activities of the last hunter-gatherers on the French Atlantic coast have long been neglected by researchers. This is due to the abundance of lithic industries and the value placed on hunting. These industries also make it possible to establish the relative chronology of settlements. In recent years, the excavation and meticulous sorting of shell middens have renewed our knowledge of the way of life of these prehistoric coastal populations. Shell middens sites are places of death but also places of life. They contain burials inside shell middens. People also cooked and lived on these shell middens. These archaeological sites represent concentrations of waste and therefore evidence of various activities, many of which are linked to the sea and its foreshore. While these activities do not require elaborate tools, they do require a great deal of knowledge of the marine environments where, for example, marine animals can hide (under seaweed, in sand or mud, in rocks, etc.). Observing modern island populations allows us to describe their level of knowledge of their maritime territory. It can provide clues to understand past choices in terms of the diversity and abundance of certain marine resources.

Dupuy, Paula (Nazarbayev University), Zhuldyz Tashmanbetova (Washington University, St. Louis), Galymzhan Kiyasbek (Margulan Institute of Archaeology), Victor Mertz (Toraighyrov University, Pavlodar), and Aidyn Zhuniskhanov (Nazarbayev University)

[332] *Stratified Stone Age Sites Are Few and Hard to Find: A Welcome Exception at the Koken Site in Kazakhstan*
Late period hunter-gatherers of the Eurasian Steppe remain among the most understudied and least deciphered societies in the archaeology of Kazakhstan. A shortage of stratified or well-preserved late Paleolithic and early Holocene campsites places a scholarly dependence on lithic assemblages that are often not pinned to radiometric dates. Contrary to this norm, our excavations at the site of Koken in the semiarid steppe zone of eastern Kazakhstan have uncovered stratified Stone Age deposits of human remains,

zoarchaeological data, and material assemblages underlying a Bronze Age settlement. The site opens inroads into examining human adaptations, social interactions, ritual behaviors, and food systems in the hyper-continental marginal steppe environment. In this paper, we consider the Koken site layout and contents in deep-time perspective as well as consider its potential utilization throughout periods of the Stone Age to clarify social, cultural, and technological connections among hunter-gatherer populations of the Eurasian steppe. *****This presentation will include images of human remains.**

Durand Caceres, Karen [182] see Kennedy, Sarah

Durga, Ricky (University of Oregon), Ella Ashford (Willamette University), Christina Giovas (Simon Fraser University), and Scott Fitzpatrick (University of Oregon)

[240] *The First Paleoethnobotanical Evidence from the Grenadines, Southern Lesser Antilles, Provides Insight into Smaller Island Adaptations*

Located approximately 190 km north of South America and measuring 32 km², Carriacou is the largest of the Grenadine islands and a promising case for understanding human eco-dynamics in the Lesser Antilles. The island exhibits well-stratified midden deposits with a variety of faunal remains suggesting the primacy of fishing/marine foraging subsistence supplemented by introduced South American animals. While the biogeographic reorganization of these land mammals across the southern Lesser Antilles is relatively well understood, there is a paucity of research on the timing and intensity of food production systems. Here, we present findings from microbotanical analysis of soils recovered from Sabazan, one of the two largest coastal village sites on Carriacou. Radiocarbon dates suggest continuous occupation and possible expansion of the site from ca. AD 400–1400. We assess how vegetal regimes have changed to reflect anthropogenic landscapes, which help to better understand how socioenvironmental feedback responses shaped life in littoral zones. This work builds on the use of islands as “model ecosystems” for understanding human-driven, terrestrial-marine entanglements and contributes to a growing corpus of data that illuminate the specific ways humans were modifying their landscapes, changing local ecologies, and interfacing between terrestrial and marine resource bases.

Dusseldorp, Gerrit (Leiden University), Mick Van Harderwijk (Leiden University), Morgan Roussel (Leiden University; Paleocraft and Skills Company), and Alessandro Aleo (Delft University of Technology)

[229] *Experimental Shooting Experiments with Backed Pieces: Functional Differences in Hafting Configurations and Implications for the Use of the Tip Cross-Sectional Area*

A variety of technocomplexes across the world has produced semi-circular backed pieces, including the South African Howiesons Poort technocomplex (65–60 ka). These pieces have been interpreted to have functioned as arrowheads based on use-trace evidence, yet their exact hafting configuration is not yet clear. We produced experimental arrows with replicated segments of the average dimensions as those from the Howiesons Poort as tips. We hafted the segments in two different configurations onto the arrows: transversally and diagonally at a ~45° angle. We shot the arrows into blocks of gelatin to determine if differently hafted arrows have differing penetration capabilities and produce differently sized wounds. We show that transversal arrows consistently outperform diagonally hafted arrows. We further calculate the tip cross-sectional area, a measure a standardized measure for lithic points assumed to correlate with penetrative capabilities and used to hypothesize the weapon type that points were produced for. We show that hafting configuration appears a better predictor of penetration depth than TCSA alone. This underlines the fact that experimental results help interpret archaeological hafting configurations and that hypotheses of hafting configuration should be included in interpretations on weapon types used.

Dussol, Lydie (University Côte D’Azur), Jérémy Höhne (Université Côte d’Azur), Julien Sion, and Chloé Andrieu (CNRS)

[239] *Use of Firewood during the Classic Period in Mayan Rituals of the Raxruha Viejo Microregion’s Caves, Guatemala*

At the transition between the Maya highlands and lowlands, the city of Raxruha, neighboring and contemporary to that of Cancuén, was occupied in the Late Classic before being suddenly abandoned around

800 CE. Even today, the region's numerous caves, closely associated with fertility, are still places of worship for today's Q'eqchi Maya groups, who practice numerous cults to the Tzuultaq'a or mountain spirits. All these long-term ritual practices involved numerous cremations, as attested by the abundance of charcoal in these contexts. As part of the Cancuén-Raxruha regional archaeological project, we analyze this material and compare it with charcoal from domestic contexts in the city. This allows us to explore the relationship between the ancient Maya and the tropical forest, environmental changes and the evolution of forest resources use in a context of brutal social and political shift at the dawn of the so-called Maya collapse.

Dussubieux, Laure [69] see Watson, Sara

Duwe, Samuel, Kurt Anschuetz, Kenny Wintch, and Pueblo of Acoma Cultural Partners

[362] *Forever Home, Foundations of an Identity: Where Acoma's Ancestors Left Their First Footprints*

Southeastern Utah encompasses an archaeological record of thousands of years of Pueblo Indian, Ute, and Navajo history. A compelling site assemblage dates to the Early Pueblo period (650–950 CE). This time was when and where small Ancestral Pueblo family groups began to settle into centralized locations and built the first villages. Modern-day Pueblos, including the Pueblo of Acoma, consider southeastern Utah to be a vital part of their respective ancestral homelands. This region is where the First Ancestors emerged onto the natural world. They lived here for countless generations before embarking on migrations to reach their permanent homes after learning the rudimentary lessons for living in a Pueblo cultural landscape of their construction. For Acoma, present and future generations must return to southeastern Utah to protect and defend the Pueblo's cultural inheritance. This paper tells two interrelated stories: (1) Acoma's First Ancestors' emergence into this world and their first steps on their journey of becoming and (2) how archaeological and cultural landscape conservation in "The Lands Between" (named for its position between Bears Ears and Canyons of the Ancients National Monuments) contributes to Acoma's goals of building a healthy and sustainable future for coming generations.

Dwan, Meghan, and Kara Larson (University of Michigan)

[86] *Cutting into Butchering Practices: Investigating Butchery Skill at an Early Bronze Age IIIA Urban Community along the Northern Negev*

The rise of urban living, particularly in the Southern Levant, often reflects a shift toward market economies and removed relationships with food—the transition from direct to indirect relationships with herding domesticated livestock. However, questions remain regarding if this transition from "direct" to "indirect" translated to all aspects of food production and processing behaviors. Such food processing behaviors that have received little attention in the Early Bronze Age III (2900–2500 BCE) are butchery specialization. Did the shift to urban living coincide with the specialization of animal processing, not just herd management? To answer this question, this research explored if butchery specialization can be detected from the cuts left behind on faunal remains. The Early Bronze Age III site of Tell el-Hesi serves as a unique case study of an EB III site on the cusp of urban transition. Using a combined approach of morphological analyses under Dinolite magnification and SEM analysis, butchery skill level is evaluated and compared across the entire EB III faunal assemblage from Tell el-Hesi. Results show a high level of variation in butchery skill across the site, bringing to question how specialized processing activities were during the emergence of urban living.

Dye, David (University of Memphis)

[113] *Mississippian Chiefly Claims of Power*

Early eighteenth-century French accounts concerning the Choctaw and Natchez provide critical insights into the multiple strategies Mississippian chiefly elites employed to gain and legitimize power. I argue that ruling elites devised multiple means to garner, enhance, and legitimize holds over various sources of power. Eyewitness accounts document chiefs controlling the use of guns and demanding payment for such loans. Claims to genealogical connections and supernatural powers were especially crucial for political office. Success in warfare, as well as legerdemain performances, provided further proof of supernatural powers. These interconnected sources of power enabled leaders to secure political, ritual, and social offices, and to establish aristocratic privileges and status.

Dylla, Emily**[367]** *A Balancing Act: Current Alamo Archaeology in a Regulatory Perspective*

Since its creation by the Texas legislature in 1977, the Texas Historical Commission both houses the State Historic Preservation Officer for federal antiquities compliance and administers the Antiquities Code of Texas, which offers state-level protections to significant archaeological sites. The Alamo occupies a unique location on Texas's compliance landscape and has a complex regulatory history shaped by dynamic politics and public opinion and research priorities in addition to legal mandates. In this paper, I discuss this history and contextualize the ongoing work at the Alamo presented in this session within its unusual regulatory framework.

Earl, Dale**[87]** *Tracing Diet Diversity and Ecological Shifts in the Maya Mountains: Insights from Zooarchaeology*

Recent research into diet change in the Maya Mountains of Belize has pointed to environmental change as a critical factor. These shifts in diet were argued to have occurred as a lead up to the shift of populations in the Maya Mountains from archaeological patterns that characterize the Archaic in the region from those of the Preclassic Maya communities. These shifts have been interpreted as evidence for an increased reliance on maize agriculture in the years leading up to the transition into the Preclassic. But what is less clear is the role of climate change in diet change during the late Pleistocene through the middle Holocene, a period which covers the Paleoindian and Archaic periods in the region. Using zooarchaeological evidence from the site of Maya Hak Cab Pek this study was able to determine the potential role that environmental change had on faunal procurement strategies by foragers during the Middle to Late Holocene in the Maya Mountains of Belize.

Earle, Julia (Central Michigan University)**[386]** *Identity and Territory in the Sacred Valley during Inka State Formation*

The Late Intermediate period (LIP; ca. 1000–1400 CE) was a time of accelerated sociopolitical change. In the Cusco region, culturally diverse populations engaged in dynamic interaction networks and were implicated in macro-level processes of political centralization. Over recent decades, scholars have reframed the dominant top-down model of Inka state formation and territorial consolidation to account for the agency of local and non-elite actors. This paper builds on these advances by evaluating community aggregation, geopolitics, and strategies of survivance among autochthonous populations in the Sacred Valley. How did groups embrace or reject emergent practices of aggrandizement? And how did local geopolitics condition or hinder the Inkas' eventual efforts at establishing hegemony in the imperial heartland? To address these questions, this paper compares the development of 11 late precontact villages between the towns of Yanahuara and Pisac in the Sacred Valley. Drawing on archaeological, historical, and ethnographic data, I map out regional patterns in production and subsistence practices to discuss social boundaries, land claims, and collective identity. Specifically, variation in construction technology, placemaking, and the distribution of material culture provide a starting point for analyzing relationships between villages. Contemporary oral traditions offer complementary insight into the maintenance and contestation of territorial boundaries.

Earle, Timothy**[106]** *Ken Hirth and Premodern Economies*

With a lifetime's work on prehistoric economies, Ken Hirth published a synthetic book *The Organization of Ancient Economies* (CUP, 2020). Impressed by the creativity and comprehensiveness of his synthesis, I proposed a collaboration with him on a working group with knowledge of particular cases across time and the world. With funding from Wenner-Gren, and after two COVID delays, our group of 11 met for a week at the Amerind Foundation to compare "our" economies according to eight themes. My presentation now describes the working group, Ken's guiding role, and the results being published as *Premodern Economies: A Global Perspective*.

Earley, Caitlin**[172]** *Stone Bodies, Stone Worlds: Emplacement and Sculpture at Late Classic Toniná*

Images of Classic Maya kings have long been understood as potentially animate world centers that structured movement and identity for humans in ancient Maya centers. Sculptures depicting nonroyal individuals, however, offered different modes of interaction for humans and other-than-humans who moved in and

through such centers. In this paper, I consider Late Classic captive imagery from Toniná, Chiapas, through the lens of emplacement, including the well-known ballcourt sculptures, as well as sculptures of captured individuals placed high on the acropolis. Drawing on new hieroglyphic decipherments and documentation, I explore the ways in which carved stone sculptures in the ceremonial center of Toniná acted as community members in a dynamic ecology of things, participating in acts of sacrifice, doubling, and identity construction. This research suggests that captive imagery is a crucial complement to royal portraits in the investigation of transformative interrelationships between humans, sculptures, and landscapes both enduring and ephemeral.

Earnshaw, Jacob [240] see Letham, Bryn

Eastman, Jane [123] see Ernenwein, Eileen

Ebert, Claire [109] see Awe, Jaime

Ebert, Claire [296] see Davis, J. Britt

Ebert, Claire [325] see Meyer, Brett

Ebert, Claire [224] see Paiz, Casandra

Ebert, Claire [223] see Suarez, Nicholas

Echenique, Ester (Universidad de Tarapacá), Frances Hayashida (University of New Mexico), Suzanne Eckert (University of Arizona), Joselline Quijada (Pontificia Universidad Católica de Chile), and Paloma Arellano (Universidad de Tarapacá)

[171] *Interregional Interaction during Inka Rule: The Production and Circulation of Inka-Pacajes Pottery in Northern Chile*

The provincial ceramic style of Inka-Pacajes, which originated in the Bolivian altiplano, is well-known for its bowls and plates decorated with small black llamas on an orange to red background. It is widely found across the southern Inka Empire (Collasuyu) in contexts that suggest it was circulated by the state. It is thus a possible example of the production and distribution by the Inka of a style originally produced by a conquered polity. Examination of the patterns of production and circulation of Inka-Pacajes pottery can provide insights into how this style may have been used, appropriated, or manipulated by state and local entities during Inka rule. This will be addressed through the *chaîne opératoire* approach that enables the determination of stylistic and technological variability and possible provenance. From this methodological framework and by combining stylistic, technological, and compositional analyses (petrography and neutron activation analysis) of Inka-Pacajes pottery from the Arica Region in northern Chile, we will contribute to the discussion of the role of pottery, particularly pottery in the styles of conquered

Echenique, Ester [39] see Correa Lau, Jacqueline

Echo-Hawk, Roger

[339] *Then the Semi-Beasts Got Linnaeused and Blumenbached; Then I Slouched into the SAA*

The bestowing of the SAA 2025 Fryxell Award on David Meltzer honors an intellectually panoramic legacy of scholarship. Dr Meltzer is a key advocate for adhering to both rigorous analytical standards and cordial critical dialogue—his work has enlightened my own intellectual journeys since the early 1990s. In 2009 I circulated a critique of his treatment of race in his ambitious *First Peoples in a New World*, and this launched years of dialogue between us on the status of racial identity systems. For archaeology to contemplate an expanded dialogue on race, it would be necessary to strategically adopt new protocols and to make room for new kinds of challenging discourse. In short, the profession would need intellectually panoramic leadership of the kind we honor in the career of David Meltzer.

Eckels, Monica (University of Colorado, Denver), Jamie Hodgkins (University of Colorado, Denver), Amy Gillaspie (Archaeology Southwest), and SJ Casillas (University of Colorado, Denver)

[300] *Echoes of Paleoindians: Analyzing Faunal Remains from the Jones-Miller site in Wray, Colorado*

The Jones Miller site is a *Bison antiquus* kill site in Northeast Colorado near the town of Wray. The site was

discovered by Robert Jones Jr. in 1972 and excavated by Dennis Stanford at the Smithsonian Museum. The site is a thick, very large (approximately 36 × 40 m) bone bed located in a former draw off the Arikaree River basin. The site dates to 10,800 years before present toward the end of the Pleistocene and contains at least two kill events leaving behind the remains of at least 300 bison. This study is a detailed zooarchaeological analysis of one square (D106). This study seeks to understand the details of site preservation, taphonomic processes, human caused butchery patterns, and also the role that nonhumans played in altering the skeletons. For this study 535 skeletal elements have been examined thus far using standard zooarchaeological methods. All remains belong to *Bison antiquus*. Radioulnae are the dominant skeletal element of the long bones, the MNE = 14, the MNI = 12, 35% ($n = 7$) have cut marks, 0% ($n = 0$) have carnivore tooth marks. The analysis shows that humans were preferentially butchering the forelimb in this square.

Eckels, Monica [88] see Casillas, S]

Eckerle, William [369] see Cannon, Kenneth

Eckert, Suzanne [171] see Echenique, Ester

Eduarda Donegá, Maria [191] see Borges-Eckert, Samantha

Edwards, Alysha (University of Montana)

[129] *The Social/Cultural Implications for the Spatial and Temporal Distribution of Nonlocal Lithic Raw Materials within Housepit 54, Lillooet, BC*

Research at the Bridge River site has resulted in an extensive database of the spatial and temporal distribution of lithic artifacts within Housepit 54. Lithics from this Housepit have contributed to understanding the multigenerational use of specific raw materials sourced from outside the immediate vicinity of the village. This analysis will focus on the distribution of two nonlocal raw materials that are frequently observed in the Housepit 54 assemblage: (heat treated) pisolite and Hat Creek Jasper. Sourced from areas neighboring Xwisten/EeRI-4, an analysis of the distribution of these materials throughout the 17 anthropogenic floors can have implications for understanding long-term relationships maintained between the St'át'imc communities surrounding the Mid-Fraser region. By focusing on the frequency and distribution of two nonlocal raw materials within the Housepit 54 assemblage, this study will aim to identify the use of these materials and the potential social/cultural implications within the wider Mid-Fraser region.

Edwards, Briece [64] see Johnson, Jeremy

Edwards, Briece [206] see Lewis, Michael

Edwards, Nicolette, Karen Lupo (Southern Methodist University), Dave Schmitt, and Michael Richards (Simon Fraser University)

[288] *What's on the Menu? A Consideration of Central African Forest Forager Seasonal Dietary Patterns through Stable Isotopic Analysis and Mixing Models*

Wild game hunting and humans' consumption of meat represents some of the oldest forms of human-animal interactions (HAI). Stable isotopic analysis is commonly used to assess dietary patterns among prehistoric hunter-gatherers with nitrogen values considered a proxy for meat consumption. However, although the use of this method is prolific in archaeological contexts, its application in contemporary settings is minimal. An approach that incorporates this method to more accurately assess what individuals actually consume among a contemporary group is warranted. Results from an ethnoarchaeological project among Congo Basin Bofi and Aka forest foragers informs on the seasonal dietary patterns of women, men, and children via stable isotopic analysis of carbon, nitrogen, and sulfur from hair. In addition, the application of Stable Isotope Mixing Models (SIMMs) gives insight into the proportion of different foods in their diet, thus elucidates the importance of various sources of animal protein as well as the potential impact of women versus men's provisioning efforts on the dietary patterns of the group. Ultimately, this research provides critical insight on the intersection between wild game, forest forager consumption of meat, and individual's efforts to feed the group to better understand the dietary patterns of hunter-gatherers past and present.

Edwards, R. Lawrence [121] see Chim, Eliane

Eeckhout, Peter (ULB), and Céline Erauw (Vanderbilt University)

[331] *Commensality and Mobility at Pachacamac during the Late Prehispanic Periods*

At Pachacamac, the theme of mobility is closely associated with pilgrimage, as well as the reciprocal banquets that occurred at the site during the Late Intermediate period and Late Horizon, across various contexts. In this paper, we present material evidence of these activities from excavations carried out in different parts of the site. Through ongoing zooarchaeological and isotopic analyses, we propose avenues and models for their interpretation. Preliminary results suggest that significant changes can be identified following the cooptation of the site by the Incas in the fifteenth century. These changes concern the origins of the participants; i.e., the pilgrims, who may have come from more distant regions in the Late Horizon than previously. Additionally, we observe possible changes in scale, with commensal activities under the Incas taking on a greater dimension than before.

Eeckhout, Peter [182] see Erauw, Céline

Eerkens, Jelmer [207] see Eubanks, Jill

Eerkens, Jelmer [117] see Flores-Blanco, Luis

Eerkens, Jelmer [320] see Goring, Daniel

Eerkens, Jelmer [99] see Wu, Nikki

Efird, Mary (University of Maryland)

[56] *Foreign Influence and the Standardization of Icelandic Stockfish*

This presentation examines the variation in Atlantic cod live-length from multiple Icelandic archaeological sites, with a focus on identifying the technological and cultural factors influencing these differences. The fifteenth-century site of Gufuskalar stands out as an outlier, displaying significantly larger cod on average, particularly within the stockfish size range. Evidence suggests that this site was operated by or heavily influenced by foreign fishermen, who utilized advanced fishing technology such as decked ships, allowing for the capture and processing of larger fish. This site's emphasis on stockfish production points to a specialized focus on trade with medieval Europe. By analyzing these size discrepancies, this research highlights the role of foreign fishing practices and technology in shaping the Icelandic fishing industry during this period.

Egan, Rachel (Tetra Tech)

[327] *"It Belongs in a Museum!": Exploring Ethics, Heritage, and Authenticity through the Story of a Maya Vessel*

What do we, as archaeologists, do when a potential antiquity is discovered for sale? What are our ethical and moral obligations? How is its authenticity determined? Building on the 2024 news story "She thrifted this vase for \$4. It turned out to be an ancient Mayan artifact" published by Emma Bowman, NPR, this paper covers my own journey of finding a potential antiquity in a thrift store and the steps that followed. Embedded in this story are methods of identifying provenance of unprovenanced artifacts, who decides heritage and value, and the ethics and importance of repatriation. I argue that archaeologists have a responsibility to not only try to return such items to their place of origin but also to seek out the views and opinions of the descendants of those cultures throughout the process. I also argue that we have an obligation to make these stories public to give a greater stage to the destruction of the past through the illicit artifact trade. In doing so, I aim to outline steps we can all take to help stop this ongoing crisis.

Egan, Rachel [298] see Lemminger, Jennifer

Egeland, Charles P. [156] see Schwendler, Rebecca

Eichner, Katrina [275] see Warner, Mark

Eighmey, James [284] see Spenard, Jon

Eklund, Emily (University of Pittsburgh), Jargalan Burentogtokh, and William Gardner (Yale University)

[123] *Exploring Monumental Landscapes: Geophysical and Geochemical Insights into Bronze Age Mobile Pastoralist Monuments in Mongolia*

Monument construction has long been associated with the rise of early civilizations and states. Recent trends in anthropological archaeology have also identified the crucial role of monuments in processes of social integration among small, mobile populations. This poster will present results from a detailed geophysical and geochemical study of these important social dynamics, providing a critical new understanding of how monument construction and use reflected changing patterns of social organization, territoriality, and social integration of dispersed pastoralist communities in the Mongolian Late Bronze Age (1400–750 BCE). For the 2024 field season, two *khirigsuur* monumental complexes were selected within the American-Mongolian Tarvagatai Valley Project area to act as comparative sites for the implementation of an innovative research design employing complimentary geophysical and geochemical methodologies, including (1) near surface geophysical surveys (fluxgate gradiometry, magnetic susceptibility, and electromagnetic conductivity) and (2) soil geochemistry (multi-element analysis with portable XRF). The application of these remote sensing techniques, in coordination with more traditional archaeology surveying methods, provides an effective approach for examining monument construction and use during a dynamic period of social, economic, and political change in the late prehistoric period of the eastern Eurasian steppes.

Eklund, Emily [125] see Goyette, Kyr

El Hajraoui, Mohamed Abdeljalil [281] see Worthey, Kayla

Eldridge, Stuart [217] see Donta, Jaime

Elera, Carlos [45] see Jankowski, Maegan

Elezi, Gazmend (UCLA)

[308] *A Novel LC-MS Technique for Detecting Wine Molecules in Archaeological Pottery*

Organic mass spectrometric applications constitute a fundamental set of tools for detecting wine residues in archaeological materials and addressing anthropological questions related to ancient trade, interregional interaction, and economy. Despite the development of high-throughput techniques and cutting-edge instrumentation, the results of chemical analysis on ancient wine residues are often ambiguous and contextually dependent. This paper will present the result of the research conducted at the UCLA Pasarow Mass Spectrometry Laboratory for developing an unequivocal analytical method for identifying wine residues preserved on archaeological ceramics. A novel assay using liquid chromatography-tandem mass spectrometry (LC-MS/MS) is being developed and optimized utilizing pyranoanthocyanins as target molecules for the mass spectrometric identification of ancient wine residues.

Ellenberger, Maura

[226] *Evaluating Changing Governmental/State Support for US-Based Archaeological Research: Cases from Guatemala*

The establishment of archaeological projects in the twentieth and twenty-first centuries were often shaped, consciously or unconsciously, by the political motivations of involved parties. I evaluate this premise through the examination of archival records and interviews pertaining to two archaeological projects, each established in Guatemala but in distinct periods and political contexts. My goal is to examine how governmental motivations for funding and supporting archaeological projects have changed over time. I consider the history of excavations of the Tikal Project (1956–1970) and the Proyecto Arqueológico Waka' (2003–present). Understanding the motivations and changes in governmental/state support for archaeological projects allows the archaeological community to better evaluate the ethics and unintentional/intentional biases of past and current research while supporting a cross-disciplinary method of examining archaeological practices.

Elliott, Jeremy [275] see Bussiere, Lauren

Elliott, Jeremy [112] see Schroeder, Eric

Elliott, Michelle (Université Paris 1, Panthéon-Sorbonne)

[325] *Roots of the Past: Exploring Paleoethnobotany in the Bajío region of Mesoamerica*

Close to a century of archaeological research in the Bajío region of Mexico has revealed a long-term record of human occupation, ranging from mobile hunter-gatherers to early farming villages, state-level polities, and later colonial settlements where Indigenous groups interacted with European populations. These developments were shaped in part by the region's dynamic environment, influenced by both human practices and climatic phenomena. Archaeological models analyzing cultural change in the Bajío often incorporate climatic and environmental factors (whether implicitly or explicitly) as essential components for understanding these trends. However, reconciling archaeological and paleoclimatic data can be challenging due to differences in research goals, methodologies, and interdisciplinary communication. In this paper, I discuss the importance of paleoethnobotanical research as a bridge between the social and natural/earth sciences. Drawing on examples from recent environmental research conducted by myself and students affiliated with various CNRS-sponsored excavation projects in the Bajío, I highlight what these approaches have taught us. Additionally, I explore novel types of paleoethnobotanical studies that can potentially deepen our understanding of human-landscape interactions in this culturally significant region.

Elliott, Rick (University of Illinois, Chicago)

[379] *Archives and Archaeology: Toward a More Complete History of Global Conflicts*

This paper addresses a fundamental challenge in accounting for global conflicts in the historical record. The problem, as described here, is the “archives-versus-archaeology” gap: the space that exists between documentary evidence related to global conflicts held in archives and archaeological evidence of those conflicts on the ground. The “global” nature of these conflicts is reflected in the flow of primary source materials into multiple archives in multiple countries. Archives dedicated to these conflicts are often established in each combatant nation, sometimes far from the site of conflict. The documents preserved in these archives shape our historical understanding of events. Yet the sites of conflict, themselves, tell their own stories, anchored in the physical space and lived experience of where conflicts occur. These two bodies of evidence often provide different interpretations of events, sometimes complementary and sometimes conflicting. Nevertheless, both are required for a full historical understanding. This paper outlines the archives-versus-archaeology gap and discusses methods for bridging it, drawn from research and fieldwork related to the recovery of remains of soldiers killed in the Philippines in World War II. In doing so, it adds to a growing literature on archival theory and its integration into the field of archaeology.

Elliott, Rick [379] see Reid, David

Ellis, Grace [384] see Haws, Jonathan

Elston, Robert [126] see Zeanah, David

Emerson, Thomas [370] see Green, William

Emery, Kitty [288] see Boileau, Arianne

Emery, Kitty [376] see Sewnath, Neeka

Eminli, Jeyhun [321] see Lau, Hannah

Emslie, Steven (University of North Carolina, Wilmington)

[280] *The “Chronological Dilemma” of Late Pleistocene Fossil Remains and Human Artifacts in Cave Deposits in the Western United States: False and Real Associations Explained*

Many cave deposits in the western United States are rich in late Pleistocene vertebrate fossils and plant remains preserved in sediments and packrat middens. These caves are usually deep, dry, and located in arid environments where preservation and mummification of organic remains is highest. Many of these same caves

were often used by prehistoric peoples for hunting camps, shelters, or ceremonial purposes as evinced by cultural features, artifact assemblages, and/or pictographs or petroglyphs on cave walls. Radiocarbon dating can reveal chronological differences between human artifacts and Pleistocene fossils, creating a dilemma for explaining their apparent association. Here I describe several cases of caves with apparent associations of human artifacts with Pleistocene fossils in Texas, Arizona, and Nevada that resulted from either slow sedimentation rates in caves during the Holocene, leaving Pleistocene remains on the surface where human artifacts later accumulated, or mixing of sediments by burrowing rodents. Deliberate associations also are possible and may relate to recognition of “ancestral animals” in bones and fecal remains of species no longer present in the region when human occupation began. Taphonomic consideration of these cave deposits can help resolve this “chronological dilemma” to determine whether these associations are real or false.

Engelbert, Lynne (Institute for Canine Forensics), and Adela Morris

[243] *What Using Historic Human Remains Detection Dogs Brings to the Indigenous Community*

For many Indigenous communities, it is a continuous effort to protect cultural landscapes, sacred places, or locations of unmarked burials. However, many communities also wish to avoid ground-disturbing activities within these spaces. These sites can only be protected if their location is known. Indigenous communities are reaching out and looking for more innovative survey methods, including the use of Historic Human Remains Detection (HHRD) dogs. Also, by combining methods it can offer compelling information to help start a dialogue of compromise so all involved parties can find a solution to protecting these sites. Indigenous communities are also asking for the use of HHRD dogs to help identify items in institutional or academic collections that might be human remains or funerary items. This presentation will explore some of the concerns and requests for Native communities and offer possible new ideas and solutions.

Eppich, Keith

[231] *Strange Vessels: Nonlocal Ceramics within the Potting Traditions of El Perú-Waka', a Classic Maya Center*

The large-scale analysis of the potting traditions for the Classic Maya city-state of El Perú-Waka' revealed a rich indigenous artistic tradition. It also highlighted a number of ceramics outside of this tradition, nonlocal ceramics in unique contexts; i.e., “strange vessels.” This paper examines the character and context of these “strange vessels,” aided by both visual, artistic, and petrographic analysis. These vessels appear in a number of unusual contexts, from burials to votive deposits to domestic middens. They show contacts as widespread as Calakmul, the northern Yucatán, Belize, the Guatemalan Pacific coast, Veracruz, and the Copan Valley. This presentation explores the meaning of these contacts and their political, economic, and social implications. There are also nice photographs. ***This presentation will include images of human remains.

Erauw, Céline (Vanderbilt University), Junying Liu (University of Cambridge), Peter Eeckhout (ULB), and Tamsin O'Connell (University of Cambridge)

[182] *From Rituals to Daily Life: An Isotopic Study of Camelid Remains from Pachacamac, Peru*

Pachacamac is a significant archaeological site on Peru's central coast that was occupied from the fifth to sixteenth century AD. This study presents the first isotopic analysis of faunal remains from the site. Previous zooarchaeological research on the faunal material discovered by the Ychsma Project (ULB) revealed that domestic camelids were the second most frequent taxon at Pachacamac, representing 20% of the NISP and 14% of the MNI. These remains were discovered across various domestic and ritual contexts, with both disarticulated remains and complete individuals represented. The study analyzed the stable isotopes of carbon and nitrogen from 48 samples of camelid bones and hair from late prehispanic contexts (CE 1000–1533) in five sectors of Pachacamac. The preliminary results show a wide variation of carbon ($\delta^{13}\text{C}$) and nitrogen ($\delta^{15}\text{N}$) isotopic values in both the camelids from domestic and ritual contexts, with notably high levels of $\delta^{15}\text{N}$ also observed. This paper will discuss these isotopic results in light of the varying archaeological contexts and buildings, providing insight into the presence and use of camelids at Pachacamac.

Erauw, Céline [331] see Eeckhout, Peter

Erb-Satullo, Nathaniel (Cranfield University)

[49] *Surviving the Crisis Years? Exploring the Bronze Age-Iron Age Transition in the South Caucasus*

From the Balkans to the Iranian Plateau, the end of the Bronze Age and the beginning of the Iron Age was a critical period of transformation, defined by crisis, collapse, resurgence and reorganization. The South Caucasus appears an unusual exception to this broader trend, one whose significance for the broader study of Late Bronze Age Collapse has yet to be fully appreciated. This paper outlines and evaluates existing archaeological evidence for continuity across the end of the Bronze Age and the beginning of the Iron Age in the South Caucasus, focusing on material culture, economic organization, and settlement structure. I suggest several possible explanations for the divergent trajectory of this region, and introduce my ongoing research aimed at investigating these hypotheses. Such investigations not only illuminate distinctive features of Late Bronze Age societies in the South Caucasus, they also, by way of contrast, shape our understanding of the Late Bronze Age collapse in the wider Near East, and indeed of the global study of collapse, resilience, and regeneration.

Erb-Satullo, Nathaniel [80] see Ho, Joyce Wing In

Eremin, Katherine [228] see Wang, Chen

Eren, Metin, and Brian Andrews (Rogers State University)

[280] *On the Frequency of Overshot Flakes in Siberian, Clovis, Folsom, Archaic Lithic Assemblages*

Paleoindian archaeologists often suggest that overshot flakes, or a high frequency of overshot flakes, in lithic assemblages is characteristic or indicative of Clovis technology. Here, we present overshot flake frequency data recorded from Siberian, Folsom, and Archaic assemblages. We then compare these data to published overshot flake frequencies from Clovis assemblages. Our results suggest that while overshot flakes may be characteristic of some Clovis assemblages, they can also be characteristic of non-Clovis assemblages, and thus are not indicative, much less diagnostic, of Clovis. We suggest that the authoritative, knapper-inspired mystique surrounding overshot flakes and flaking be dropped.

Erickson, Clark (University of Pennsylvania)

[46] *Precolumbian Civilizations of the Bolivian Amazon in Lathrapian Perspective*

Donald W. Lathrap is probably best respected for his insistence on the priority of tropical forest cultures in the early development and elaboration of domesticates, agricultural economies, pottery, long-distance trade and migration, canoe cultures, cultural innovation, and early social complexity in the Americas. In his continent-wide perspective, Lathrap recognized the key importance of the “savanna cultures” of Colombia, Guianas, Venezuela, and Bolivia within his larger framework of a shared neotropical forest cultural phenomenon. Working from limited information about pottery styles, settlement mounds, raised fields, causeways, linguistic diversity, and chronology in the 1960s, he highlighted the diverse peoples of the Bolivian Amazon within the “big picture” of the continent. For Lathrap, the Llanos de Mojos played a significant role in demonstrating cultural advancements and achievements in the upper reaches of the Amazon basin and this view is supported by decades of past and recent research on historical ecology, monumentality, engineered landscapes, urbanism, social interaction, and complex societies of the region.

Ericson, Jessica [322] see Saxon, Jasmine

Erlick, Mary (Bureau of Reclamation)

[95] *How Reclamation Developed Programmatic Agreements: Alternative Form of Compliance with Section 106*

Over the last 10 years, the Bureau of Reclamation’s Provo Area Office, along with the Utah and Wyoming State Historic Preservation Offices, have developed programmatic agreements (PAs) as an alternative form of compliance with Section 106 of the National Historic Preservation Act of 1966. These PAs allow the agency to complete two types of streamlined projects. The first is for water-associated infrastructure such as actions through the WaterSMART grant program. Since January 2021, Reclamation has awarded \$431.3 million in WaterSMART funding, and the program continues to grow. The second type are projects Reclamation considers to be minor such as routine maintenance. This paper describes the context in which these PAs were developed, challenges encountered, and suggestions for how these kinds of mitigation could be implemented in future land management elsewhere.

Ernenwein, Eileen (East Tennessee State University), Brett Riggs (Western Carolina University), Jane Eastman (Western Carolina University), and Kyra Waitt (North Carolina State University)

[123] *Defining the Mississippian Community through Geophysical Survey at the Watauga Site*

Watauga, an ancestral Cherokee site in the upper Little Tennessee River Valley of southwestern North Carolina, includes a Middle Mississippian period center with remnants of two platform mounds. Noninvasive site surveys in summer 2024 examined more than 3 ha with ground-penetrating radar, magnetometry and UAV-based lidar. These combined methods reveal details about mound construction and ceremonial structures preserved in them, and the arrangement of domestic structures surrounding a presumed plaza between the mounds. This poster presents these results with a focus on data processing, analysis, fusion, and interpretation.

Ernenwein, Eileen [322] see Hall, Noah

Escalante, Kirsty

[327] *Early Maya Archaeological Exploration, Looting, and the Unintended Consequences of the Global Chewing Gum Economy*

The trajectory of Maya archaeology is inextricably linked to the chewing gum industry. Since the earliest archaeological expeditions to Maya sites in Guatemala, Mexico, and Belize, archaeologists have relied on workers extracting the gum of *sapodilla* trees to aid in their investigations—from hiring *chicleros* as forest guides and excavators, to offering them cash rewards for leads on undiscovered archaeological sites. The decline of the chicle industry beginning in the 1950s coincided with the growing interest of museums and collectors in Maya antiquities, leading to the severe looting of Maya sites. Ethnographic studies on looting in Guatemala and Belize indicate a close association between Maya site depredation and chicle extraction, demonstrating the unintended consequences of Maya archaeology's historical relationship with the chicle industry. Given that the region's economy still depends on the extraction of forest resources, understanding the economic relationship between chicle, archaeology, and looting can enlighten how global demand for both antiquities and forest products can impact local economic conditions and Maya archaeological site preservation.

Escalante Zarco, Angela, Hannah Lau, Lacey Carpenter (University at Buffalo), and Colin Quinn (University at Buffalo)

[228] *Fragments of Trade: Ceramic Insights from a Historical Central New York Household*

Ceramics are integral to daily life, reflecting both practical and cultural aspects of historical households. The analysis of ceramic assemblages can reveal insights into the daily practices, social status, and cultural connections of a household. This poster investigates the ceramic assemblages retrieved from the Barnabas Pond House in Clinton, New York, a residence established by a Revolutionary War veteran and village founder. Afterward the house was later occupied by subsequent generations of the family and other community members, providing a unique opportunity to explore changes in daily life, trade and social dynamics over time through the ceramic artifacts they left behind. By analyzing ceramics from various contexts within and around the house, we seek to reconstruct the domestic practices of the household, including food preparation, storage, and consumption. Furthermore, this analysis extends to understanding the trade routes, economic conditions, and cultural exchanges that influenced the household. The types, styles, and origins of the ceramics provide insight into the material culture, social dynamics, and regional interactions. Through this comprehensive analysis, we will gain a greater understanding of the lifestyle, socioeconomic interactions, and cultural practices that shaped the occupations at the Barnabas Pond house and, more broadly, historical Central New York.

Escamilla, Marlon (Morgan Community College)

[335] *Mountains and Water: The Symbolic Landscape of Nahua-Pipil in Early Postclassic*

This research explores the earliest Nahua-Pipil settlements established in the Balsam Coast Range of the western part of El Salvador during the Early Postclassic (AD 800–1200) period. Specifically, this study seeks to discuss the possible reasons why the Nahua-Pipil decided to build their settlements in the Balsam Coast

Range and to what extent the location of these archaeological sites is a cultural process of symbolic appropriation of the landscape as a reflection of emulation associated with a diasporic migration phenomenon. The study of Nahua-Pipil population movement to the Balsam Coast in El Salvador contributes to better understanding of identity in archaeology to comprehend why these communities maintained their Nahua-Pipil identity through landscape, understanding that landscape is a conceptual and behavioral process, scholars now understand that the analysis should encompass not only what is on the land, but also human perceptions about the land. In addition, productive lines of research are developed through asking questions about the particular characteristics of different man-made environments and the symbolic influence of these characteristics on specific social formations.

Escamilla, Marlon [335] see Kaplan, Jonathan

Escribano-Ruiz, Sergio [168] see Gonzalez San Martin, Ana

Esdale, Julie [96] see Graf, Kelly

Espinosa, Marcus [179] see Hedlund, Jonathan

Espinoza, Edgar [289] see Neff, Hector

Esquivel, Savannah (University of California, Riverside)

[48] *What a Relief: How to Display an Idol in the Early Colonial Atlixco Valley*

This talk examines the preservation of contentious objects during moments of regime change. Focusing on a prehispanic god image embedded in the wall of a monastic church in early colonial Mexico, I argue that Nahuas selectively preserved idols in plain sight to craft new lithic narratives of resilience. The destruction of potent images was crucial to ritual power transfer for Central Mexicans and Europeans alike. Scholarship on iconoclasm has tended to focus on the intentions of the colonizers. However, situating remnants of potent images in more extensive histories of Indigenous territorial struggles offers a foil to colonial histories of epistemic and cultural violence. A striking example from the Puebla-Tlaxcala Valley shows that Nahuas preserved carvings that indexed histories of territorial occupation and forced dispossession, later displaying the objects in provocative places to incite ritual violence. In so doing, Nahuas mobilized overlapping Catholic and Mesoamerican traditions of spoliation to subvert the control of oppressive foreign regimes.

Esteban, Irene (University of Valencia; Nelson Mandela University), Enno Schefuß (MARUM, Center for Marine Environmental Sciences, University of Bremen), and Naomi Cleghorn (University of Texas, Arlington)

[281] *Last Interglacial Environments of the Paleo-Agulhas Plain: Plant Wax Biomarkers from Knysna Eastern Heads I, Cape South Coast of South Africa*

The South Cape region of South Africa, part of the Cape Floristic Region, is a crucial area for investigating Pleistocene ecosystems and human evolution dynamics. The transition from the Middle to the Later Stone Age in this region coincides with the exposure of the Paleo-Agulhas Plain (PAP) during Marine Isotope Stages 3 to 2 (MIS 3–2). The PAP, now submerged, was likely a rich foraging ground for Late Pleistocene hunter-gatherers. This talk presents plant wax derived *n*-alkanes and their compound-specific $\delta^{13}\text{C}$ and δD in 38 sediment samples from Knysna Eastern Heads I, a site overlooking the southern coastal plain of South Africa. Results will provide insights into the proportion of C_3 vs. C_4 plants and past precipitation and environmental aridity from the late MIS 3 to the Holocene, including the Last Glacial Maximum and Last Glacial / Interglacial Transition. Our findings are interpreted in the context of a comparative assessment from 21 soil samples from seven vegetation biomes from the surrounding region. By integrating with other environmental proxies, our study will ultimately contribute to a better understanding of the habitats' evolution of a now submerged ecosystem and how past people's foraging behaviors evolved in a changing surrounding landscape.

Estevez, Jorge [233] see Curet, L. Antonio

Estrada-Belli, Francisco (Tulane University)**[83]** *Arquitectura y ritual público en el complejo Tutil de Dzibanche*

Se reportan los resultados de las excavaciones en las estructuras Tutil 1, 5 y 6 en la Plaza Tutil, uno de los cuatro complejos monumentales mayores del centro urbano de Dzibanche/Kaanu'l, realizadas en el marco del Proyecto Dzibanche/PROMEZA. Adicionalmente se registró una trinchera de saqueo en un templo ubicado a 300 m al este de la plaza Tutil y a lo largo de la calzada que la conecta con el Grupo Principal de Dzibanche, denominado Tutil 3. En algunos de estos edificios se registraron fachadas con decoración de los cuerpos escalonados tipo talud-tablero y alfardas, un estilo arquitectónico comúnmente asociado a Teotihuacan en la época Clásica de las tierras bajas mayas. Aquí se reportan también los rituales de terminación asociados a estas estructuras los cuales sugieren contemporaneidad sugiriendo un evento que marcara el fin de uso ceremonial de este complejo arquitectónico a mediados de la era Clásica. *****Esta presentación incluirá imágenes de restos humanos.**

Estrada-Belli, Francisco [169] see Callaghan, Michael

Estrada-Belli, Francisco [169] see García Vázquez, Berenice

Estrada-Belli, Francisco [169] see Hannold, Cynthia

Estrada-Belli, Francisco [169] see Tiesler, Vera

Estrada-Belli, Francisco [169] see Tokovinine, Alexandre

Eubanks, Jill, Jelmer Eerkens (University of California, Davis), Jeff Rosenthal (Far Western Anthropological Research Group), Kenneth Gobalet (CSU Bakersfield [Emeritus]), and Malte Willmes (Norwegian Institute for Nature Research)**[207]** *Reconstructing the Life-History of Salmon from Seven Archaeological Sites along the Feather River, Butte County, California: A Multi-collaborative Approach*

Far Western Anthropological Research Group worked on a project to mitigate the effects of levee improvements along a 7-mile stretch of the lower Feather River in Butte County, California, which resulted in the excavation of seven Native Maidu village sites. Careful excavation of these sites, combined with 110 radiocarbon dates, produced the largest and best dated fish assemblage from California's Central Valley. These sites show nearly continuous use of the region for the last 6,000 years. From these efforts, a wide diversity of fish remains were recovered and 32,000 were identified to family or species including ~13,346 salmon bones from distinct temporal components. In collaboration with the Estom Yumeka Maidu Tribe of Enterprise Rancheria, Far Western has worked alongside non-CRM colleagues, using zooarchaeological methods, stable isotopes, and ancient DNA studies to reconstruct individual salmon key life metrics (age, size, habitat use, etc.). Preliminary data shows that over time a change in salmon age, size, and habitat use occurred along this stretch of the Feather River. By combining forces, the data produced will make a stronger contribution to the archaeological record, modern salmon restoration efforts and provide a foundation for future salmon studies in the region.

Eury, Eva (Utah State University)**[126]** *Zooarchaeological Data, Habitat Suitability Models, and Game Management in the Intermountain West*

Research on the impact of climate on artiodactyls in the western United States is still unfolding. Modern datasets on the impact of climatic variables on these animals often span no more than several decades and remain limited in number. Given these temporal constraints, archaeological and paleoecological data provide a promising avenue for viewing long-term the ways that temperature and precipitation condition artiodactyl demographics. Utilizing prey model logic, archaeological data, and the idea of habitat suitability, this project examines the relationships between climatic variables and artiodactyl abundances across the Holocene to build climate envelope models for large game in the Wyoming and Bonneville Basins. We discuss these findings and their implications for the health of artiodactyls in the context of current predictions for the effects of climate change on this region. Understanding the impact of these variables on artiodactyls in the past will allow wildlife managers, government organizations, and conservation groups to make more informed decisions regarding the management of animal populations in the coming decades of climate change.

Evans, Amanda (Gray & Pape Inc.), Cynthia Fadem (Gray & Pape Inc.), and William Sassorossi (Gray & Pape Inc.)**[292]** *Submerged Paleo-landscapes Offshore Alaska: Modeling Site Potential and Archaeological Preservation*

The story of the peopling of the New World is firmly centered on the waters surrounding present-day Alaska, and specifically the land bridge that connected North America and Asia during periods of lower sea level. Despite the importance of this submerged landscape, totaling over 1.3 billion acres, the present-day Outer Continental Shelf along Alaska is largely unexplored. Recognizing the potential for the occurrence and preservation of submerged paleo-landscapes and archaeological sites, the authors developed a model of Alaska's submerged paleo-landscapes. The work was done as part of a larger scope, conducted under contract to the Bureau of Ocean Energy Management. In this paper, the authors will describe the construction of the model, including the datasets used, and present the initial results relative to the larger scope of the contracted study, which generally included mapping discrete sites and providing survey recommendations for future studies.

Evans, Amanda [369] see Fadem, Cynthia

Evans, Joshua (Technical University of Denmark)**[54]** *Domestication Rewilded: A Framework in Eight Dimensions for Parsing Domestication Concepts across Disciplines*

Most scholars now agree that domestication involves intertwined biological and sociocultural factors though tend to favor one or the other "side" according to their disciplinary position. Such binary understandings of domestication, constrained by classic distinctions between "nature" and "culture," appear increasingly insufficient to get at the complex and multifaceted dynamics of domestication across different times, places, and species relationships. Bringing recent multispecies and more-than-human scholarship from the social sciences and humanities into dialogue with domestication theory, I develop a framework for parsing domestication concepts across disciplines. In this framework, domestication concepts can vary along eight dimensions: heredity, symmetry, intentionality, human involvement, multispecies involvement, scale, teleology, and universality. Rather than seek to find one concept to work for all cases, contexts, and disciplinary interests, this inclusive approach embraces the variety and offers a way to lightly structure the "palimpsest" of definitions so the different concepts become comparable in the same terms. At the same time, the framework offers a systematic way to adjudicate which concepts are best suited for different applications. I illustrate how this framework can be useful, particularly for more marginal and/or under-theorized cases of domestication, through my empirical work on microbial domestication in contemporary fermentation practices.

Evans, Lydia [373] see Garcia, Isabella

Everett, Adrian (Yale University)**[349]** *Results from the 2024 Field Season at the Site of El Remanso in Escuintla, Guatemala*

The 2024 field season at El Remanso, a rural-residential site in the department of Escuintla, Guatemala, yielded a significant quantity of Teotihuacan-related ceramic vessels and figurines alongside distinctively local artifacts. The nature of interaction between Teotihuacan and the Maya area has long been a focus of anthropological scholarship, and the modern department of Escuintla, located on the Pacific coast of Guatemala, presents ample evidence of Teotihuacan interaction. Escuintla is well-known for its Teotihuacan-style censers, and most prominently, the site of Montana was theorized to host a Teotihuacan colony based largely on the presence of imitation Teotihuacan ceramics at that site (Bove and Medrano 2003). This presentation will explore the significance of Teotihuacan-style ceramics at El Remanso, located just 10 km southwest of Montana, and how these findings reflect the processes of expansion, migration, and colonization that took place in Mesoamerica during the Early and Middle Classic periods.

Evilla, Geri (University of Denver)**[354]** *Pilgrimage, Trade, and Empire: A GIS Investigation of Roads in the Ocoña Valley, South Peru*

This research examines Inca Imperial expansion into the Ocoña and Chorunga Valleys, through an investigation of precolonial roads and trails. It focuses on the Middle to Late Horizons (700 BCE–1534), with specific attention to the last 100 years, during which time the region was occupied by the Inca state and

experienced a rapid increase in population and architectural development. Data collected in excavations, pedestrian and drone surveys were used to create GIS models to predict and map the location of prehispanic road systems and the sites along them. A combination of least-cost path and visibility analysis were used to investigate settlement and migration patterns and tie this region into the broader context of Andean history. The analysis of roads and the sites associated with them suggests that this region was part of a larger pattern of landscape use that can be seen throughout the Andean world. The continuous reuse of roads and trails throughout the Andes resulted in the accumulation of specific site types, along migration routes: rock shrines, geoglyphs, petroglyphs, and Huacas. This thesis shows how these long-established patterns of movement and land use were part of an ideological and cultural landscape that existed for centuries before the rise of the Inca State, but which may have influenced Inca strategies for territorial expansion into the Ocoña Valley. Roads that provided access to precious mineral and agricultural resources also comprised a cultural landscape, which the Inca utilized to maintain political favor in this region. This idea is bolstered by archaeological data recovered from the Huari period Huaca known as Corral Redondo, which was reused by the Inca in their revered Capacocha pilgrimage. I show how the reuse of Corral Redondo, in the Capacocha Pilgrimage may have been part of a strategy to tie the Ocoña Valley into the Inca Ceque System, a series of huacas that radiate out from Cuzco and organize the Inca Empire. This thesis considers how the natural and constructed landscape were exploited, experienced, and perceived by Andean people throughout time, as well as how those perceptions of landscape may have influenced social organization, during the Inca period.

*****This presentation will include images of human remains.**

Extract, Jonathan (University of California, Riverside)

[381] *The Heart of Matlalcueye: Contemporary Nahuatl Cave Ceremonies in Huetziatl, Puebla, Mexico*

At the center of Matlalcueye Volcano resides Huetziatl Cave, a landmark of profound significance for the surrounding pueblos of Puebla, Mexico. For Delfino, my guide to Huetziatl, the cave is a powerful shrine of prehispanic and ancestral importance. As opposed to many of his Catholic neighbors, Delfino understands Huetziatl as a canal that opens to the abode of the female entity Matlalcueye-Chalchiuhtlicue, where devotees can place offerings to secure rain and agricultural abundance. In this paper, I will discuss my participant observation accompanying Delfino on pilgrimage from his pueblo of San Miguel Canoa to Huetziatl, which I conducted in February 2023 and 2024. I will discuss the ethnohistoric record surrounding cave rituals at Matlalcueye, which includes sixteenth-century cartography and chronicles, as well as analyze the Nahuatl prayers, narratives, and rites I recorded with Delfino. Since Delfino's annual pilgrimage coincides with the Festival of San Juan Bosco near Huetziatl, I also explore how Delfino grapples with his heteronormative religious practices in a Catholic region and what his commitment to ancestral traditions means for his political and cultural identity. Furthermore, I explore the phenomenon of overlapping practices of the ancestral landscape, which together make up Matlalcueye's symbolic geography.

Eyeington, Ashley [369] see Kibler, Karl

Fabian, Lara (University of California, Los Angeles)

[278] *Shifting Shores and Moving People: The Caspian in the Iron Age and Beyond*

The Caspian Sea is a fulcrum that shaped movement potentials at the western edge of the Eurasian Steppe. Either a small sea or the world's largest salty lake, the Caspian is a complex space both ecologically and socially. The nature of the Caspian's catchment and drainage systems mean that it is subject to extreme fluctuations in water levels, which can occur very quickly, as has happened repeatedly over the past several millennia. Its banks, which currently belong to five different countries, are stunningly diverse: from the Hyrcanian forests to the craggy Caucasus to the wide fertile plains of the Lower Volga. Human interaction inside of and with the wider Caspian system, however, has been critically understudied. This, I argue, is a relic of Russian Imperial perspectives on Eurasia, combined with disciplinary divides and the contemporary geopolitical challenges. In this paper, I consider approaches to the Caspian in both past and present research about Iron Age and first millennium CE civilizations along its banks. I focus particularly on the question of human mobility and explore how we can better understand human activity in this key connective zone.

Fabian, Lara [321] see Lau, Hannah

Fadem, Cynthia (Gray & Pape Inc.), and Amanda Evans (Gray & Pape Inc.)

[369] *The Role of Geoarchaeology and Geophysics in Cultural Mitigation for Offshore Wind Development Part 2: Toward a Best Practices Approach*

Underwater heritage spans human history, from submerged landscapes to tangible remains of water- and aircraft. Cultural resource assessments generally adequately address tangible heritage in the marine record. Identifying “sites” in a terrestrial context typically relies on artifact presence, while the scale of offshore archaeological investigation is often limited to the landscape level. Marine archaeologists review and assess project geophysical and geotechnical survey data, resulting in archaeological assessments reviewed by government agencies and Tribal stakeholders. Despite technological advances, marine archaeologists are typically limited to identifying portions of submerged landscapes, rather than discrete sites, while the broader landscapes containing these areas may already be significant to stakeholders. Cultural heritage laws require identification and avoidance of any potentially significant resources, but avoiding an entire paleo-landscape during offshore development is often unfeasible. Archaeologists must develop cultural mitigations appropriate to both the scope and significance of these project landscapes. Meaningful mitigations can only be developed in coordination with open dialogues about applied methodologies and their limitations. This paper will explore the challenges associated with the practice of geoarchaeology as cultural mitigation and the theoretical foundations for interpreting submerged landscape data with respect to cultural research questions.

Fadem, Cynthia [292] see Evans, Amanda

Fahey, Brian (Arizona State University)

[281] *Prey Size in the MIS 5 and Early MIS 4 Levels at Pinnacle Point 5-6N, South Africa, and a Comparison to Regional Prey Size Trends in South Africa and Morocco*

Debates about the origins of precocious cultural behaviors appearing in Marine Isotope Stages (MIS) 5 and 4 in Africa often center on changes in subsistence strategies or demographic pressures. Patterns of prey size reconstructed from archaeofauna can be a useful proxy in detecting subsistence and/or demographic change, as prey size signals resource access and resource intensification following optimal foraging theory. A new quantitative method for estimating prey size from fragmented long bone shafts eliminates inter-analyst variability and is applied to MIS 5 and early MIS 4 assemblages from Pinnacle Point 5-6N, South Africa. Patterns of prey size from PP5-6N between ~100 and 70 ka are compared to the contemporary regional patterns from South Africa and Morocco. Consideration is given to the correspondence of prey choice to large-scale environmental conditions and the association of complex tool forms and symbolic artifacts.

Fahl, Amelia [288] see Kennedy, Ryan

Fairweather, John [174] see Wu, Ying-Li

Faith, Tyler [196] see Dunn, Auriana

Faith, Tyler [346] see Pargeter, Justin

Falay, Burak

[103] *Traditional Living and Production Practices based on Animal Husbandry in the Melendiz Region: Ethnographic and Ethnoarchaeological Approaches*

In Turkey, the Tepecik-Çiftlik Archaeological Research Project is engaged in ethnographic and ethnoarchaeological fieldwork in the Melendiz Region of the Volcanic Cappadocia Region in the province of Niğde. The project’s focus is on the living and production practices of communities with livestock-based subsistence economies. The subsistence strategies of the communities inhabiting the arid terrain of the Melendiz Mountains, reliant on animal husbandry, are supported by architectural structures constructed with locally sourced materials. Records from the Ottoman period and interviews with local residents indicate that this way of life has a long historical tradition in the region. The results of the field studies demonstrate how these communities have adapted to their environmental conditions and have preserved a substantial corpus of traditional knowledge spanning millennia. While flock owners entrust their herds to herders for grazing in

the grasslands between mountainous areas and low altitudes, shepherds have developed a traditional way of life and production strategy that allows them to live and sustain animal food production in the temporary settlements they have established in the pastures they migrate to. These strategies of Melendiz Region communities for overcoming environmental challenges could help shape sustainable living models globally.

Falucci, Armando (University of Tübingen), Adriana Moroni (University of Siena), Fabio Negrino (University of Genoa), Marco Peresani (University of Ferrara), and Julien Riel-Salvatore (Université de Montréal)

[384] *Exploring Cultural Transmission Dynamics and Chrono-Cultural Variability in the Aurignacian: Insights from the Italian Peninsula*

The Aurignacian marks a critical phase in the expansion of *Homo sapiens* across Europe, defined by considerable internal variability. In Italy, this variability is evident as the earliest Aurignacian in the north appears contemporaneous with the Uluzzian in the south, highlighting distinct regional trajectories worth in-depth examination. This paper investigates the cultural dynamics of the Aurignacian south of the Alps and across peninsular Italy, focusing on environmental changes and cultural transmission processes to understand their roles in the chrono-cultural development of this technocomplex. Our multifaceted approach combines lithic technology analysis, studies of bone tools and personal ornaments, and chronometric dating. These methods will enable us to assess the extent to which Aurignacian development in Italy aligns with broader European patterns while also exhibiting unique regional characteristics shaped by specific cultural transmission processes and diverse environmental and geological contexts. By integrating these varied lines of evidence, our study aims to deepen our understanding of the lifeways of foraging groups in Europe during the early stages of the Upper Paleolithic.

Falucci, Armando [384] see Riel-Salvatore, Julien

Fanell, Tyler

[128] *Using GPR to Characterize Sediments along the Conemaugh River*

A geomorphologic study of the Squirrel Hill site, a Johnston phase (AD 1450–1590) Monongahela Tradition site, is the focus of this research. Previous work completed by IUP has documented much of the material culture found at the site. Through previous fieldwork, the northern boundary of the site was extended, and a suspected paleochannel was discovered. The presence of an Archaic component beneath the Monongahela Tradition component may possibly be present. However, due to the instability of the landform during the Archaic period, the extent of possible site preservation is unknown. This research project aims to use geomorphic and geophysical methods to (1) confirm the presence of a paleochannel, (2) study the sediments of the suggested paleochannel to gain insights about water flow rate and channel migration over time, and (3) date the age of the channel to determine its temporal relationship to the Squirrel Hill site. This will be achieved by completing a GPR survey of the suspected paleochannel, as well as taking geomorphic auger samples, taken both within the extent of the suspected paleochannel and outside of it, and grain size analysis using accepted methodology.

Fang, Hui [44] see Underhill, Anne

Farace, Anthony [66] see Datka, Zhuldyz

Farfan, Gabriela [165] see Pansani, Thaís

Fariña, Richard (Universidad de la República), and Ximena Villagran (Universidade de São Paulo, Museu de Arqueologia e Etnologia)

[53] *Micromorphology of the Late Pleistocene Site of Arroyo del Vizcaíno, Uruguay*

South America contains the most controversial evidence when discussing the peopling of the Americas. The overall consensus is that humans reached South America after the Late Glacial Maximum (LGM), with widely accepted sites such as Monte Verde II, Huaca Prieta, Arroyo Seco 2, and several other final Pleistocene–early Holocene sites across the continent to support this. However, several pre-LGM archaeological sites have

been reported in South America since the 1980s, such as Boqueirão da Pedra Furada and others at Serra da Capivara (Piauí), and Santa Elina (Mato Grosso) in Brazil; and Arroyo del Vizcaíno, in Uruguay. In this presentation, we will tackle the controversies around the pre-LGM sites in Brazil and present preliminary results from the micromorphological investigation of Arroyo del Vizcaíno. The site contains evidence of human presence in South America from over ca. 30,000 in the form of cut marks in megafauna bones, produced by human-made stone tools, whose origin has been questioned as the potential outcome of natural damage during sedimentary transport.

Farley, Kayla [284] see Wolff, Christopher

Farquharson, Kyle (University of Calgary), Armando Anaya Hernández (Universidad Autónoma de Campeche), Felix Kupprat (Universidad Nacional Autónoma de México), and Kathryn Reese-Taylor

[199] *Understanding Regional Integration at the Maya Capital of Calakmul*

In this paper we provide a reevaluation of the relationships between Calakmul and surrounding subsidiary centers, offering a novel approach in understanding Calakmul's role within the region during the Late Classic period (AD 650–850). This study is based on new lidar and survey data from southern Campeche, Mexico, which enhances our understanding of the settlement patterns and allows for more precise model of interactions to be created. Using GIS and Social Network Analysis, we model regional integration in southern Campeche. Specifically, we determine the area and sites that could have been optimally administered by Calakmul using least-cost GIS analyses and node-level analyses within Social Network Analysis. A discussion regarding regional economic organization is drawn from the results.

Farquharson, Kyle [109] see Reese-Taylor, Kathryn

Faulkner, Patrick [59] see Crowther, Alison

Fayek, Mostafa [284] see Beller, Jeremy

Fayer, Joe [125] see Leiva, Jennifer

Fehren-Schmitz, Lars (UCSC)

[165] *A Paleogenomic Perspective on the Initial Peopling of Western South America*

In the recent decade, paleogenomics has emerged as a powerful tool for uncovering past human dispersals. This is also true for South America, where alongside archaeological sources and traditional knowledge, the growing number of sequenced genomes from Native South American ancestors have significantly enhanced our understanding of the peopling of the continent and the intricate demographic developments that ensued. Still, many open questions exist, like the number of migration waves, the continuity of initial genetic lineages, and especially when humans first entered the continent. One fundamental limitation so far has been the paucity of very early remains of ancestors in South America. Another is the uneven geographic distribution of available genomic data. Here, we analyze previously published and new unpublished genomes from western South America, mainly Colombia, Peru, Bolivia, and Chile, and discuss new insights into the genetic population history of the region. We further discuss the potential and limitations of paleogenomics to contribute to the discussion of the timing of the initial peopling acknowledging the aforementioned limitations and explore non-skeletal DNA as an alternative source to this important question.

Fehren-Schmitz, Lars [297] see Beauchemin, Patience

Fehren-Schmitz, Lars [297] see Black, Valda

Fehren-Schmitz, Lars [316] see Nelson, Elizabeth

Fehren-Schmitz, Lars [104] see Verdugo, Cristina

Feit, Rachel [232] see Ingalls, Victoria

Feldens, Peter [277] see Auer, Jens

Feltz, William (CRIM UIC), Aldo Foe (University of Illinois, Chicago), and Shawn Joy
[379] UAV, SONAR, DEMs, and CRIM

This paper explores the applications of modern technology to further the analyses and understanding of the consequences of global conflict. Partnered with the Defense Prisoner of War / Missing in Action Accounting Agency (DPAA), the Center for the Recovery and Identification of the Missing (CRIM) uses such technology to facilitate recovery missions in hard-to-reach landscapes. The rugged terrain CRIM often works in, and the physical challenges presented by these areas, has required adoption of different technologies in the recovery process. In mountainous landscapes, CRIM has conducted drone-based photography to digitally render the topography of cliff faces. Unity was then used to run predictive models that assessed the potential dispositions of remains. In more remote areas, where long treks along mountain paths make the transportation of heavy equipment impractical, cell phones replace drones and allow for the creation of digital elevation models (DEMs) using photogrammetry. On occasion, CRIM and its partners conduct research on aircraft losses in coastal waters. These planes are still submerged, requiring sonar technology to indicate anomalies obscured by dark, murky waters. These examples represent some of the ways in which CRIM has used modern technology to approach challenges encountered during the early stages of recovery missions.

Feng, Jennifer, Kathleen Morrison (University of Pennsylvania), Mark Lycett (University of Pennsylvania), Chad Hill (University of Pennsylvania), and Moriah McKenna (University of Pennsylvania)

[350] South Indian Landscape Trajectories: Recent Fieldwork at Brahmagiri

The site of Brahmagiri in central Karnataka is significant in the history of South Indian archaeology as the type site for South Indian chronologies and ceramic sequences. First excavated by the Mysore State Archaeological Department between 1929 and 1941 and the Archaeological Survey of India under Mortimer Wheeler in 1947, more recent reanalysis (Morrison 2006) of archaeological collections from Brahmagiri have complicated previous interpretations of its 5,000-year occupational history. Building on previous research, the South Indian Landscape Trajectories (SILT) project aims to understand long-term histories of land use, social organization of households, regional and long-distance trade, and rural life in the region. New research at Brahmagiri, which is located far from a perennial water source, complements extensive previous research at the nearby site of Kadebakele, which is located on the banks of the Tungabhadra River, allowing us to investigate relationships between water, urbanization, and agricultural trajectories at a regional scale. We present the efforts of the first two seasons of fieldwork (2023–2025), including surface documentation, mapping, remote sensing, and reanalysis of two of the 1947 sections.

Fenn, Thomas (University of Oklahoma), Ella Brewer-Jensen (University of Oklahoma), Virginie Renson, Jay Stephens (University of Missouri), and Jeffrey Fleisher (Rice University)

[80] Copper-Based Metals from the Tanzanian Swahili Coast: Connections, Technologies, and Implications

Examining non-ferrous metals from the Tanzanian Swahili Coast, many imported and reworked locally, can serve as proxy to understanding the impact of Indian Ocean trade on local economies, particularly with regard to the consumption of semi-exotic materials and finished goods. Copper-based metals (and even lead metals) were relatively commonly imported, but they also were locally worked and some even may have been produced locally or regionally. Historically, Swahili towns along the East African coast played prominent roles in the triangular Indian Ocean maritime trade linking East Africa with the Persian Gulf / Red Sea and India, but the impact and extent of economic changes through time at these towns are still poorly understood. To that end, copper-based metals were examined from several Swahili archaeological contexts along the Tanzanian coast dating from the seventh century CE to sixteenth century CE. Results of chemical and isotopic analyses identified imported metals from multiple locations. However, several low-Pb unalloyed coppers or low-tin bronzes also might have originated from South Africa, making this the first documented occurrence of copper-based metals being exported from this region to the Swahili Coast. Other connections also are discussed as well as the role of recycling in complicating interpretation of these data.

Fenn, Thomas [228] see Ganiyu, Abiodun

Fennessey, Brenna (University of Florida), Sylvia Wemanya (Rice University), Audax Mabulla (University of Dar es Salaam), Mary Prendergast (Rice University), and Katherine Grillo (University of Florida)

[123] *Insights from Ground-Penetrating Radar Survey at a Pastoral Neolithic Occupation Site in Northeastern Tanzania*

Geophysical and remote surveys are well-established methods for identifying subsurface features and providing insight to site layout and land-use strategies in the archaeological record. In recent years, magnetometry has been successfully used at Pastoral Neolithic (PN; 5000–1200 BP) sites in eastern Africa, allowing for the identification of features and deposits at ostensibly ephemeral pastoralist settlement sites. However, methodological questions remain about whether other geophysical or remote survey methodologies could identify similar or additional features at similar sites. Presented here are the preliminary results from the first ground-penetrating radar (GPR) survey conducted at a PN occupation site, conducted as part of the Research on the Archaeology of Pastoralism in Tanzania (RAPT) project. Initial findings from GPR and ground truthing conducted at Laja, a newly identified PN site in northeastern Tanzania, have demonstrated the ability of GPR to identify subsurface features and contribute to our understanding of PN site layouts. These results highlight the effectiveness of GPR in investigating questions related to site layout and land use in mobile contexts and lay the groundwork for future research that employs multimethod geophysical surveying.

Ferar, Nolan [384] see Haws, Jonathan

Ferguson, Angela [225] see Hummel, Taylor

Ferguson, Jeffrey (University of Missouri), Jonathan Schaefer, Robert Bischoff (Arizona State University), Kayla Powers (Arizona State University), and Jonathan Paige (University of Missouri)

[223] *Expanding Obsidian Procurement Studies in West-Central New Mexico: New Data from Early and Late Sites in the Lion Mountain Area*

Obsidian procurement studies in west-central New Mexico have proven valuable in characterizing changes in social connections over time. Previous research into the obsidian procurement patterns in the Lion Mountain area focused on the Pueblo II through Pueblo III periods represented by the majority of archaeological sites in the area. Recent in-field XRF analysis of obsidian from an earlier large Pithouse period and a later Pueblo IV period site (Magdalena Pueblo) expand the temporal range and better contextualize regional interaction through obsidian procurement networks. The new data reinforce patterns observed on very small assemblages of early and late sites in the region that show a greater reliance on northern (Mt. Taylor and Jemez) sources during these periods in comparison to the focus on the local McDaniel Tank source during the Pueblo II and Pueblo III periods. The Magdalena Pueblo assemblage confirms the increased social connections previously observed in the region with the presence of more distant sources to the west.

Ferguson, Jeffrey [169] see Callaghan, Michael

Ferguson, Jeffrey [69] see Munene, James

Ferguson, Jeffrey [223] see Pierce, Daniel

Ferguson, Jeffrey [223] see Smelser, Noah

Ferguson, Loudon (University of Missouri, Columbia)

[225] *The Role of Experiential Archaeology in Elementary-Age Education and Outreach*

Experiential learning is often held as the “gold standard” of public education. Unfortunately, this is often not possible within the limitations of elementary education. Archaeologists can provide an important benefit to public school teachers by introducing students to the archaeology of their local area; however, this generally takes the form of a presentation, without any hands-on experience. This study explores the effects of using experiential archaeology as part of an education presentation for elementary-age students by comparing student interest and knowledge retention with and without an experiential portion. Using this data, I hope to contribute to the techniques used for public outreach and education in the field of archaeology.

Fernandez, Trish (InContext)**[108]** *Who Gets to Be Called a Professional: Gatekeeping and Discrimination in US Archaeology*

The minimum qualifications of the SOI and the RPA are in place to ensure quality work, but they have not evolved with the needs and actual practices of CRM. They ignore the fact that the bulk of practicing archaeologists do not have master's degrees and do not recognize the disconnect between the knowledge and skills gained through a master's degree and the those required in CRM. The RPA could create an alternative solution, but it seems to have stalled in those efforts. When doing so could increase their numbers and create critical mass, the organization instead follows the existing SOI standards rather than take the lead it could as the organization representing our professionals. This paper shares the vision that was presented to the RPA and accepted through their Strategic Plan, in the hopes that the larger professional community can weigh the benefits and consequences of this vision, hopefully overall beneficial, and lobby the RPA to make this vision a priority and lead as our professional representatives rather than follow and perpetuate the gatekeeping and discrimination.

Fernandez Diaz, Juan Carlos [199] see Yaeger, Jason

Fernandez-Gotz, Manuel (University of Oxford)**[170]** *Unrest after Conquest: Indigenous Rebellions in the Roman West*

The Roman wars of conquest brought with them the violent subjugation of millions of people. But what happened in the years and generations after the military campaigns? While there was considerable diversity among regions and communities, many groups launched armed uprisings, sometimes shortly after the initial conquest, but other times several generations later, showing the existence of widespread discontent with Roman rule. Drawing on historical and archaeological sources, this paper will provide an overview on some of the main episodes of indigenous rebellions in the Roman West. This will include famous episodes such as the Boudican revolt in Britain and the Batavian revolt in the Rhineland, but also other, lesser-known episodes that are sometimes not even recorded in written sources. Among the latter, the paper will introduce insights from recent fieldwork at Ambleside in northwest England, which point to the existence of unrest in the Lake District region several generations after the incorporation of the area into the Roman Empire. The results will be set within the wider framework of rebellions against imperial powers in the ancient and modern world.

Fernandez Souza, Lilia [236] see Lerma, Ignacio

Fernandez Souza, Lilia [192] see Portillo, Eduardo

Ferree, Tyler (Illinois State Archaeological Survey), and David Nolan (Illinois State Archaeological Survey)**[37]** *Remote Sensing and Surface Collections Documentation at Otter Creek, a Fourteenth-Century Oneota Village in the Central Illinois River Valley*

The Otter Creek site is one of five Bold Counselor Oneota villages in the Central Illinois River Valley (CIRV). While it is one of two sites in the region with little to no evidence of cohabitation between nonlocal Oneota and local Mississippian groups, Otter Creek has received far fewer archaeological investigations than other Bold Counselor sites. This paper reports the results of a recent remote sensing survey at Otter Creek and an analysis of materials collected from features exposed by agricultural plowing. The remote sensing data revealed a clean space in the center of the village, which we interpret as a plaza or courtyard, and the ceramic data provide insights into the degree to which Otter Creek residents made and used Mississippian vessel forms. Together, these investigations reveal Otter Creek as an Oneota village where the inhabitants selectively engaged with aspects of Mississippian traditional lifeways.

Ferrero, Elena [298] see Ficke, Cash

Ferreyra Cauton, Agustina [331] see Grant, Jennifer

Ferwerda, Carolin [365] see Alperstein, Jonathan

Fetterhoff, Alex (New Mexico Consortium), Grant Snitker, Mary Kliejunas (USDA Forest Service), and Marlee Lazarus

[299] *An Experimental Evaluation of Pile Burning and Its Impacts on Archaeological Surface Assemblages*

On public lands, archaeological resources are regularly taken into consideration in wildland fire operations and postfire monitoring, however less attention is given to impacts on archaeological materials during fuel treatments, such as pile burning. Decades of field and laboratory experiments coupled with the experience and insight from fire-line archaeologists suggest that pile burning has the potential to result in adverse effects to cultural artifacts. This is particularly the case when piles are placed within archaeological sites and artifacts are present on or near the ground surface. In partnership with the Plumas National Forest in Northern California, we conducted a quantitative, field-based study to evaluate the potential impact of pile burning on surface artifacts. We exposed experimentally made basalt chipped stone artifacts to pile burning by placing artifacts directly below piles during firing operations, collected data on fuels and energy transfer during each fire, and conducted a comprehensive evaluation of fire effects on each artifact after the burn. Here we outline the effects of pile burning on basalt artifact and provide management implications that can assist heritage programs in protecting and managing cultural resources during fuel treatment operations.

Fetterhoff, Alex [114] see Gravel-Miguel, Claudine

Ficke, Cash (SWCA Environmental Consultants), and Elena Alessandra Ferrero (SWCA)

[298] *Crossing Boundaries: A Look at Ceramic Distribution at Prehistoric Sites along New Mexico Highways 90, 180, and 12.*

In 2024, SWCA Environmental Consultants conducted a pedestrian survey along New Mexico Highways 90, 180, and 12. Running from Lordsburg, NM, to north of Reserve, NM, the survey corridor encompassed NMDOT, Forest Service, BLM, and private lands adjacent to the roadways. Numerous previously recorded sites were updated, and 50+ newly found prehistoric sites were recorded over the course of the project. Sites ranged from small Archaic lithic scatters to larger multicomponent sites such as Apache Creek Pueblo near Reserve, NM. This survey allowed researchers to work within multiple cultural areas including the western periphery of the Mimbres, the eastern extent of the Salado, and the southern reaches of the Ancestral Puebloan. This poster presents a comprehensive look at the ceramic data from some of the prehistoric sites recorded on this project, including frequency and absence of known ceramic types. The data adds to previous work defining cultural boundaries in this area and across the Greater Southwest.

Field, Julie

[173] *Melinda Allen's Dynamic Landscapes of the Pacific*

Melinda Allen's 1992 research of Aitutaki Island defined an approach to prehistory that compared trends in foraging and food production against a backdrop of ecological transition. Her use of the concept of "dynamism" privileged an evolutionary model that explained change via selective forces that effected foraging activities at the scale of an island (or landscape). Her approach, which examined the elements of articulation between humans and their environment, influenced many to follow in her footsteps. This paper will reflect on the influence of Melinda's conception of island dynamism on archaeological research in Fiji and Hawai'i, which most recently has examined the history of the use of fire in agriculture and the management of microbes as part of food production.

Field, Sean, Sheldon Baker (Mesa Verde National Park), Logan Dean (University of Wyoming, Laramie), and Carole Graham (Mesa Verde National Park)

[55] *A Machine-Learning-Enabled Survey for Large Residential Ancestral Pueblo Sites Using Publicly Accessible Lidar Data*

Within the past five years, the US Geological Survey's 3D Elevation Program (3DEP) has released large swaths of lidar data across the continental United States, giving archaeologists unprecedented access to high-resolution, landscape-scale elevation data that can be used to locate, map, and visualize medium- to large-scale archaeological sites and features. Here, we build an image classification algorithm using the Pytorch pipeline to detect and locate large, ancestral Pueblo sites in static images of hillshaded, lidar-derived digital surface models. The model is trained using site data from Mesa Verde National Park and deployed over a

15,000 km² area in southwestern Colorado and southeastern Utah. Results demonstrate the promise of machine learning for large-scale landscape survey and caution the need for the critical application of machine learning tool kits for the creation—but not interpretation—of archaeological data.

Field, Sean [350] see Berikashvili, David

Figueroa, Cristian [190] see Rojas, Jean-Paul

Filatova, Sonja

[103] *The Dynamics of Crop Spectra in the Highlands of Odisha: An Ethnoarchaeobotanical Perspective*

[WITHDRAWN]

Filimoehala, Darby [173] see Quintus, Seth

Filimoehala, Darby [173] see Rieth, Timothy

Filoromo, Steven [178] see Cochran, Lindsey

Finch, Damien (University of Melbourne), Helen Elizabeth Green (University of Melbourne), Pauline Heaney (Rock Art Australia), Vladimir Levchenko (ANSTO), and Cecilia Myers (Dunkeld Pastoral Company)

[174] *Evidence for a 20,000-Year Sequence of Australian Aboriginal Rock Art*

A decade-long research project has revealed the chronology of a sequence of Australian Aboriginal rock art styles that spans, at least, 20,000 years. The Kimberley region in northwestern Australia is renowned for its rich concentration of painted rock art, traditionally believed to originate from the Pleistocene. Direct radiometric dating of the ochre pigment used for the older art is not possible. Attempts to date the art therefore rely on establishing age constraints through the dating of material overlying or underlying the paintings. Until now, the scarcity of suitable material meant there was extremely limited geochronological evidence to support its Pleistocene antiquity and insufficient results to date the distinctive styles of rock art. Our research project developed techniques to radiocarbon date the more abundant, small mud wasp nests commonly found in contact with Kimberley rock art. Statistical analysis indicated that hundreds of wasp nest ages were necessary to confidently estimate the age span of the five main Kimberley rock art styles. We collected over 600 mud wasp nest samples and prepared 565 for AMS measurement. Our findings, based on 440 radiocarbon dated wasp nests, establish a Kimberley stylistic sequence spanning at least 20,000 years.

Finch, Jade [183] see Joyce, Judith

Fine-Dare, Kathleen [186] see Compton-Gore, Kate

Fink, David [174] see Gleadow, Andrew

Finley, Judson (Utah State University), and Erick Robinson (Desert Research Institute)

[91] *A Multiscalar Analysis of Population Dynamics at the Margins of Maize Agriculture in the American Southwest*
Utah's northern Uinta Basin represents the maximum biophysical extent of maize agriculture in the American Southwest. The adoption of maize agriculture between AD 200 and 300, as well as the subsequent development of early agricultural villages, occurred within well-defined multidecadal precipitation parameters. Here we focus on the intersection of climatic, geomorphic, and population dynamics in the period between AD 1040 and 1100 with a particular focus on technological innovation involving pithouse storage features and pottery between AD 840 and 1080 and population reorganization between AD 1080 and 1100. Our analysis is based on ~175 high-precision AMS radiocarbon ages from dryland agricultural landscapes, pithouse villages, and perishable material culture assemblages to show that the dynamics of early agricultural populations on the margins of Southwest maize agriculture operated on decadal/generational timescales. Precipitation variability and geomorphic thresholds exerted strong controls on the stability of human populations.

Finley, Judson [91] see Holcomb, Cassandra

Finn, Jennifer (Bureau of Land Management), and Christa White-Gonzales (Idaho National Laboratory)

[372] *Mobility, Subsistence, and Settlement: Insights into Folsom Land Use in the Terreton Basin*

Distribution studies of sites and projectile points provide evidence of how precontact populations interacted with their environment and how their land use was organized. The identification of lithic sources allows for the assessment and measurement of mobility patterns. These measurements inform estimates of the seasonal ranges of foraging groups and can illustrate components of their subsistence strategies. In the case of the Lake Terreton Basin, obsidian source data generated from the Folsom assemblage reflect a foraging strategy characterized by low residential mobility. This low mobility may indicate an initial process of “settling in” within the Lake Terreton Basin hydrographic system. The paleoclimatic data demonstrate that the Big Lost River and Lake Terreton hydrographic system created productive wetlands during the Younger Dryas (YD), and an XRF analysis of the Folsom points from the Basin indicate that toolstone was sourced within 40 miles of the artifacts’ deposition. The distribution pattern of Folsom sites clustered in the Lake Terreton Basin and the localized obsidian sources indicate that these groups began to establish a more permanent central base from which they strategically engaged with their landscape. This paper presents these findings and examines its implications within a broader context of existing models of Folsom land use.

Finn, Jennifer [372] see White-Gonzales, Christa

Fisher, Abigail (Principal Research Group)

[196] *Dogs in Space: An Application of Machine-Learning Geometric Morphometric Analyses for Species*

Determination of Large Canids Using Mandibles

A persistent issue in zooarchaeology is the differentiation of domesticated dogs from wolves and coyotes from fragmentary archaeological remains. This is particularly problematic in regions where size cannot be used as a factor, such as the North American northern Great Plains. This poster presents the use of ancient DNA, traditional osteometrics, qualitative observations, and geometric morphometrics to create a training subset of an assemblage of dogs, wolves, and coyote mandibles of varying completeness. This training dataset is then used to create probabilistic species determination hypotheses for the rest of the assemblage using a K-Nearest Neighbor algorithm and a series of geometric morphometric analyses.

Fisher, Abigail [297] see Hofland, Samantha

Fisher, Blaine (Tulane University)

[100] *Defensive Strategies and Architectural Investment: A Lidar Study of Dos Aguadas*

The research presented in this study utilizes lidar technology and GIS to analyze the defensive earthworks at Dos Aguadas, a Maya settlement in the Holmul Region of Guatemala. This study aims to explore the scale of Classic Lowland Maya warfare through the architectural investment observed in the earthworks. By estimating the local population and analyzing the labor force required to construct these fortifications, the research assesses whether the defensive efforts were a localized initiative or part of a broader regional defense strategy potentially linked to the larger city of Tikal. The study employs various geospatial analyses, including viewshed and least-cost path analyses, to evaluate the strategic significance of Dos Aguadas within the regional landscape. The findings suggest that the fortifications may have been part of a coordinated defense system, reflecting the influence of a larger political entity. This research contributes to a deeper understanding of Maya military organization and the sociopolitical mechanisms that underpinned the construction of large-scale defensive structures during the Classic period.

Fisher, Chelsea (University of South Carolina)

[107] *Tracking Cattle and Cowboys in the Colonial Maya Landscape*

Commercial cattle ranching fundamentally transformed and continues to transform the landscape of the northern Maya lowlands in Mexico’s Yucatán Peninsula. Many of these transformations trace their origins to a period of accelerated dispossession from the 1700s until 1847, when Indigenous Maya uprisings led to the

abandonment of the region's many cattle haciendas (plantations). While conflicts between hacienda owners and Maya sharecroppers are well-documented in the study of these transformative changes, this paper considers the role of an often-overlooked category of hacienda worker: the salaried ranch hands, including foremen and cowboys, who managed the day-to-day care of the cattle. Here I couple ongoing landscape archaeology at Hacienda Cetelac—a cattle hacienda that operated from 1773 to 1847 and is located in the agricultural landholding of the community of Yaxunah—with ethnohistorical insights from nineteenth-century manuals written for hacienda foremen and ranchers, so as to analyze the dynamic roles of cattle and cowboys in shaping the colonial Maya landscape. Through an applied reading of these manuals, with their quotidian details and recommendations for ranch hands, new insights emerge into the granular actions that constitute larger structural processes of ecological extraction and dispossession, and that continue to constitute the landscape itself.

Fisher, Lynn (University of Illinois, Springfield), Susan Harris, Corina Knipper (Curt Engelhorn Zentrum Archäometrie), and Rainer Schreg (Universität Bamberg)

[284] *How Things Change: Exploring Long-Term Patterns in Use of Quarried Chert in Neolithic Southern Germany*
Quarries and mines used to obtain silicites are known from Neolithic cultural landscapes across Europe, representing a common pattern of localized, repeated use of selected sources. Though common, Neolithic quarry sites are challenging to interpret in broader sociocultural context due in part to the chronological and regional diversity of quarry activities, from the everyday to the highly specialized, against a background of significant socioeconomic change. This contribution explores characteristics of extraction features and lithic production at the large quarry landscape of Borgerhau, near Ulm, in the upper Danube watershed in southern Germany. At the quarry, several periods of use are documented from 5000 to 2500 BCE, spanning much of the Neolithic period in this region. We examine changes in scale of extraction and aspects of lithic production from Early to Late Neolithic in the context of a changing social landscape, exploring possible relationships to patterns of short- and long-term mobility, interaction, and contexts in which the material is used. We also draw on comparisons to other mine and quarry sites in the region to explore how extraction and lithic production are distributed across a regional landscape of stone sources, settlements, and other activity spaces.

Fitch, Simon [345] see Cook Hale, Jessica

Fitch, Simon [277] see Gaffney, Vincent

Fitzhugh, William (Smithsonian Institution)

[294] *Basque Whaling and Inuit Contacts on the Quebec Lower North Shore*

The first sustained post-Norse northern contacts between Europeans and Indigenous North Americans began in the Gulf of St. Lawrence beginning in the mid-sixteenth century. Mik'maq of the southern Gulf were quick to engage with Basque whalers and traders. In the northern Gulf and southern Labrador, Thule Inuit whale hunters attracted to new Little Ice Age whaling grounds and opportunities for European trade found sporadic common ground with Basque whalers and cod fishermen that lasted into the early eighteenth century. Two decades of Smithsonian and University of Montreal research on the Quebec Lower North Shore document this contact history at a series of Basque and Inuit land and underwater archaeological sites. Some sites demonstrate direct collaboration and mutual assistance between Basques and Inuit, while others suggest hostilities as Basques and Inuit become entangled with other Native American and European groups, all eager to extract resources from a bountiful continental gateway region.

Fitzpatrick, Leslie

[294] *Stable Isotope Examination ($\delta^{18}\text{O}$, $\delta^{13}\text{C}$) of Human Remains from the Monastery of Santa María de Zamartze (Uharte-Arakil Municipality, Navarre)*

A subset of human remains ($n = 155$) recovered during the 2011–2015 excavations from the Monastery of Santa María de Zamartze burial grounds were analyzed for stable oxygen and carbon isotopes derived from bone and tooth carbonate. Provided this site's close geographic association with a medieval religious pilgrimage route, it was conjectured that some members of the burial population may have been migrants from disparate regions; however, only nine individuals have values indicating a nonlocal origin and just 18

individuals demonstrate marked geographic mobility across their lifespans. Total diet stable carbon isotopes values indicate mixed C₃ and C₄ resource consumption for all population members throughout their lifespans commensurate with complementary contemporary studies. This preliminary research contributes to the emerging stable isotope dataset for this territory in Spain and constitutes some of the primary data related to the medieval period in Navarre.

FitzPatrick, Mackinley (Harvard University)

[39] *What Good Is a Broken Cord? Beyond the Study of Complete Inka Khipus*

The analysis of Andean khipus (or quipus)—knotted cord record-keeping devices, best known for their use by the Inka Empire (ca. 1400–1532)—presents researchers with a unique challenge, as some believe these objects hold the potential for encoding information akin to writing. Consequently, khipus are often treated as texts or documents to be deciphered, leading to a strong emphasis on recording complete khipu specimens. While the continued study of complete khipus will undoubtedly advance research, this paper considers the usefulness of fragmentary khipus. What can be salvaged from broken, dispersed cords whose “textual” context has all but been lost? The goal is to demonstrate the utility of analyzing both complete and fragmentary khipus as we would any other artifact, by investigating material, structure, and general *chaîne opératoire*. Specifically, this paper presents the analysis of fragmentary Inka-style khipus and loose khipu cords from around Laguna de los Cóndores in the highland jungle of Peru. By broadening our approaches to khipu analysis, we will not only further our understanding of the khipu code but also the people who made and used this ingenious fiber technology.

FitzPatrick, Mackinley [327] see Robles, Erika

Fitzpatrick, Scott [240] see Durga, Ricky

Fitzpatrick, Scott [288] see Giovas, Christina

Flad, Rowan (Harvard University), Yiting Liu (Wuhan University), and Xiaoge He (Peking University, Harvard University)

[279] *Elephants in Bronze Age Central China: Megafauna/Human Relationships as Seen through Material Culture*

Elephant ivory in the form of unmodified tusks, partial tusks and ivory carvings as well as elephant iconography in bronze artifact forms and decorations reflect a set of engagements with this charismatic megafauna taxon during the Bronze Age in China. This paper presents various examples of elephant ivory and elephant iconography from Bronze Age contexts and suggests that the materiality and materialization of megafauna provides an important window on human–nonhuman animal relations throughout human history.

Fladd, Samantha (Washington State University), Sarah Oas (Archaeology Southwest), and Emily Van Alst (Washington State University)

[293] *Creating Histories through Collections: Native American Women and Museum Spaces*

Museums, along with broader discipline of anthropology, are undoing significant ethical shifts as the field confronts the legacies of colonialism. In addition to rethinking how we make exhibits, label materials, and approach repatriations, we are also increasingly considering how collections were formed and their implications for whose stories were deemed worth telling. An important issue when dealing with Native American collections in North America is the intersection of colonialism and sexism and the ways this intersection may have underemphasized or erased the experiences of women in the past and present. In this paper, we address the place of women’s histories in Native American museum collections in three ways. First, we consider the choices made by field archaeologists and museum professionals in the creation of collections, specifically what was collected and how it was catalogued. Second, we review the treatment of materials once they are on the shelf to assess additional care practices. For instance, ground stone is admittedly large and heavy, but do they receive the same treatment as other bulky materials associated with men and political power? Finally, we advocate for the expansion of cultural care practices to ensure items associated with women’s histories are recognized moving forward.

Fladd, Samantha [385] see Oas, Sarah

Fladeboe, Randee [87] see Corl, Kristin

Fleisher, Jeffrey [80] see Fenn, Thomas

Fleming, Elijah (University of Minnesota, Duluth), Erin Keenan Early (University of Texas, Austin), Tim Shanahan (University of Texas, Austin), and Adam Rabinowitz (University of Texas, Austin)

[215] *Limitations and Challenges of Sex Determination Methods for Archaeological Human Remains*

Recent advances in molecular archaeology have complicated osteological methods of determining biological sex from human skeletal remains. Genetic and proteomic approaches are increasingly applied in bioarchaeology, and comparative studies suggest that these approaches are more accurate than osteological analyses. They can also identify biological sex in juveniles and infants, which is important for the reconstruction of ancient demography. The proteomic analysis of amelogenin for sex determination has proven particularly useful as a nondestructive alternative. But nondestructive methods produce lower amino acid sequence coverage, leading to conflicting results between proteomic and genomic analyses. We applied multiple methods of sex determination to individuals from a Roman period necropolis at the site of Histria in Romania, where more than 250 burials have been excavated, including many children. To develop a reliable approach to sex determination at the site, we conducted nondestructive proteomic analysis on teeth from 21 individuals and compared our results to osteological analysis by two bioarchaeologists, and to genomic analysis of eight of the 21 individuals. Six individuals were excavated in the 1950s; the others were excavated between 2018 and 2022 by the Histria Multiscalar Archaeological Project. This project highlights the cost-benefit analysis of destructive versus nondestructive methods in archaeological assessments.

Flensburg, Gustavo [60] see Martinez, Gustavo

Fleskes, Raquel [316] see Palacios, Horvey

Flores Bedregal, Eliana [182] see Capriles, José

Flores-Blanco, Luis (ASU), Jelmer Eerkens (University of California, Davis), Mark Aldenderfer (University of California), and Randy Haas (University of Wyoming)

[117] *A Plant-Based Diet Predominated among the Earliest Complex Societies in the Titicaca Basin, 5.3–3.0 cal Ka*
Current evidence from the Terminal Archaic and Early Formative periods of the Andean Altiplano indicates the use of a variety of resources within human subsistence economies, including plants, terrestrial animals, and lake resources. This period is significant in comprehending the origins of the neolithization process in the Andean Altiplano, situated at an elevation of 3,800 m asl. To test this varied-subsistence model, we analyzed the stable isotope chemistry ($\delta^{13}\text{C}_{\text{collagen}}$, $\delta^{13}\text{C}_{\text{apatite}}$, $\delta^{15}\text{N}_{\text{collagen}}$) of human bone samples from 16 individuals from the sites of Kaillachuro and Jiskairumoko (5.3–3.0 cal ka). This analysis allowed us to probabilistically recreate the food patterns of these individuals. Bayesian mixture models utilizing isotope chemistry indicate that C_3 plants were the primary component of the diet, representing on average 80% of the diet. These findings suggest a more plant-specialized diet than the original model suggests, updating our understanding of the subsistence practices of those who began living in more permanent villages and built some of the earliest mound forms in the Titicaca Basin. This suggests that later intensive agricultural economies of the Formative period were founded on a subsistence system that was already plant dominant during the Terminal Archaic.

Flores-Blanco, Luis [182] see Hall, Morgan

Flores-Fernandez, Carola (Adolfo Ibañez University, Chile), Emanuela Cristiani (Sapienza University of Rome), Gabriela Covarrubias Ale, and Giuseppe San Juan

[56] *Shell Fishhooks from Chile: Technological Knowledge and Tradition of Coastal and Maritime Societies along the Pacific Coast of South America*

The use of hooks made of shells is a practice carried out by the first fishers along the Pacific Ocean. Evidence of these artifacts is found on coastal sites with antiquities up to 11,000 years before present. The study of

hook manufacturing techniques is one approach to study first fisher societies. Each stage of hook production is the result of technological and ecological knowledge about the raw material, habitat to explore, and desired prey. In this way, the study of shell fishhook manufacture marks allow us not only to deepen our knowledge on these artifacts but also on the logic and knowledge of ancient fishing and artisanal societies. In this study we present the results of analysis done on archaeological shell fishhooks from several sites along the north coast of Chile with dates between 8000 and 4000 years cal BP. Through a detailed description of striation characteristics such as direction, width, length, and density, among others, we aim to compare techniques and intensity of work and explore how shell fishhooks were made during the Mid-Holocene along the Chilean coast. As rich evidence of shell fishhooks is found around the Pacific coast, we also proposed some guidelines for wider comparative studies.

Flores-Fernandez, Carola [56] see Ainis, Amira

Flores Manzano, Carlos (Yale University)

[335] *Recent Lidar Findings in El Salvador: Sites' Current Status and the Future*

Recently, several archaeological sites have been identified using lidar in El Salvador, but many are endangered by urban development, looting, and a lack of political support. Numerous other sites remain unidentified, as they are still buried beneath volcanic deposits. This research seeks to highlight the richness of El Salvador's unexplored archaeology and emphasize the importance of identifying these sites and conducting proper research to better understand population dynamics and cultural changes that occurred during prehispanic times in Mesoamerica.

Flores Manzano, Carlos [335] see Kaplan, Jonathan

Flores Mendía, Sheila (Proyecto Arqueológico Cuenca Mirador)

[383] *Consideraciones para la preservación de la Cuenca Mirador y los pasos a declararlo patrimonio mundial de la humanidad*

La Cuenca Kárstica Mirador-Calakmul es una región en donde aún se encuentra naturaleza y fauna entrelazada con las evidencias fuertes del pueblo Maya originario, de características auténticas e integrales. Esta área, con su principal sitio arqueológico El Mirador, ha sido objeto de investigaciones por varias décadas, y demuestra las cualidades superiores de alto rango cultural y natural. El sistema cultural y natural lleva los criterios de UNESCO con valor excepcional y universal y el área se cuenta con criterios como: (1) "Representar una obra de arte del genio"; (2) "Aporta un testimonio único o al menos excepcional sobre una tradición cultural" y "ejemplo representativo de procesos ecológicos"; La cantidad de criterios relevantes indica que todo el sistema cultural y natural merece ser conservado y protegido en forma permanente con el objetivo de una nominación a patrimonio mixto de la humanidad. Tal asignación ayudaría a preservar tanto los vestigios culturales como la flora y fauna de la región, protegiéndolos de la devastación de bosques durante la época de incendios y la tala de madera, así como de la ampliación de la frontera agrícola y el saqueo de sitios arqueológicas.

Flynn-Arajdal, Yasmine, Christina Halperin (Université de Montréal), Jean-François Hélie (UQAM), Carolyn Freiwald (University of Mississippi), and Katie Miller Wolf (University of West Florida)

[194] *Becoming Maya: Identity Production through Weaning and Early Childhood Food Consumption at the Archaeological Site of Ucanal, Petén, Guatemala*

One of the critical processes in the shaping of identity in any society is the breastfeeding and early childhood food consumption practices that help define stages of infancy, age, gender, regional, and cultural senses of self. An important rite of passage in childhood is weaning, a process that includes the gradual removal of the mother's milk as well as the introduction of solid foods. In the Maya area, initial studies of weaning have suggested that this process may occur around the ages of 2–4 years old. Regional and temporal variability in the weaning process in precolonial periods, however, is lacking to better understand this important aspect of childhood in the archaeological record. This paper presents the results of carbon and nitrogen isotope analyses on adult and children's teeth from the Terminal Classic Maya site of Ucanal, Petén, Guatemala, to

provide information on changes in diet during early life.

Foe, Aldo (University of Illinois Chicago), and Kendall Hills

[333] *Islamization and the Construction of Landscape of Care in Early Modern Period Java, Indonesia*

This paper argues that the adoption of Islam, and specifically the practice of welfare economy generated by Islamic philanthropy (*sadaqah*), created a new landscape of care in Early Modern period (fifteenth–nineteenth century) Java. As a nexus for the disbursement of social services, mosques represent the largest public investments made by Islamic polities. Being included or excluded from care activities thus transforms people into political subjects. Mosque materiality— location, form, layout, and size—therefore becomes an observable proxy for these political and economic power relations. The utilization of Social Network Analysis on mosque architecture allows for an examination into how each Muslim community relates to the larger networks of care across Java and the uneven development of care infrastructures that emerged as a product of local-colonial political struggles. Small, community mosques funded through grassroots efforts or small donors emerged in the absence of state and colonial investments, which later became potential sites of resistance against colonial rule.

Foe, Aldo [379] see Feltz, William

Foe, Aldo [379] see Hamdan, Emadeldeen

Foe, Aldo [379] see Reid, David

Fogle-Hatch, Cheryl (MuseumSenses LLC & Ability Project, New York University)

[98] *Tactile Media in Museum Exhibits Increases Accessibility for Everyone*

Objects that are exhibited at museums are usually presented visually, behind glass, or roped off. This practice excludes visitors who are blind, and it deprives sighted visitors of the benefits of learning through touch. Current research demonstrates the advantages of tactile exploration. For example, (Sweetman et al. 2020), found that sighted museum visitors could recall more details about the objects that they had handled when compared with those that they had only seen behind glass. This paper makes the case for producing tactile media, 2.5-dimensional raised line drawings and 3D models, which can be explored by touch and by sight. This ensures that both blind and sighted visitors can experience the rich content on exhibit in museums. I will present two case studies of exhibits that use tactile media to explain archaeological topics. The first case study is a prototype traveling exhibit of 3D-printed replica projectile points from the Maryland Archaeological and Conservation Laboratory. The second case study is the Founding Fossils exhibit at the Peale Museum in Baltimore that reproduces fossils collected by early American leaders in a 3D-printed format making them accessible to everyone regardless of their visual acuity.

Folan, Lynda [349] see Gunn, Joel

Folch, Ramon (SHESC, Arizona State University)

[171] *Social Impact of Ethnoarchaeological Research on Ceramics in the Comitán Region, Chiapas, Mexico*

This work focuses on the social changes observed after five years of studying pottery making in the Eastern Highlands of Chiapas. Pottery making among the descendants of Tojolabal Maya is documented to compare techniques and materials used in protohistoric period (1500–1600) wares with modern ones. During this research we established close relationships with potters, their families, and local people interested in local crafts and identified social problems affecting the survival of the craft. We teamed up with local artists and teachers to educate the public on the potter's work and their history and to increase the price of pottery to fairer standards. Working alongside the potters to organize pottery fairs and exhibitions also led to unexpected findings, as our interactions became much closer, we learned of the problems with clay mining and the increasing privatization, historical trauma that has affected potters, and detected a much richer universe of pottery uses including colonial and modern innovations. The goal of this presentation is to share with colleagues how the process of establishing a successful pottery fair could inspire similar applications in their workplaces across the world.

Follensbee, Billie (Missouri State University)**[378]** *Mirror Realities: Reflections on Highly Polished Formative Period Objects*

A plethora of recent investigations have explored the identification, composition, manufacture, purposes, and meanings of Mesoamerican mirrors. These studies purport that the earliest mirrors were made of mica, dating as early as 1650 BCE, followed in the Early Formative period by mirrors of iron ores such as magnetite, hematite, ilmenite, and pyrite, and in the Classic and Postclassic period by obsidian mirrors and possibly pools of water, or even mercury. Further research suggests that Mesoamerican mirrors served as high-status ear, headdress, pectoral, and lower back ornaments; were likely used for magnification and self-contemplation, starting fires, elite gifting, and ritual divination; and served as eyes in sculpture. Proposed ritual meanings of mirrors include representing flowers, eyes, faces, caves, supernatural portals, fire, water, webs, shields, the sun, and the world. Nevertheless, a careful rereading of the site excavation reports reveals that still more remains to be explored regarding mirrors, particularly for the Formative period. Reanalysis of reflective artifacts suggests that more types of early mirrors were produced in different materials than currently recognized, and their forms suggest that they served a variety of purposes—some functions as of yet unconsidered, while others foreshadow functions that mirrors assumed in later Mesoamerican cultures.

Fontana, Giacomo (Texas Tech University)**[341]** *The Spatial Structure of a Pre-Roman Highland Fortified Landscape*

This paper presents a transferable approach developed to study the highland fortified landscape of the pre-Roman Samnite society during the first millennium BCE in central Italy. It integrates extensive primary data acquisition through lidar-based remote sensing with spatial statistics to identify the subsistence strategies and cultural reasons behind the structuring of the mountain landscape, thereby providing new data to interpret the sociopolitical organization of Samnite society. Lidar was employed to create a new, more representative dataset of hillfort sites across 15,300 km² of the Apennine region, addressing legacy and recovery biases. Point process models were then used to investigate a series of environmental and cultural covariates, combining data on elevation and topsoil properties at a European scale. These were integrated with the study of clustering or dispersion in the settlement pattern to highlight possible spatial hierarchies among the sites. Together, these techniques and fresh evidence shed new light on the nonurban character of Samnite society, contributing to the deconstruction of urban-centric biases in the traditional historical narrative and instead highlighting the importance of pastoralism in the creation and structuring of this Mediterranean highland fortified landscape.

Fontenla, Ruth [65] see Blom, Deborah

Forbes, Sophie, Carey Garland (University of Georgia), and Victor Thompson (University of Georgia)**[87]** *Five Thousand Years of Oyster Harvesting on Ossabaw Island, Georgia: A Sclerochronological Analysis*

This research project seeks to understand how Indigenous and postcontact inhabitants of Ossabaw Island harvested a key coastal resource over 5,000 years from the earliest year-round habitation during the Late Archaic (ca. 3000 BCE) to the Plantation period (ca. AD 1850). Here we present the results of incremental oxygen isotope analysis on eastern oysters (*Crassostrea virginica*) from the Hokfv-Mocvse Shell Ring, Bluff Field, Finley's Pond, and South End sites. This method provides a way to determine if oyster harvesting patterns changed through time via people's preference for collection during specific seasons as well as their selection for different habitats of harvest. Comparison of this study with others in the region show that oyster harvesting primarily in colder months and extensive oyster harvesting across estuarine environments is common at Indigenous sites throughout the Georgia Bight from the Late Archaic into the Mississippian. Conversely, during the Plantation period, enslaved individuals harvested oysters from the spring and winter and likely from a single high salinity environment.

Forcier, Matthew (FEMA)**[334]** *A Methodology for the Visualization of 3D Petroglyph Data*

Rock markings have long captivated the public imagination. More recently, the archaeological field has witnessed a renaissance in rock-marking scholarship as researchers recognize both the continued importance

of these features to descendant communities and their potential to inform our understandings of antiquity. Yet, attempts to engage with this content are complicated by the immense challenge in delineating the boundaries and details of petroglyphs. The subjective methods used to record and present these features often result in disparate representations of the same sites, and from their widely divergent starting points scholars have unsurprisingly arrived at antipodal interpretations. While highly accurate, 3D recording techniques are increasingly applied to the documentation of rock markings, we still lack a comprehensive and objective methodology for utilizing the data they produce. This study presents new techniques for leveraging the data potential of 3D petroglyph scans in the creation of objective visualizations of rock markings. It outlines and demonstrates a process of uniform manipulations performed in CloudCompare, a free 3D modeling software, for the purpose of achieving improved visual contrast of petroglyphs. The methodology presented has the capacity to make previously unidentified markings visible and may prove applicable to other archaeological problems, such as reading eroded gravestones.

Ford, Anabel (MesoAmerican Research Center, UCSB), and Sukanya Sharma (Indian Institute of Technology Guwahati)

[171] *Experimental XRD, FTIR, and EDX Analysis of Preclassic Maya Pottery of El Pilar*

Our experimental analyses of five Middle Preclassic Maya pottery sherds were performed using XRD, ATR-FTIR, and FESEM-EDX. The study indicated that the samples can be divided into two groups associated with ceramic paste types. Mars Orange sherds made up Group 1 and small jars made up Group 2 samples. XRD separated groups by quartz and calcite. FTIR identified an Si-O vibration peak of quartz, Al-O-Al bending vibration peaks of illite, a CO₃ peak of calcite, and Fe-O bending of hematite. This confirmed the presence of quartz, illite, and hematite in samples of Group 1 and of calcite, quartz, illite, and hematite in samples of Group 2. The EDX experiments showed a higher percentage of Si and Al in samples of Group 1 and Si and Ca in Group 2. The XRD, ATR-FT-IR, and SEM-EDX results concurred with each other and indicate that Group 1, including the Mars Orange samples, was of non-calcareous origin while Group 2, including the small jars, was of calcareous origin. In addition, the firing temperature of the five samples was estimated to be in the range of 600°C to 700°C based on the presence of illite.

Ford, Anabel [100] see Horn, Sherman

Ford, Anabel [315] see Tran, Justin

Ford, Emily [68] see Sain, Douglas

Ford, Paige (Arkansas Archeological Survey)

[33] *What Follows Is True: Graphic Novels and Nonfictions as Tools for Co-creative, Community-Engaged, and Intentional Archeological Outreach*

[WITHDRAWN]

Forker, Hannah, and Matthew Howland

[322] *Preliminary: The Native American Founded Boarding School*

This poster describes preliminary historical research into the Roe Cloud Institute, a Native American boarding school located in Wichita, Kansas, that operated from 1915 to 1935. Unlike other boarding schools at the time, this school was Native American founded and did not have the goal of stripping students of their Native heritage. Rather than focusing on taking in young children like other boarding schools, the Roe Cloud Institute focused on admitting high school and college age students. The primary goals of the institute were the promotion of higher education among Native American youths and promoting young Christian leaders within the community. Located at 3500 E 21st Street, Wichita, KS, the institute consisted of several dormitory buildings and other facilities for the students' education and care; this eventually included classrooms and buildings related to work programs. However, the location and status of the original buildings are unknown, as the site has been repurposed as a church and cemetery. The historical research described here aims to connect written records of the institute's operations with existing spatial and material remains at the site, in order to understand the extent to which archaeological investigations can be conducted collaboratively with stakeholders in the community.

Forsyth, Donald [383] see Martinez, Gustavo

Fortin, Julien [381] see Clark, Loren

Forton, Maxwell (Binghamton University)

[122] *Homesteads of the Mimbres: Surveying a Multicultural Historic Landscape*

Over the summer of 2024, Archaeology Southwest's Preservation Archaeology Field School surveyed the historic NAN Ranch in southwestern New Mexico in conjunction with the University of Arizona and Western New Mexico University. Located in the Mimbres River Valley, NAN Ranch is famous for the extensive collection of Classic Mimbres (CE 1000–1130) ceramic vessels excavated from a large Mogollon pueblo by Texas A&M University between 1978 and 1989. The legacy of this collection continues to dominate narratives of NAN Ranch and the greater Mimbres region. As part of their field school training, students were given the opportunity to resurvey portions of NAN Ranch, locating and documenting a wide range of previously unrecorded sites. This included five well preserved historic homesteads dating from the 1880s to 1940s. These homesteads were settled by families from a variety of ethnic backgrounds, with artifacts at each site reflecting on the lives of these early farmers and ranchers. This includes objects of personal adornment, expressions of cultural identity, and integration into national economic systems. While archaeological research has largely focused on the Classic Mimbres component of NAN Ranch, our field school shed light on the rich multicultural landscape of early homesteaders in the Mimbres River Valley.

Forton, Maxwell [291] see Podzimek, Faithleigh

Foster, Cheryl (Louisiana State University), Heather McKillop (Louisiana State University), and E. Cory Sills (University of Texas, Tyler)

[283] *Digging to the Core: Sea-Level Rise at the Ek Way Nal Salt Works, Punta Ycacos Lagoon, Belize*

Excavations in 2022 were carried out at Ek Way Nal, a submerged ancient Maya salt works in Punta Ycacos Lagoon in southern Belize in order to extract a 1.7 m-long sediment column for examining the relationship between the ancient Maya settlement at the site and sea-level rise during the Late and Terminal Classic periods (550–900 CE). Samples from the sediment column were analyzed using loss-on ignition (LOI), a process of burning sediment at high temperatures to assess its organic content. Selected samples were sorted using a microscope to determine the specific contents of the samples. The results of the LOI study indicate that the sediment is highly organic. Microscopic sorting indicates that the sediment is red mangrove peat. Red mangrove peat is a proxy for sea-level rise. The results of this study are compared with others from the Paynes Creek Salt Works to evaluate sea-level rise in Punta Ycacos Lagoon, as well as elsewhere in the Maya area. Mangrove sediment cores are useful in paleoenvironmental reconstructions when traditional methods (e.g., microfossil analyses) are not possible due to the highly acidic sediment.

Foti, Peyton

[125] *Comparative Analysis of Food Production, Waste, and Socioeconomic Dynamics in Red Light Districts and Brothel Sites across Three Port Cities during the American Industrial Revolution (1850–1910)*

A comparative analysis of brothel sites and red-light districts in three major port cities during or around the period of the American Industrial Revolution. While this paper will focus primarily on the site Storyville in New Orleans, Louisiana, both Five Points in Manhattan, New York, and Hell's Half Acre in Los Angeles, California, will be used as reference points for comparison. This analysis examines faunal data to provide insight on food production, waste, economic factors, and socioeconomic dimensions at these sites. The selection of these three cities as case studies is motivated by their geographical locations as bustling port cities. This allows for an examination of the transportation networks of food commodities within the United States and from international sources through these port facilities. Utilizing a comparative approach, this analysis seeks to discern commonalities and distinctive characteristics among these red-light districts situated in diverse locales. I aim to uncover the relationships between urban sex trade, food consumption, and broader societal contexts. In addition to highlighting food distribution and sourcing and the potential implications of racial prejudice on food waste practices, this research also seeks to illuminate the resilience, adaptability, and perseverance of sex workers in the face of challenging circumstances.

Fouéré, Pierrick [378] see Queffelec, Alain

Fournier-Crosato, Jonathan [341] see Le Moine, Jean-Baptiste

Fowler, William (Vanderbilt University)

[335] *Classic to Postclassic Eastern Nahuatl Movements from Central Mexico to Southeastern Mesoamerica*
According to Nahuatl linguists, especially Dakin and Phraao, Proto-Nahuatl split into Eastern Nahuatl (EN) and Western Nahuatl (WN) dialects as early EN groups moved from central West Mexico into the Teotihuacan Valley. Many specialists argue that EN was the dominant language of Teotihuacan during the Classic period. Archaeological and linguistic evidence indicates Teotihuacan-related EN (TREN) movements to Guerrero, the Huasteca, the Sierra de Puebla, and the southern Gulf Coast by around 300 CE. TREN militaristic intruders of the I I Eb episode (378 CE) in the Petén lowlands are well-known. TREN groups also moved southward across the Isthmus and down the Pacific slope of Chiapas and Guatemala during the fourth and fifth centuries. After the collapse of Teotihuacan around 550 CE, Epiclassic EN groups moved from the Bajío into the Mezquital Valley to establish Tula Chico and later Early Postclassic Tula Grande from which a series of Toltec-related, large-scale migrations occurred, mostly following earlier routes and patterns. Large-scale EN migrations into western and central El Salvador, former hinterland of the Lowland Maya state of Copan which expired around 830 CE, contributed to the establishment of several Toltec-derived EN enclaves and city-states, notably the Epiclassic to Early Postclassic urban center of Cihuatán.

Fowles, Severin (Barnard College, Columbia University)

[342] *Archeology and the Third Americans*

In 1992, Randy published “Archeology and the First Americans,” a timely analysis of archaeology’s culpability in promoting fantasy images of the Indigenous societies of North America that forced us to contend with the ideological implications of these images and the supportive role they have played in histories of land dispossession and US imperialism. Here, I revisit Randy’s classic essay, placing it in dialogue with a parallel inquiry into the images that archaeologists have constructed, specifically in the American Southwest, of a “Spanish” society and of a “colonial period” that allegedly ended when Anglos invaded in the mid-nineteenth century. The United States, of course, aggressively worked to dispossess *both* Indigenous *and* Hispano peoples of their lands. By the time of the invasions, in fact, most Southwest communities were complexly mixed and best characterized as “Indo-Hispano,” as recent scholarship in Chicano studies has emphasized. Nevertheless, it was in the ideological juxtaposition of three discursive categories—innocent First Americans (Indigenous communities), failed Second Americans (Spanish settlers), and righteous Third Americans (Anglos)—that the US imperial project asserted its legitimacy. And in our archaeological accounts of the past, I suggest, we, as a discipline, have largely complied.

Fowles, Severin [228] see Pugh, Erin

Fox, Em

[276] *(Un)equal in Death: Historical-Archaeological Analysis of Inequality in Nederland Cemetery, Colorado*
The study of historic cemeteries allows for comparisons between material data and historical sources including wills, censuses, and death records. This additional context enables more informed examinations of the ways in which social inequalities are reflected through cemetery practices. This paper uses both material and historical sources to investigate the expression of social status across grave markers at the historic Nederland Cemetery in Nederland, Colorado, during the period of 1873–1920. Socioeconomic factors such as age at death, gender, and occupation were not found to be correlated to differences in grave markers, suggesting that mining communities may have masked lived inequalities in their mortuary practices. This analysis adds valuable information to the ongoing scholarly conversation regarding ideals of egalitarianism on the Western Frontier. In addition to contributing to archaeological research on American cemeteries and life on the Frontier, this project aimed to benefit the descendant community of Nederland by creating new photographs of grave markers and updating genealogical websites to paint clearer pictures of the individual lives of those whose grave markers were studied.

Fox, Griffin [217] see D'Agostino, Andy

Fox, Kara (University of Montana)

[129] *Exploring Salmonid Subsistence and Traditional Fishing Practices through aDNA at Housepit 54, Bridge River, British Columbia, Canada*

Fishing was an essential element of the subsistence regimes practiced by Indigenous human groups of North America's Pacific Northwest region. This poster overviews research into the use of ancient DNA (aDNA) to identify Pacific salmonid species pursued by occupants of Housepit 54 at the Bridge River site, British Columbia. Samples of archaeological fish vertebrae were selected from eight out of 15 generational floors to gain a general understanding of the salmonid species distribution during Bridge River 2 (1600–1300 cal BP) and Bridge River 3 (1300–1000 cal BP) periods. To date, 49 archaeological fish vertebrae underwent aDNA analysis, resulting in 45 samples identified as Sockeye salmon (*Oncorhynchus nerka*) and the other four as undetermined. In addition to the presentation of empirical results, this poster also reviews the latest methodological advancements designed to enhance our understanding of past fishing practices.

Frachetti, Michael (Washington University)

[49] *Eurasian Discoveries in Bronze: An Archaeological Tribute to Vincent Pigott*

Bronze technology transformed a range of Eurasian societies in prehistory, shaping the economic, political, and symbolic landscape for millennia. In Central Eurasia, tin-bronze (in particular) held a particular role. This paper will explore the innovation and integration of tin-bronze in Central Eurasian societies in the late third and second millennia BCE and explore how the resources and technologies set the stage for long-term social geographies of extraction and trade. In the context of this theme, we will delve into the extensive contribution made to this field by Vince Pigott and celebrate the decades of impact his thinking has had on this dynamic field.

Frahm, Ellery [235] see Keller, Hannah

France, Christine [376] see Sugiyama, Nawa

Francis, Kristen [298] see Bryce, William

Franco, Nora (Universidad de Buenos Aires; CONICET), Kelly Graf (University of Kansas), and Ted Goebel (University of Kansas)

[382] *Human Occupations at the Southern Boundary of the Deseado Massif (Patagonia): Results of Ongoing Excavations at La Gruta 1 and 3*

The arid Deseado Massif, located in central Patagonia east of the Andes Mountains, has a high concentration of early human occupations. We present the results of ongoing excavations at La Gruta 1 and 3, two rockshelters located near the massif's southern boundary in Santa Cruz province. Evidence obtained from radiocarbon analyses supports human occupation of this space during the Pleistocene–Holocene transition and Early Holocene, although geoarchaeological studies indicate some disturbances to the cultural deposits. Lithic analyses suggest short-term occupations of mobile hunter-gatherers, and faunal analyses indicate a reliance on guanaco and possibly an extinct wild *Lama*. Remains of Mylodontidae may also be the product of human exploitation. Sedimentological analyses indicate climate during the Pleistocene–Holocene transition was more humid than today, but records from both rockshelters show signs of a period of local abandonment of these spaces during the earliest Holocene, with later occupations dating to about 9500–9000 ¹⁴C BP or later. We consider these results in the regional paleoenvironmental and archaeological contexts of Patagonia.

Franco Chávez, E. Williams, and Edith Cadmir Champi Ojeda

[386] *Análisis de la cerámica del Periodo Intermedio Tardío del sitio Isqomoqo (Yanahuara, Urubamba)*

Presentamos los resultados de los trabajos de prospección y análisis de cerámica del Periodo Intermedio Tardío, desarrollados en el sitio Isqomoqo, ubicado en la parte oeste del Valle Sagrado. Este periodo es asociado al estilo decorativo Killke y a menudo los investigadores han identificado este estilo en distintas áreas de la región del Cusco. Recientes investigaciones en el Valle Sagrado, Maras y Chinchero, muestran la

existencia de grupos sociales autónomos e independientes del Cusco. Por esta razón, el objetivo de esta investigación es caracterizar la cerámica del Periodo Intermedio Tardío procedente de Isqomoqo, enfocándonos en la descripción y análisis de cuatro variables: Pasta, acabados de superficie, formas y decoración. Lográndose identificar dos estilos cerámicos que difieren a la cerámica Killke: Cueva Moqo y Piuray. Estos presentan algunas semejanzas decorativas y formales, pero también existen claras diferencias en relación a características tecnológicas y estilísticas, en base a este análisis, se puede plantear de forma tentativa una distribución geográfica de estos: El estilo Cueva Moqo con mayor presencia en Urubamba, Ollantaytambo y Maras; y el estilo Piuray, distribuido ampliamente alrededor de la laguna Piuray, descendiendo por la quebrada de Urquillos hasta Huayllabamba.

Frandsen, Kristina (Museum of Idaho), and L. Suzann Henrikson (Museum of Idaho)

[372] *The Owl Cave Bison Bone Bed: Evidence of an Early Holocene Mass Kill*

Previously published research on Owl Cave focused on the Pleistocene mammoth remains found in the deepest layers of the cave (Layer 18), glossing over the dense bison bone bed in Layer 16. Since the collection was moved to the Museum of Idaho in 2019, it is actively being recatalogued, rehoused, and analyzed. Although the bone bed was initially suspected of being a marrow processing locality, the large number of complete long bones in the assemblage and the distribution of cut marks do not support this hypothesis. Instead, the taphonomic signatures appear to resemble “gourmet” butchering patterns similar to terminal Pleistocene / early Holocene sites on the Great Plains. We are currently examining the horizontal and vertical distribution of cut marks, percussion breakage, and green bone fractures represented in Layer 16 using a newly developed database. Although there are still many bones to be catalogued and examined, the current evidence suggests that over 100 bison were involved in a single mass kill event on the Eastern Snake River Plain during the early Holocene.

Franklin, Jay (Logan Simpson), M. Steven Shackley, and Allen Dart (Old Pueblo Archaeology Center)

[326] *Obsidian Sourcing and Lithic Assemblage Formation at the Sabino Canyon Ruin, Eastern Tucson Basin, Arizona* Old Pueblo Archaeology Center’s research from 1995 to 2001 at the Sabino Canyon Ruin, AZ BB:9:32(ASM), in the eastern Tucson Basin revealed that the Hohokam occupation of the site spanned from about 1000 to after 1325 CE. The multicomponent site features late Rincon and Tanque Verde phase structures including pithouses, four aboveground adobe and rock-walled housing compounds, and a fifth compound with structures and a probable public plaza. We investigate livelihood and regional interactions through toolstone provenance. While most materials appear to derive from local stream gravels, XRF analysis of obsidian artifacts indicates interactions with regions to the east, a pattern unusual for the Classic period in the Tucson Basin. This includes obsidian from the Superior, Arizona, source and likely Gila River Quaternary gravel secondary deposit obsidian in the Safford Valley, also not common at Hohokam Classic period sites. No western or northern Arizona obsidian sources are represented in the assemblage. We explore obsidian provenance within the context of lithic assemblage formation at the site.

Franklin, Jay [189] see Cureton, Travis

Franklin, Lauren (University of Arizona), and Stance Hurst (Museum of Texas Tech University)

[227] *Apples to Oranges: Measuring the Efficacy of Apple’s Object Capture Photogrammetry API for 3D Modeling in Archaeology*

The creation of 3D models using photogrammetry has become an increasingly important aspect of archaeological investigation and outreach, allowing researchers to ask deeper quantitative questions and reach wider audiences. As technological advancements continue, it is crucial to assess how effectively photogrammetry applications are producing research-quality 3D models. In this study, we evaluate the efficacy of Apple’s Object Capture photogrammetry API. Our findings indicate that Object Capture is not only a viable option to create research-quality models but also effective for a variety of natural landscapes and cultural objects. Most notable is this application’s efficiency and ease of use when compared to other photogrammetry applications. Object Capture has little need for masking backgrounds within images and creates models with fewer than 100 images in under 10 minutes, facilitating a faster modeling workflow.

Franklin, Sasha (Michigan State University), and Gabriel Wrobel (Michigan State University)**[64]** *Online Learning and Digital Cultural Heritage in Belize*

Although archaeology will always be a hands-on field, the future is digital. This poster reports the results of an applied research project that utilized photogrammetry and GIS software to create an archaeology education tool on ArcGIS StoryMaps. Sample lessons within the StoryMap, created in consultation with the Belize Ministry of Education and Belize Institute of Archaeology, can be implemented to teach Maya history, archaeological methods, and digital techniques. This project aims to broaden the population involved in archaeology, namely reaching students and descendant communities. Further, the use of digital resources allows artifacts to transcend the confines of museum and repository walls.

Fredrickson, Kurt**[317]** *An Archaeological Investigation of Clovis Blade Technology at Thunderbird (44WR11), a Paleolithic Stratified Site of the Flint Run Complex, Warren County, Virginia*

The Flint Run Complex in Northern Virginia contains not one, but several Late Pleistocene open-air stratified Paleoindian sites. Thunderbird (44WR11) is the main site within the complex with evidence of human occupation in the region at around 9990 BP. Numerous tools were recovered which fit the Clovis technocomplex and extensive analysis has been performed on bifacial technology at the site. This study performed an analysis of lithic blade production at the Thunderbird site (44WR11), which refines our understanding of localized seasonal migration and exploitation of local resources among Paleoindian people of the Shenandoah River Valley. Confirmation of blades and their use would indicate a more robust exploitation of the region's natural resources and reinforce previous assessments of the importance of Thunderbird as a sedentary seasonal base camp. This study examined 324 lithic artifacts from the site, to identify the presence of a concerted blade manufacturing technology where it was believed one did not exist. Additionally, the identification of blades at Thunderbird supports previous assertions that the site was an important refugia on a migratory pattern where scheduled resource exploitation and tool kit refurbishments took place as part of seasonal rounds.

Freeman, Jacob, Matthew Jensen (Utah State University), and Neil Dastrup (Utah State University)**[91]** *Understanding the Emergence of Alternative Social-Ecological Regimes of Food Production*

Progressive models of cultural evolution have long been criticized. Yet, archaeologists sometimes struggle to replace these models with nonlinear theories of cultural change that (1) explain the diversity of food production strategies observed over time and (2) provide propositions amenable to empirical testing. In this poster, we explore a nonlinear theory of cultural change that predicts the emergence of diverse social-ecological regimes of food production. We use the model to compare the Long-Neolithics evidenced on the Colorado Plateau, where populations integrated maize into indigenous cultivation strategies, and the Edwards Plateau in Central Texas, where populations rejected maize and invested in wild geophyte harvest during the Late Holocene. We document the similarities and differences in population growth, resource investment, and social integration in the two regions. The comparison reveals a common trajectory of change in place based infrastructure development and population growth. We speculate that common mechanisms related to social signaling and the production of surplus food by hearth groups/households may underlie the commonalities of these regions' Long-Neolithic trajectories. Conversely, the different potential productivity of geophytes in these regions may have been critical initial conditions that initiated distinct forms of food production and social-ecological incentives for adopting or rejecting maize agriculture.

Freeman, Jacob [91] see Ahmann, Alyssa

Freidel, David [169] see Tiesler, Vera

Freiwald, Carolyn (University of Mississippi), Asta Rand (Cardiff University), Christina Halperin (Université de Montréal), and Camille Dubois-Francoeur**[376]** *Late and Terminal Classic Management of Deer, Dogs, Ducks, and Other Animals: Strontium, Oxygen, Carbon, Nitrogen, and Sulfur Isotope Data Analyses at Ucanal, Guatemala*

Ucanal, Guatemala, was a Maya city in the central lowlands whose Terminal Classic population grew as other cities were abandoned. Domesticated animal species included dogs and at least one Muscovy duck whose diets show a variety of foddering strategies. An elite Late Classic worked bone deposit also shows the importance of whitetail deer, which along with humans, served as the main raw materials for the production of bone needles, awls, and other tools and ornaments. We share SEM, radiographic, and photographic images of important examples of bone debitage, blanks, and final products as we explore how humans and other animal bones were used for perforator production. Multi-isotopic systems (Sr, O, S, C, and N) of deer and other wild game show how inhabitants of Ucanal acquired animals and how their diets reflect their habitats. We compare dogs and humans, with mostly local origins, with wild game in the deposit and animals recovered from households across the site to understand how Ucanal residents managed their environment and the animals in it, and how that changed as the city grew at the end of the Classic period. *****This presentation will include images of human remains.**

Freiwald, Carolyn [188] see Angell, Emma

Freiwald, Carolyn [320] see Corey, Kasey

Freiwald, Carolyn [320] see Dubois-Francoeur, Camille

Freiwald, Carolyn [194] see Flynn-Arajdal, Yasmine

French, Jennifer (University of Liverpool), Marc Kissel, Sam Auger (Appalachian State University), and Sarah Harrison (Appalachian State University)

[42] *Infant Carrying in Early Prehistory: An Investigation into Technological Possibilities Using Ethnographic Data*
Baby slings and carriers are frequently theorized as the earliest examples of containers and containment technology, with important evolutionary implications for infant care and mobility practices. While the direct data on prehistoric infant carriers are limited, the ethnographic record of infant carrying among recent mobile hunter-gatherers can provide us with relevant insights into the technological possibilities regarding the materiality of early carriers. Here, we report on an exploratory descriptive study of the cross-cultural ethnographic data on infant carriers using the Human Relations Area Files (eHRAF) database. Data on infant carrying behaviors and technology were collated and a database created to examine any patterns, trends, and correlates in the technology of baby-wearing in recent small-scale, mobile hunter-gatherer societies. With reference to the wider Pleistocene archaeological and paleoanthropological records, we offer some initial comments on how these cross-cultural comparisons can be used to generate “expectations” surrounding the form and function of early baby carriers.

French, Jennifer [42] see Khaksar, Somaye

Freund, Kyle, Daron Duke (Far Western Anthropological Research Group), D Craig Young (Far Western Anthropological Research Group), Lucas Johnson (Nellis Air Force Base CRM), and Jennifer DeGraffenried (US Army Dugway Proving Ground)

[223] *FGV Sources of the Great Salt Lake Desert, Utah*

This presentation focuses on the geochemistry and archaeological exploitation of fine-grained volcanic (FGV) lithic sources of the greater Great Salt Lake Desert (GSLD) in northwestern Utah. Regional volcanism during the Tertiary is responsible for recurring tectonic activity and normal faulting, and this geology holds a variety of toolstone sources that were useful to people. Non-obsidian fine-grained toolstone of volcanic origin, usually referred to as FGV, is available at geochemically distinct sources to the east and west at Flat Hills, off the southern toe of the Cedar Mountains south of Dugway, and in the Deep Creek Range; they average about 60 km from the central region of the southern GSLD. By combining X-ray fluorescence characterization of these sources with a discussion of their exploitation history, this presentation provides one of the few overviews of these important resources. When combined with our knowledge of obsidian procurement and use in the wider region, this research contributes to understanding lithic conveyance zones and precontact patterns of mobility in the eastern Great Basin.

Frey, Jon (Michigan State University), Bill Caraher (University of North Dakota), and David Pettegrew (Messiah College)

[184] *The Corinthian Hexamilion: New Perspectives on Greece's Longest Barrier Wall*

In distinction to many fortifications in Greece that receive little scholarly attention, the early Byzantine wall known as the Hexamilion has been the subject of two major publications. The first by Timothy E. Gregory systematically studied the extant remains of the barrier wall snaking 8 km over the Isthmus of Corinth to show how the monument speaks to issues of historical significance beyond traditional assessments of military strategy. The second by P. Nick Kardulias presented new evidence for the structures within the fortress at Isthmia and adopted a theoretical approach that drew attention to the energy expenditures of an enormous labor force that constructed the wall and inhabited its fortress. Our paper builds on these studies by presenting new discoveries about the course of the wall at its eastern terminus and reconsidering the Hexamilion as a dynamic and totalizing social phenomenon that redefined the long-term human experiences of the region. Like other barrier walls that have been built or proposed throughout history and, indeed, even in our own times, the Hexamilion marks a site of countless smaller moments of social and transcultural exchange that far outnumbered those short-lived geopolitical episodes of military conflict by which it has typically been evaluated.

Friberg, Christina (Field Museum)

[37] *Indigenous Resilience in Uncertain Times: Integrating Community and Maintaining Relationships at Angel Mounds*

The Mississippian cultural phenomenon (1050–1450 CE) is marked by the near sudden emergence of population centers with regional networks along the Mississippi River and its tributary valleys in the late eleventh and early twelfth centuries. These societies seem to have declined as quickly as they emerged, beginning around the transition from the Medieval Climate Anomaly to the Little Ice Age around 1200 CE, which resulted in prolonged and unpredictable periods of drought and coincided with an increase in warfare throughout the Mississippian world. However, far from collapsing, resilient peoples created strategies for coping with warfare and climate change from shifting subsistence strategies to building protective palisade walls, and the reorganization of communities in increasingly constricted spaces. For over 200 years, people of Angel Mounds (12Vg1)—a fortified Mississippian (1150–1450) multi-mound center located in Evansville, Indiana—maintained exchange relationships with other Mississippian groups in addition to continuing to build and maintain mounds and plazas that served to integrate the community early on. This paper investigates the ways in which the Angel Mounds community coped with a changing climate and endemic warfare through a GIS spatial analysis of architecture, excavation data, and remote sensing survey at the site.

Fricano, Ellen, Michele Bleuze (California State University, Los Angeles), Melanie Saldana (California State University, Los Angeles), and James Brady (California State University, Los Angeles)

[104] *Delving Deep: A Skeletal Analysis of a Maya Ritual Site from the Cueva de Sangre, Dos Pilas, Guatemala*

Deposition of human remains within subterranean spaces held a special cultural significance across Mesoamerica because of the importance of the sacred, animate *Earth* in Amerindian Indigenous cosmology. The skeletal assemblage from Cueva de Sangre near Dos Pilas, Petén, Guatemala, is one such example. Though recovered during the Petexbatun Regional Cave Survey in the early 1990s, this assemblage has not been well studied until recent years. Here we present the skeletal analysis of one deposit at this site, CS9-03-1. The site was largely utilized during the Maya Late Classic period (AD 600–900). The site is located within a low cave that contains part of an interconnected riverine system which periodically floods. The skeletal elements discovered at the site CS9-03-1 include more than 100 adult and juvenile human bone fragments (54 identifiable, 50 unidentifiable). The identifiable fragments were largely adult and cranial, though notably the viscerocranium was nearly completely absent from the assemblage including bones more likely to survive like the mandible. Several elements show evidence of perimortem sharp force trauma, blunt force trauma, and postmortem modification. The types of skeletal elements present, trauma, arrangement of bones, and bone modifications strongly support the sacrificial nature of the deposition. *****This presentation will include images of human remains.**

Fricano, Ellen [104] see Prout, Michael

Friedman, Richard, and Robert Weiner (Dartmouth College)

[55] *Unveiling Ancient Roads (Ways) and the Built Environment: A Comprehensive Study of Integrating Lidar, GIS, and 3D Tools to Identify, Document, and Visualize Chacoan Roads and Cultural Landscapes*

This paper explores the vast yet intricate network of Chacoan Roads (Ways) and their surrounding cultural landscapes through the integration of advanced technologies such as lidar, GIS, and 3D visualization tools. By employing these cutting-edge methods, we strive to identify, document, and visualize the integration of the ancient pathways with the built environment that create the Chacoan Great House Landscapes. Our comprehensive approach not only enhances the accuracy of identifying and mapping these enigmatic features but also provides the building blocks for a dynamic and immersive way to understand their significance and spatial relationships. This research offers new insights into the cultural and historical context of the Chacoan roads, contributing to the broader field of archaeological studies and heritage preservation.

Fritsch, Emmanuel [378] see Queffelec, Alain

Frouin, Marine [347] see Badillo, Alex

Fruhlinger, Jacob [198] see Zimmermann, Mario

Fry, Megan (University of Florida)

[215] *Bedlam, Bags, and Burial Rites: Female Hip Assemblages in Early Medieval Britain*

During the early medieval period, burials across Britain included a wide variety of grave goods, which often signaled status and ethnicity and varied by demographic factors. This study explores objects included in female graves which have been interpreted as bags worn about the hip. A functionalist interpretation may be too simplistic for understanding these complex assemblages, as some were placed in the grave during the funerary ritual after the body was already deposited, signaling a deeper meaning behind these objects. This is especially obvious for items where the utility of the objects included within the bags is not obvious (e.g., broken objects). This indicates that these items had a great personal, social, or cultural meaning than what is evident now. Previous research has interpreted these burials as “high status,” or potentially “deviant,” which also oversimplifies the complex lives these women lived. With an emphasis on spatial analysis, these hip assemblages are explored through a lens of materiality to ascertain the more nuanced meaning behind this complex burial practice.

Frye, Elena (Indiana University of Pennsylvania)

[123] *Geophysical Investigations at the Basilica of the Sacred Heart of Jesus*

The Basilica of the Sacred Heart of Jesus, formerly known as the Conewago Chapel, is a Catholic church campus in Hanover, PA, near the Pennsylvania-Maryland border. Founded in the early eighteenth century, the basilica was the largest Catholic church in the country at the time of its founding and the current church building is the oldest stone Catholic church in the United States. Over the church’s nearly 200-year history, several buildings were constructed and subsequently demolished on the property, including the original chapel school building and a house referred to in Church records as “the Hermitage.” However, the exact location of these buildings is not known. This project utilizes a noninvasive geophysical survey, including ground-penetrating radar and gradiometer surveys, to search for the buried structural remains of these two buildings. Geophysical data are tested using targeted ground truthing to confirm the presence of structural remains based on anomalies identified in the geophysical survey and attempt to associate any structural remains identified with buildings from the church’s historical records.

Frykholm, Soren (University of Michigan), and Itzel Chagoya Ayala

[347] *Interpreting and Dating Walls from Archaeological Contexts in Oaxaca: A Discussion*

Walls encountered in archaeological contexts are notoriously difficult to date and assign function. In this talk, the authors report on two extensive, previously unknown walls from the site of Monte Negro in Oaxaca, Mexico. They discuss the possible temporality and purpose of these walls, alluding to comparable findings

from other sites in Oaxaca, with hopes of generating future discussion among the participants of this symposium.

Fuenmayor, Daniela, and Matthew Velasco (Cornell University)

[119] *Unraveling Textile Production in the Late Prehispanic Colca Valley, Peru*

Hundreds of textile fragments were collected during excavations in 2012 of aboveground funerary structures in the Colca Valley, Peru. These fragments were scattered and impossible to relate to specific individuals because of the pervasive looting of these accessible tombs as well as subsequent disturbance and exposure to the elements. Despite these limitations, textile fragments preserve valuable information about their production in the past. In this paper we detail the results of the technical analysis of 263 textile fragments from two aboveground funerary sites in the Colca Valley, Yuraq Qaqa and Sahuara, which likely pertained to different social segments and occupation periods. Data analyzed from these textiles include information about the material, weave structure, spin/ply, and decoration. Our analysis indicates that community members living in the central Colca Valley developed a shared practice of textile production during the Late Intermediate period (AD 1100–1450). From these data and the funerary contexts in which the fragments were excavated, we draw inferences about the social and economic landscapes of the people who lived and died in this region of the south-central Andes.

Fuentes, Danny [125] see Lyons, Kevin

Fuentes, Ixchel [344] see Richter, Kim

Fuentes Torres, Ulises [343] see Ruiz, Judith

Fugitt, Alexandra, Anna Bowers (Shoshone-Bannock Tribes), and L. Suzann Henrikson (Museum of Idaho)

[372] *Buffalo's Little Brother Hill: A Little Ice Bison Jump in Southern Idaho*

This study investigates whether Buffalo's Little Brother Hill (10BT2303) functioned as a bison jump using GIS analysis. To assess whether the site could have been utilized as a jump we examined the upland topography and conducted a least-cost-pathways analysis. These results indicate that three gaps or "funnels" in the basalt cliff are directly associated with a single drive lane, which would have guided bison from a milling basin to the northeast to the basalt cliff. The drive lane is linked with 19 rock cairns and two hunting blinds, similar to patterns seen in the Great Plains. AMS assays reveal that the jump was likely used at least twice during the onset of the Little Ice Age when it is likely that bison populations expanded as a result of cooler, wetter conditions.

Fujita, Harumi (INAH Centro BCS-La Paz), Amira Ainis (California State University, Los Angeles), Andrea Hernández del Villar (Universidad Autónoma de Zacatecas, Mexico), Andrea Guía Ramírez (Centro INAH BC, Ensenada, Mexico), and Alberto Calderón Vega (Centro INAH BCS, La Paz, Mexico)

[56] *Pearl Oyster Shell Fishhooks from the Cañada de la Enfermería Sureste 3 Site, La Paz Bay, Baja California Sur, Mexico*

Modified pearl oyster (*Pinctada mazatlanica*) shells, which may represent fishhooks or ornaments, were recovered from various sites on Espiritu Santo Island, Baja California Sur, Mexico, and directly dated to ~8700 cal BP. At the Cañada de la Enfermería Sureste 3 site, located just north of La Paz, 11 pearl oyster fishhooks or ornaments, including preforms, were found in excavated deposits with dates spanning the Early and Middle Holocene. Identified fish remains from these deposits are composed of 12 orders, 27 families, 10 genera, and 13 species, and mostly inhabit sandy and rocky areas and coral reefs in bays and estuaries that were likely captured using shell fishhooks, fishing spears or lances, and nets. Here we present AMS radiocarbon dates of several fragments of pearl oyster fishhooks, along with morphology, dimensions, and possible manufacturing processes. We also discuss the types of fish identified at the site that may have been captured with this fishing tackle.

Fullbright, Lana [91] see Holcomb, Cassandra

Fuller, Dorian [392] see Yang, Ying

Fuller, Reba [193] see Hull, Bryna

Fülöp, Réka [174] see Gleadow, Andrew

Fulton, Kara [324] see Mixter, David

Furlotte, Brett [382] see Rademaker, Kurt

Fusco, Marianna [103] see Spinapolice, Enza

Futty, James [183] see Wriston, Teresa

Gaddis, Katherine [321] see Ramsier, Marissa

Gaffney, Vincent (Submerged Landscapes Research Centre, University of Bradford [UK]), Simon Fitch (Submerged Landscapes Research Centre, University of Bradford [UK]), and Jessica Hale

[277] *Accessing the “Empty Quarter”: Tentative Steps toward the Peopling of Doggerland*

After more than 30 years of study, paleo-landscapes research in the southern North Sea, usually referred to as Doggerland, has moved from the status of niche interest to an increasingly strategic area of investigation. Drivers for such a development includes the need to develop coastal shelves to achieve net zero goals and geopolitical requirements for secure energy provision. The archaeological and heritage challenges of development of the coastal shelves revolve around the nature of the archaeology and a lack of adequate heritage protection in the deeper waters of the southern North Sea. There is now an imperative to explore landscapes where vital evidence for human occupation is, essentially, absent over very large areas and where access to surviving archaeology is severely limited. At the University of Bradford, a series of research projects has sought to establish broader cooperative relationships to confront such issues, and this has involved industrial stakeholders, national curators, government bodies, and heritage professionals. Most recently the European Research Council has funded Subnordica, a research collaboration to devise new approaches for paleo-landscape exploration. This paper assesses the results of previous work in Doggerland and considers where future research may lead us.

Gago-Chorén, Laura [168] see Menéndez-Blanco, Andrés

Gala, Nicholas, and Masami Izuho (Tokyo Metropolitan University)

[292] *Cultural Evolution in the Paleo-SHK and Pacific Rim: A New Approach to Human Dispersal in Northeast Asia and Eastern Beringia*

Determining the origin of the first people in North America has been an area of contention. One possible hypothesis proposes an origin on the Paleo-Sakhalin-Hokkaido-Kurile (PSHK) peninsula, stating that the numerous microblade cores and stemmed projectile points on the peninsula are similar to those found in early North American contexts. To date, this hypothesis has used chronological and technological similarities to draw this connection; we employ quantitative methods and draw on cultural evolutionary theory to test the validity of this hypothesis using Yubetsu microblade cores found throughout Northeast Asia and Alaska. Drawing on an iterative founder effect model derived from population genetics, we examine the relationship of within-group variation of these cores and their geographic distance from predicted points of origin. The results support an iterative founder effect for Yubetsu microblade cores originating on the island of Hokkaido and moving toward Alaska. The presence of this microblade core style in Northeast Asia and Alaska strongly suggests that dispersing populations carried this technology with them from the PSHK to North America.

Gallaga, Emiliano (UNICACH), and Roberto López Bravo (Universidad de Ciencias y Artes de Chiapas)

[393] *Archaeological Reconnaissance at the Northwest End of the State of Chiapas: The Juarez Municipality*

Except for a salvage archaeological project conducted in the 1990s, the northwest of the state of Chiapas is still poorly researched. This region is part of the Usumacinta River drainage and one of the most important networks in prehispanic times between the Central Depression of Chiapas with the lowlands of Tabasco. A recent archaeological reconnaissance in the Juarez municipality of Chiapas illustrated how the region was occupied in prehispanic times and probably how Zoque communities engage in interregional networks in the area.

Gallardo, Francisco [199] see Sabo, Allison

Gallareta Negrón, Tomás [171] see Bey, George

Gallinaro, Marina [167] see Mogesie, Seminew

Gallivan, Martin (William & Mary), John Henshaw (William & Mary), and Jessica Jenkins (Flagler College)

[50] *1606: Chronology Construction in the Native Chesapeake*

Constructing a chronology for the Native Chesapeake on the eve of the colonial era presents several challenges. These include a predominant focus on European settlement, fluctuations in the radiocarbon calibration curve, a scarcity of radiocarbon assays, and a tendency to view the centuries before Jamestown's founding in 1607 through an ahistorical lens. In response to these limitations, members of the Virginia Indian community have called for a greater focus on eventful Native histories for the period before European contact. To address this, we have begun building chronological models for key developments during the late precontact centuries, including the proliferation of palisaded settlements and the increased reliance on maize-based agriculture. Building on these efforts, our current project aims to use chronological models to compare and assess three historical processes that may have contributed to the rise of the Powhatan chiefdom in the sixteenth century: challenges in food production linked to megadroughts, population losses due to pandemics on the eve of contact, and a regional social movement culminating in Powhatan's relocation to Werowocomoco, the Powhatan center place. Although evidence for these developments is limited and uneven, using chronological models to compare them illuminates interpretive possibilities and identifies gaps in the existing evidence.

Gallivan, Martin [101] see Jenkins, Jessica

Gallivan, Martin [291] see Moretti-Langholtz, Danielle

Galvan Benitez, Miguel Angel

[242] *Avances en la exploración arqueológica de la Cueva de las Manitas, Oaxaca*

Este sitio se caracteriza por tener en las paredes pintura con diseños y representaciones antropomorfas, zoomorfas y simbólicas. Junto al arte rupestre, existen esculturas asociadas hechas en la roca de la cueva. El primer acercamiento al sitio, mediante excavaciones arqueológicas fue diseñado para entender el contexto de los rellenos culturales del subsuelo y su relación espacial con el arte rupestre y escultórico del entorno. En esta ponencia se presentan los primeros resultados obtenidos de las dos campañas de exploración arqueológica realizadas hasta ahora en el sitio. Se relata la metodología para la exploración de pozos, en los que se han obtenido fogones, firmes de pisos, y una incipiente arquitectura que delimita pequeños recintos o abrigos interiores; en todos se podrá observar la gran cantidad de materiales orgánicos hallados. Así mismo se describen los hallazgos líticos en el contexto. Estos pioneros trabajos nos abren la puerta para continuar con las exploraciones y trabajando con el apoyo de la comunidad, que también ha sido fundamental en el avance de este proyecto.

Ganiyu, Abiodun (University of Oklahoma), Thomas Fenn (University of Oklahoma), James Ameje (National Commission for Museums and Monuments, Abuja, Nigeria), Detlef Gronenborn (Leibniz-Zentrum für Archäologie, Mainz, Germany), and Joaquin Ruiz (University of Arizona, Tucson)

[228] *Sourcing Silver Objects from the “Royal” Burials of Durbi Takusheyi, North-Central Nigeria*

The archaeological site of Durbi Takusheyi, located in the Katsina region of northern Nigeria, was a presumed “royal” burial site which produced evidence of materials and finished goods, including silver objects, with cultures from North Africa, the Middle East, and Mediterranean through Trans-Saharan trade networks. This research aims to examine the silver objects found at Durbi Takusheyi, dating between the thirteenth and sixteenth centuries CE, to evaluate potential sources for the raw materials. Chemical analyses were carried out on the materials using electron microprobe analysis (EMPA), while lead isotope ratios were determined with multi-collector–inductively coupled plasma–mass spectrometry (MC-ICP-MS) techniques. These results show that the silver objects likely originated from two, or possibly more regions. Further comparisons of the lead isotope ratios for the silver objects from Durbi Takusheyi show strong similarities with ores from North Africa, Iberia, and Persia. The results suggest that the silver came from at least two geographically distinct regions, adding complexity to the question of how the objects might have reached Durbi Takusheyi, and requires consideration of recycling to evaluate other potential inputs to raw materials used to manufacture the silver objects found at the site.

Gao, Xing [175] see Li, Feng

Garay-Vazquez, Jose (University of Exeter)

[337] *Revitalizing Indigenous Foodways: An Archaeobotanical Multidisciplinary Approach to Identifying Caçabí Bread in Precolonial Borikén (Puerto Rico)*

Archaeobotanical enquiry on past foodways has been reinvigorated by analyzing food lumps (charred multicomponent plant aggregates). The characterization of food aggregates has provided archaeobotany with a means to answer Sherratt’s provocative statement that “people do not eat species, they ate meals” via recovering sensuous data of intangible aspects of culinary traditions resulting from preparation and cooking. However, the study of food aggregates is restricted to the Old World, especially the Near East, Europe, and, more recently, parts of Africa and the Indian subcontinent. Therefore, in this paper, the results of the first New World case study of a directly dated *cassava* bread (a tuber-based meal made with Yuca [*Manihot esculenta*]) fragment from a Taino period site in Borikén (Puerto Rico) will be presented. To an extent, this paper aims to demonstrate how implementing a multidisciplinary approach can contribute to Indigenous revitalization efforts by recovering lost traditional knowledge. Identifying a tuber-based meal was possible by implementing mixed methods approach that incorporated Hather’s tuber identification methods with the microstructural analysis of charred food remains, alongside recipes from ethnohistorical documents and replication of meals via cooking experiments.

Garay-Vazquez, Jose [233] see Rodríguez-Delgado, Eric

Garcia, Cristina [45] see Scherer, Andrew

García, Dante [347] see Badillo, Alex

Garcia, Isabella, Lydia Evans (University of Illinois, Urbana-Champaign), and Katelyn Bishop (University of Illinois, Urbana-Champaign)

[373] *Ethics of Care in Zooarchaeology: Toward a More Compassionate Practice*

Historically, the treatment of animal bodies in archaeology has normalized viewing them as resources, reflecting a perspective disconnected from animals as agentive beings. In this way, settler science centers *Care* for animal bodies on availability for future research, naturalizing their position in colonized spaces such as zooarchaeology laboratories. We propose a reorientation that centers anti-colonial approaches to standard operating procedures, organizing zooarchaeological laboratory practice around respectful, empathetic, and ethically responsible care for all. Recently, the University of Illinois Urbana-Champaign’s Social

Zooarchaeology Lab (SZL) created and implemented ethical protocols in conjunction with its summer undergraduate internship program. Acknowledging our position at a land-grab institution, we emphasize transparency, reflection, and accountability and seek to provide care to all humans and nonhumans in the SZL. This includes providing transparency regarding the origins of animals in our comparative collection and committing to their ethical obtainment; prioritizing mindfulness surrounding archaeological and comparative animals' status as once-living beings; and attempting to ensure that our practices respect Indigenous, Native American, and descendant communities' perspectives, not just Western scientific priorities. By redefining care in the SZL, we aim to disrupt the false naturalization of traditional archaeological practices and foster a more ethical approach to studying past human-animal interactions.

García Ayala, Gabriela, Verenice Yunuen Heredia Espinoza (El Colegio de Michoacán), and Christopher Beekman (University of Colorado, Denver)

[180] *El formativo medio en la región valles de Jalisco: Resultados preliminares del proyecto "El Campanillo"*

Durante dos años hemos realizado un proyecto arqueológico con la finalidad de conocer los orígenes de la sociedad compleja en Los Guachimontones. A partir de un recorrido sistemático, excavaciones en áreas determinadas y un análisis del paisaje hemos logrado obtener información variada sobre las ocupaciones anteriores a la cultura Teuchitlán. En esta ponencia presentamos los resultados preliminares de la clasificación de los materiales cerámicos más antiguos encontrados durante las excavaciones, así como un análisis del patrón de asentamiento en conjunción con el paisaje. Los materiales cerámicos nos permiten entender posibles conexiones con Colima y los sitios Capacha, así como con Michoacán y el sitio de El Opeño. La relación entre patrón de asentamiento y paisaje ayudan a determinar los elementos naturales significativos para el establecimiento de sitios durante el formativo medio a nivel local y las diferencias regionales.

García Ayala, Gabriela [180] see Heredia Espinoza, Verenice

García-Des Lauriers, Claudia (Cal Poly Pomona)

[393] *Chiapas and Teotihuacan: Multidirectional Interactions*

Evidence from several sites in Chiapas dating to the Early Classic point to complex interactions between local Zoque populations and many Mesoamerican regions. This paper will focus on the multidirectional nature of interactions between Teotihuacan and these communities. Trade and exchange between these two distant regions began early in the Late Preclassic but became increasingly more complex during the Early Classic. The material signature of these interactions points to a growing cosmopolitanism perhaps especially among elite circles, but that also led to stylistic innovation in art, ceramics, and perhaps also lithic production. The innovations will be seen in light of formations and negotiations of identity at Teotihuacan and in the various sites where we see material references to contacts.

García Hernández, Melina [118] see MacLellan, Jessica

García Mollinedo, Miguel

[118] *Settlement Pattern Analysis of the La Venta Region Using GIS and Open-Source Lidar Data*

La Venta, located in the Mesoamerica Gulf Coast, is the major Olmec center of the Middle Preclassic (ca. 800–400 BC). This site is recognized for its planned architectural layout, monumental stone sculptures, and massive greenstone offerings. The La Venta region encompasses the coastal plains of western Tabasco and the Tonalá River Basin. In this region, several archaeological projects over the years have provided a large amount of data about the regional settlement pattern. However, these projects were carried out over a span of time from the 1940s to the 2010s, focused on specific areas, and used different methodological strategies for the site classification. The data from the survey projects were digitized, and depending on how the site location was published, different georeferencing strategies were used. Based on the characteristics described for the sites, a typological classification was proposed for the region. Subsequently, using 5 m resolution open-source lidar data, a series of GIS analyses were performed. These analyses allowed the study of the distribution of the sites and the possible sociopolitical implications of its distribution, as well as socioeconomic factors related to proximity to water bodies, flooding susceptible areas, suitable zones for agriculture, and areas of resource concentration.

García-Moreno, Cristina [124] see Campos-Hernandez, Cinthia

Garcia-Putnam, Alex (University of New Hampshire), Laura Allen (Mississippi State University), Christine Halling (University of New Orleans), Ryan Seidemann (The Water Institute), and Kathryn Baustian (Skidmore College)

[75] *They Can't Catch a Break: A Comparison of Fracture Severity and Healing in Impoverished and Wealthy Individuals from Nineteenth-Century New Orleans, Louisiana*

How antemortem long bone fractures are treated following injury can dramatically impact the lived experience of an individual. Unset fractures can lead to infection, degenerative joint disease, and even death without proper medical intervention. Here, the authors explore fracture severity and healing from skeletal samples derived from two New Orleans cemeteries. Charity Hospital Cemetery #2 (1842–1929), a cemetery associated with the state-run indigent hospital, has produced three skeletal samples from excavations between the 1980s and 2010s (total MNI of the samples = 370). Cypress Grove Cemetery #1 (established in 1840) is a large burial ground initially built to inter firefighters and their families and grew to include other prominent groups from the city; bioarchaeological salvage recovery (summer of 2024) of disinterred individuals from a series of wall vaults resulted in a skeletal sample of over 700 individuals from this cemetery. These two cemeteries date from similar time periods (1840s to early 1900s), but those interred are from different socioeconomic strata. This analysis looks at the frequency, severity, and level of healing of antemortem fractures across both skeletal samples to understand the variation in care received by different social classes in the late 1800s in New Orleans. *****This presentation will include images of human remains.**

Garcia-Putnam, Alex [226] see Thomson, Isabella

Garcia Ramirez, Pamela

[290] *The Ceramics of the PRV24, a Petrographic Approach*

During the fieldwork of the PRV22-24 the recovered ceramics were analyzed by conventional methods that include a detailed analysis of the primary contexts excavated, such as ovens, termination deposits, and middens. From the PRV24 collection a sample was taken to study through petrographic analysis. The sample focuses on the fine ceramic paste of Late Classic and Early Postclassic, with some possible imports, possible transitional sherds, and misfired sherds, as well as some from the Early Classic and Formative periods. The sample is meant to cover the transition of LC to EPC and present a general view of the ceramics from the excavations. In this talk general trends of consumption and use will be presented from the detailed analysis of the primary contexts. Previous research on the ceramics from the Late Classic and Early Postclassic periods was centered on its description and the conformation of its typology by formal attributes; through the petrographic analysis we will present the characterization of the different ceramic pastes in the different periods, the mineral composition of local and possible imports, and *fabric* features related to the production of the ceramics vessels.

García Vázquez, Berenice (ENAH), and Francisco Estrada-Belli (Tulane University)

[169] *Arquitectura monumental y entierros dinásticos en el Grupo I de Holmul: Resultados de las excavaciones del 2016 al 2022*

Se presentan los datos resultantes de las temporadas de excavaciones más recientes en el basamento del Grupo I de Holmul, en el Edificio D, al centro del mismo y de la Ruina X ubicada en la plaza al este del Grupo I. La secuencia arquitectónica hasta ahora recuperada registra una primera fase constructiva monumental a finales del Preclásico Tardío aun si no se puede descartar la existencia de antecedentes. Esta es seguida por un cambio en el eje primario y una secuencia de subestructuras del Clásico Temprano finalizando en el siglo sexto. El momento final de la secuencia corresponde a la mutilación de la estructura superior del Edificio D, junto al el enterramiento de la estructura adosada a su escalinata en el marco de una nueva construcción que nunca llegó a su cumplimiento. Dentro de esta secuencia se recuperaron una serie de entierros y ofrendas con textos epigráficos. Estos datos arqueológicos se pueden relacionar a la secuencia dinástica local y a sus vínculos políticos con las hegemonías que dominaban las tierras bajas mayas del periodo Clásico como fueron las de Tikal, Teotihuacan y de los Kaanu'l. *****Esta presentación incluirá imágenes de restos humanos.**

Gardner, A. Dudley (WAARI)

[230] *Determining Site Depositional Sequences and Teasing Data out of High-Use Areas in Multiple Occupation Sites*
Occupational sequences in rockshelters, houses, and public spaces are difficult to separate from one another when multiple occupations have occurred at the same place over time. In this presentation, we will compare the stratigraphic complexity of an historical site that was burned and then rebuilt and then demolished and ultimately became a park with that of a 13,000 year old rockshelter that was continually reused until 150 BP. The compression of the soil and the commingling of artifacts from earlier and later occupations is remarkably similar. This presentation will put forward what we have learned about the cultural and natural depositional sequences in these two high-use areas.

Gardner, William [123] see Eklund, Emily

Gardner, William [86] see Greaves, Aspen

Garland, Carey (University of Georgia), and Victor Thompson (University of Georgia)

[101] *A Regional Perspective on Shell Fishing, Shifting Environments, and the Communities of the Georgia Coast*
Mollusk geochemistry and paleobiology data from shell rings support an interpretation that villagers on the Georgia Coast during the Late Archaic developed complex institutions centered on sustainable shellfish harvesting practices. These institutions appear to have been long-term, lasting for hundreds of years. However, during the terminal Late Archaic period (ca. 3800 years BP), environmental fluctuations led to changes in how people engaged with their landscapes and the eventual abandonment of shell ring villages. We discuss the environmental conditions under which shell ring villages on the Georgia Coast persisted and eventually waned ca. 3800 BP. We argue that cultural institutions and the environment are dialectically linked. The environment does not force a predetermined reaction, but rather a set of choices for people to either alter practices so that core institutions can continue or to shift practices to meet changes in the environment so that institutions take a dramatic departure from prior patterns. Within the context of environmental change during the terminal Late Archaic, communities of the Georgia coast decided to shift to other kinds of social-ecological relationships. These communities were invested in specific geographic locations, and they adapted to changing environmental circumstances and continued to occupy these coastal regions for millennia.

Garland, Carey [87] see Forbes, Sophie

Garner, Daniel (University of Michigan Museum of Anthropological Archaeology)

[301] *Dating a High Plains Medicine Wheel by the Use of Comparative Lichen Growth and Optically Stimulated Luminescence*

On the outskirts of the city of Laramie, Wyoming, sits a circular stone feature known as a medicine wheel. Despite being near the University of Wyoming (UW), it remained unknown until a UW archaeologist encountered it while hiking. Those who know about this medicine wheel have assumed that it was built after the 1960s as part of the new age spiritual movements started by Hyemeyohsts Storm and Vincent LaDuke. To test the veracity of this claim, I employed two methods: (1) a comparative study of lichen on the stones of the Laramie Basin medicine wheel (LBMW) and (2) optically stimulated luminescence (OSL) of sediment directly underneath the stones themselves. By comparing the presence or absence of lichen on the LBMW with surfaces of a known date, I will show that the lichen colonies on the medicine wheel were established prior to the 1960s. Using OSL I will be able to suggest when the stones were placed on the ground during the wheel's construction. By using these two methods I will show that the LBMW was not only constructed prior to new age movements of the 1960s but was built prior to the arrival of Europeans on the high plains of Wyoming.

Garnett, Justin [191] see Sellet, Frederic

Garrido, Francisco (Museo Nacional de Historia Natural), and Maria Plaza-Calonge (Universidad Católica de Chile)

[374] *The Long History of Tin Bronze during Pre-Inca Times in the Southern Atacama Desert*

The presence of tin bronze in the Southern Atacama Desert has primarily been associated with Inca influence, due to the empire's control over raw materials and the production of prestige goods. Although tin

is not native to the region, our research indicates that its presence in Copiapó dates back to the Formative period, possibly due to frequent contact with northwestern Argentina. Our pXRF analyses have preliminary revealed that the earliest metallic artifacts containing tin in the semiarid north of Chile are linked to the Molle communities (AD 500–800). These artifacts, found as burial offerings, suggest that the use of tin was not widespread, given their scarcity. Additionally, our excavation of the Cerro Negro site (circa AD 1000), a mining camp focused on copper ore extraction for lapidary activities, uncovered fragments of metallurgical molds with traces of copper-tin alloy residues. However, no slags indicative of primary smelting were found. This suggests that the occupants of Cerro Negro may have been recycling bronze artifacts or producing alloys from preprocessed raw materials. This evidence highlights the diverse technical skills of the local communities, who practiced multicrafting in a decentralized manner.

Garrido, Francisco [374] see Plaza-Calonge, Maria

Garrison, Thomas (University of Texas, Austin), J. Dennis Baldwin (University of Texas, Austin), Stephen Houston (Brown University; Peabody Museum of Archaeology and Ethnology, Harvard University), and Anna Brandeberry

[107] *Lidar and Looting: The Perils and Potential of Canopy-Penetrating Remote Sensing Data for Studying Illicit Excavations in the Maya Lowlands*

The looting of sites in the Maya Lowlands began in earnest in the mid-twentieth century as collectors sought to acquire carved stone monuments with inscribed texts. The discovery of spectacular portable objects, often in burials, by large-scale projects led to the illicit excavation of ruined mounds throughout the Maya area in search of pieces to be sold on the black market. This latter behavior has left scars on the landscapes of Maya archaeological sites, and the documentation of looter trenches is now a basic component of fieldwork in the Lowlands. Lidar, under the right conditions, can detect the damage caused by illicit excavations. This paper uses data from the Biotopo San Miguel la Palotada-El Zotz in Guatemala to explore how lidar and field data may be combined to quantify the impact of looting in the Maya Lowlands, while at the same time providing a means for building detailed regional settlement chronologies. Geospatial analysis of the distribution of illicit excavations provides clues as to how looting is facilitated. Consideration is also given to the limits of lidar technology for monitoring this activity and the risk lidar might present for renewed looting activity in the more remote areas of the Maya Lowlands.

Garrison, Thomas [325] see Baldwin, J. Dennis

Garrison, Thomas [100] see Véliz Corado, Fernando

Gary, Jack (Colonial Williamsburg Foundation)

[365] *Interpretive Considerations for the Archaeological Study of Elite Gardens in Colonial Williamsburg*

Colonial Williamsburg's Department of Archaeology will conclude five years of excavation on the garden of John Custis IV, a 4-acre space regarded as one of the most ornate early eighteenth-century gardens in Virginia. Filled with topiaries, experimental plantings, and classical statuary, the garden itself was created and maintained by African American gardeners whom John Custis enslaved. Like most pleasure gardens of the gentry the space embodies the contradictions and harsh realities of eighteenth-century colonial America. An explicit goal of the project is to accurately re-create this garden for Colonial Williamsburg's guests, allowing them to experience both the aesthetic qualities of a baroque garden in colonial Virginia while also understanding the contributions and labor of those who created and maintained it. This paper will discuss initial archaeological interpretations that help to address this complex goal and to ultimately address the question, "What approaches must be taken in the archaeological study of elite colonial gardens to ensure relevant and responsible interpretations?" Also considered here will be the ways in which archaeological information beyond garden layout and horticultural details can be incorporated programmatically into a re-created garden, allowing us to represent the individuals laboring in this space.

Garzón-Oechsle, Andrés [105] see Velasco Alban, Janny

Gasparyan, Boris [82] see Gill, Jayson

Gates-Foster, Jennifer**[168] *Rural Transformations and Community-Based Archaeology in the Pisgah National Forest***

Over the last six years, the mountain town of Old Fort, NC, has been at the center of a scenario that would be familiar to many residents of rural communities in desirable landscapes. The construction of a new trail system in the Pisgah National Forest on the slopes above the town has stimulated a powerful transformation in the local economy that reoriented the town's identity seemingly overnight. Once a center for the railway and timber industries, and small-scale rural manufacturing, these communities face a future tied to the outdoor recreation economy and the gentrification that inevitably follows. While these transformations feel seismic, they are far from the only changes the community has experienced over the past 200 years. As archaeologists we recognize how old fence lines, property boundaries, remnants of logging, mills, homesteads, or overgrown pathways draw our attention to neglected pasts, which may be harnessed in the cultivation of a sense of self and shared belonging in a place. In this community-led project we have responded to the shifting priorities and capacities of our partners as they seek a role for heritage in their community by engaging the material memories embedded in the landscape.

Gates St-Pierre, Christian (Université de Montréal), Marie-Ève Boisvert (Université de Montréal), and Claire St-Germain (Ostéothèque de Montréal)**[373] *Are All Bones Equal?***

The ontological turn in the humanities has been challenging the traditional nature/culture dichotomy in perceiving humans as animals like any other, particularly within a perspectivist framework. This shift encourages us to consider humans and other-than-human animals as part of a unified multispecies world. But what about their bones? Do animal and human bones undergo the same epistemological scrutiny and treatment by archaeologists, especially zooarchaeologists? If humans and animals are equals, does this equality extend to their skeletal remains? In this presentation, we will explore how the discovery of human bones among faunal or bone tool assemblages raises ethical and epistemological questions regarding the analysis and display of these findings—questions that often lack a clear or universal answer.

Gates St-Pierre, Christian [50] see Birch, Jennifer

Gatts, India [216] see O'Mansky, Matt

Gauthier, Laurianne, Christina Halperin (Université de Montréal), and Carlos Cruz Gómez (Universidad de San Carlos de Guatemala)**[324] *Hydraulic Systems and Water Ideology in the Mayan Lowlands***

Urban developments feature monumental architecture as well as diverse engineering systems that were part of daily activities and larger landscape modifications. Some of the urban constructions in ancient Maya cities included reservoirs and canals. Reservoirs were also part of ceremonial activities to maintain good relationships between humans, deities, and ancestors. This poster examines the function, chronology, and construction techniques of three reservoirs located in the ancient Maya city of Ucanal, Petén, Guatemala. Excavated in 2022 and 2023 by the Proyecto Arqueológico Ucanal, these reservoirs were quite different in size, functionality, and chronology. Excavation data combined with sediment analyses, Bayesian statistical analyses, and ethnographic explorations in reservoir construction in the Maya area today reveal not only a diversity of practices surrounding water infrastructure but also major landscape modifications at the beginning of the Terminal Classic period.

Gauthier, Laurianne [51] see Halperin, Christina

Gauthier, Laurianne [64] see Voltaire, Mikael

Gauthier, Nicolas (University of Florida), and Darcy Bird**[385] *Climate Variability and Emergent Social Patterns in the Prehispanic Southwest***

This study leverages state-of-the-art climate reconstructions, computational models, and archaeological data to examine the interplay between climate, demography, and social networks in the prehispanic Southwest. Here we examine whether generative simulations can reproduce key features of the archaeological record

captured in the cyberSW dataset, while accounting for dynamic climate influences. We employ machine learning to downscale reconstructions of temperature and aridity, using these dynamic maps to force models of population growth, trade, and migration. This method captures nonlinear interactions and temporal changes often missed by static statistical analyses. Our approach uniquely ties social processes to specific climate patterns, such as zones of tropical Pacific versus Atlantic influence, allowing us to associate local responses with regional or global drivers. Our results allow us to assess the varying sensitivities of network signatures to specific climatic fluctuations, revealing how large-scale climate changes might impact local populations. Our findings provide insights into potential local impacts of contemporary global climate change and regional climate fluctuations. This research not only enhances our understanding of past human-environment interactions but also offers a framework for addressing complex socio-ecological questions relevant to contemporary climate-induced population growth, trade, and migration.

Gauthier, Nicolas [114] see Rutkoski, Ashley

Gayo, Eugenia [53] see Ugalde, Paula

Gazzo, Silvia, Emanuela Cristiani (Sapienza University of Rome), Fabio Negrino (University of Genoa), and Julien Riel-Salvatore (Université de Montréal)

[384] *Coastal Echoes: Marine Mollusk Exploitation and Shell Bead Production at Riparo Bombrini (Ventimiglia, Italy) during the Early Upper Paleolithic*

Marine mollusks were first deliberately collected for food consumption and tool production during the Middle Paleolithic in Europe. However, it was with the emergence of *Homo sapiens* in the Early Upper Paleolithic that a profound shift occurred, leading to the systematic and extensive gathering of these marine resources. In particular, the Aurignacian culture marks the beginning of a technological behavior focused on the manufacturing of personal ornaments made from shells and other materials such as stone, bone, and antler. Riparo Bombrini (Ventimiglia, Italy)—a collapsed rockshelter located in the Paleolithic complex of Balzi Rossi—has proved to be an important site for the study of the methods of collecting and utilization of marine mollusks during the Protoaurignacian culture along the Mediterranean coast. This site has revealed not only the remains of shellfish consumed for dietary purposes but also a considerable quantity of perforated small marine gastropods suspended as ornaments. These findings provide valuable insights into the dietary practices and symbolic behavior of the first anatomically modern humans to inhabit Western Europe. Finally, this study aims to highlight the combination of ecological, cultural, and symbolic factors that fostered a deep connection between *Homo sapiens* and the surrounding coastal environment.

Ge, Junyi [332] see Khatsenovich, Arina

Geersen, Jacob [277] see Auer, Jens

Geib, Phil (University of Nebraska, Lincoln)

[98] *Cave 7 and the Causes of Basketmaker II Warfare*

Lethal intergroup conflict, or war, was a facet of life for the Basketmaker II farmers on the Colorado Plateau ca. 500 BCE–500 CE. Massacre assemblages such as Wetherill's Cave 7 provide the most conclusive evidence for warfare, but other indications include rock art depictions of violence and war trophies. Attempts at explanation look at various environmental and social causes. Social distance is one central aspect to be factored in: how closely related were the combatants? Do they come from distinct ethnolinguistic groups or are they part of a single society? The flaked stone assemblage from Cave 7 coupled with other information provides a means of making inferences about social scale. Lithic raw materials indicate potential area of residence and production technology provide a means to examine learning networks. Attackers likely lived only 40 km or so from Cave 7, perhaps to the southeast. The evidence is strongly indicative of internal war at a rather local level.

Gembicki, Maciej [316] see Airola, Danielle

Gensmer, Kristin [179] see Kinneer, Christopher

Gentil, Bianca [106] see Buckley, Gina

George, David [121] see Pisanelli, Brenna

George, Miranda [376] see Paris, Elizabeth

George, Richard (University of California, Santa Barbara), Robert Rosenswig (University at Albany SUNY), Megan Walsh (Central Washington University), and Douglas Kennett (University of California, Santa Barbara)

[387] *New AMS Radiocarbon Dates for Northern Belize Shed Light on Sub-Saharan Dust Deposits during the Archaic Period*

Transatlantic dust events from the Sahara Desert have wide-reaching impacts on the environment across the Americas, but how the phenomenon exerted influence on the settlement history of people in the Maya region has largely remained understudied. Recent excavations and surveys by the Belize Archaic Project in the Progreso Lagoon Region (PLR) of northern Belize have begun to reconstruct settlement patterns and subsistence strategies of mobile Archaic foragers. The discovery of a distinctive orange-colored soil horizon in the Progreso Lagoon geology (stratigraphy?) with associated Archaic period sites and stone tool features suggests the horizon was formed during the Saharan transition to hyperaridity between 7000 and 3000 BP. Here we report on new AMS radiocarbon dates from charcoal and organic samples recovered at sites across the PRL with distinct orange soil horizon. Our AMS radiocarbon chronology adds a new chronological framework that spans the Archaic period (7000–1000 BCE) and explores human-environment interactions during and after the orange soil horizon.

George, Richard [301] see Kracht, Emily

George, Richard [104] see Serafin, Stanley

Georges, Jemima (CUNY)

[51] *Fauna in Preclassic (800 BC–AD 200) and Late Classic Period (AD 600–930) Ritual Contexts at Nixtun-Ch'ich', Petén, Guatemala*

Nixtun-Ch'ich' in Petén, Guatemala, was heavily occupied in the Middle Preclassic (800–300 BC) and Late Preclassic (300 BC–AD 200) periods. The site was abandoned in the Early Classic period (AD 200–600), then reoccupied in the Late/Terminal Classic (AD 600–930) and Postclassic period (AD 930–1525). Excavations at the site revealed large amounts of fauna in ritual and domestic contexts. Ritual refuse was encountered in association with ceremonial pools, temples, ballcourts, and other ceremonial contexts. The Classic period (AD 200–930) witnessed the flourishing of monumental architecture, extensive trade networks, and complex societal structures. This period also saw significant changes in political organization. The faunal record shows differentiation in access to certain animals with fauna playing a crucial role in ritual practices among the Maya elite. Thus, animal use likely reflected and reinforced a site's social and religious structures alongside associated artifacts. The Preclassic period experienced burgeoning cultural development yet archaeological evidence suggests that more cooperative structures were in place at this time that governed Nixtun-Ch'ich'. To discern changes in ritual practices between more cooperative and more despotic periods of governance, this paper compares various Preclassic ritual contexts with preliminary findings from a midden associated with a Late Classic period ballcourt.

Geraci, Peter

[37] *Persistent People, Persistent Places: The Archaeology of the Belrose Farmstead in the Lower Fox River Valley of Northeastern Illinois*

Recent volunteer investigations of a historic farmstead located in the lower Fox River Valley in northeastern Illinois have identified several new sites that have the potential to bring insight into the complicated history of the region. Analysis of the material culture shows that people have continually used this portion of the lower Fox River Valley throughout human history with periods of intense use during the poorly understood

Woodland period. A complementary landscape analysis of the farmstead and surrounding area paints a picture of repeated interactions, adaptation, and the persistence of place.

Getz, Sara [75] see Stackelbeck, Kary

Ghilardi, Matthieu [345] see Theodoropoulou, Tatiana

Ghosh, Ahana (Indian Institute of Technology, Gandhinagar, India)

[219] *Beyond Hearth and Pots: Understanding Food Processing and Pottery Functions in the Harappan Culture*

The presentation will elucidate the kind of product(s) processed inside the potteries and their potential cultural uses within select Harappan habitational sites from western and northwestern India. The pottery samples were sourced from the habitational sites of Dholavira, Shikarpur, Bagasra, Karanpura, and Ropar. One of the notable findings of this research is the identification of C₄ plant-based resources inside some of the Red-Ware cooking pots from Karanpura, marking their possible sources in multiple varieties of millets; this analytical revelation is further supported by the archaeobotanical signatures from the geographically adjacent Harappan sites within similar chronological brackets. Besides the GC-MS analysis of the residues, the application of the compound-specific isotope technique has been instrumental in gradually uncovering the possible food practices prevalent across the studied sites. The quantitative assessment of the detected lipids and available open porosity data from selected sites has highlighted the complex relationship between pottery forms and their intended use. This “use alteration” is particularly evident in unique forms such as perforated jars, incised pottery, and conventional serving pots like goblets and dish-on-stands. Finally, the contrasting lipid preservations within different parts of the same pot have also been essential in understanding the cooking techniques likely used by ancient Harappans.

Giacinto, Adam [291] see Hale, Micah

Gibson, D. (El Camino College)

[31] *The Transformation of the Social Dimensions of Gaelic Territorial Organization and Landholding in Thomond from the Early Medieval to Early Modern Periods*

Thanks to the chance survival of a rich corpus of historical documentation for County Clare, Ireland, and the early land survey work by Irish-speaking scholars in the nineteenth century, the territorial organization of Irish complex chiefdoms in Thomond can be reconstructed with a high degree of confidence. What may be reconstructed includes the internal chiefdoms (túatha) of which the complex chiefdoms were composed and the boundaries of the chiefly demesne territories. Consistency over time in the location of elements of chiefly centers, the chiefly residence and a church, from the Early Medieval period to the Late Medieval period allows most chiefly centers to be identified. Beginning in 1200 CE, some of Thomond’s chiefdoms were appropriated as a royal demesne territory by the O’Brien royal lineage that was called the Triúcha Cét Uachtarach. Historical surveys of ownership of castles and land show how the destruction of the chiefdoms and the Gaelic system of landholding accelerated during the reign of Elizabeth, though Thomond remained politically autonomous.

Giersz, Milosz [333] see Wieckowski, Wieslaw

Gill, Jayson (Wesleyan University), Nick Ashton (British Museum), Keith Wilkinson (University of Winchester), Boris Gasparyan (Institute of Archaeology and Ethnography), and Daniel Adler (University of Connecticut)

[82] *The Shape of Change: A Cross-Regional Exploration of Relationships between Biface and Prepared Core Technologies In Eurasia*

This research examines and compares the origins of Levallois technology and its relationship with Lower Paleolithic bifacial production systems in the Armenian Highlands and Britain. While some argue for a single African origin for Levallois technology, increasingly support is found for a multiple origins model in which it independently evolves out of underlying technology in different regions of Africa and Eurasia. It has been proposed that the technology is realized through the evolution of either Lower Paleolithic core technology or Acheulian bifaces. We explore these hypotheses by examining the relationships between early Levallois

technology, proposed transitional types, and Lower Paleolithic production systems in geographically discrete regions. The sites of Nor Geghi-I (Armenia) and Purfleet (Britain) are the focus here, as they contain evidence for the in situ development of Levallois technology. Landmark-based geometric morphometrics is applied to 3D scans of lithic artifacts from Lower–Middle Paleolithic sites in the two regions. As this research is focused on morphological characteristics, we also explore factors that may affect shape diversity; i.e., raw material, size, and reduction intensity. Our results indicate that the appearance of Levallois prepared core technology is the outcome of distinctive processes in the two study regions.

Gill, Jayson [317] see Nielsen, Casey

Gill, Jayson [198] see Zimmermann, Mario

Gillaspie, Amy (Archaeology Southwest), Michele Koons (Denver Museum of Nature and Science), Andrew Drysdale (University of Colorado, Denver), and Ryan Cline (SWCA Environmental Consultants)

[336] *Identity in the Archaeological Record: A Case Study at the Historic Astor House of Golden, Colorado*

The Astor House, a historic building in Golden, Colorado, opened in 1867 during a time when Golden was vying to become the capital of the future state of Colorado. Originally intended as a glamorous hotel, the building operated as such for 25 years before being sold for back taxes. It then changed hands and names several times until Ida Goetze, a German immigrant widow, purchased it and successfully transformed it into a boarding house. Goetze and her daughter-in-law Irene managed the boarding house until the 1950s. By the 1970s, local business owners sought to demolish the building, considering it a blight and envisioning the lot as a parking space. However, locals formed the Golden Landmarks Association to preserve the building, securing its place on the National Register and transforming it into a beloved local museum until its closure in 2015. Foothills Art Center later repurposed the space for its gallery and art campus, creating a community hub. Before this transition, the Astor House Community Archaeology Project conducted public excavations in 2021, uncovering artifacts including Civil War–era adornments and ironstone ceramics. This paper explores identity as reflected in these artifacts, particularly through the lens of the building’s history under Ida Goetze.

Gillaspie, Amy [88] see Casillas, S]

Gillaspie, Amy [300] see Eckels, Monica

Gillespie, Jeanne (University of Southern Mississippi)

[344] *Violence against Women in Mexica-Tenochca Rituals: Gulf Coast Connections?*

A recent exhibition at the National Museum of Mexican Art of nine sculptures from the Huasteca depicted women dressed as warriors, ball players, and governors from Classic and Postclassic sites along the Gulf Coast, suggesting that women held positions of power and prestige there. Other sculptures from the region illustrate decapitations and dismemberment suggesting that violence against women’s bodies must also have served an important function. Accounts of powerful women are present at postclassic sites in the Valley of Mexico, as are illustrations of violence including decapitated and dismembered stone sculptures of Coatlicue and Coyolxauhqui at the base of the Templo Mayor at Tenochtitlan. Nahua ethnographic accounts indicate a pattern of purposeful acquisition of female power on the part of Nahua *altepemeh* by marriage into local dynasties but also through violent acts against elite women from what appear to be Huastec communities. This study explores connections between archaeological, pictorial, geographical, and archival sources commemorating evidence of female rulers and warriors in combination with evidence of violence against female bodies from Cacaxtla and Tamtoc to Tenochtitlan and Tepeyac. The presence of the female divinities Xochiquetzal and Toci in Nahua practice is especially significant in this examination.

Gillreath-Brown, Andrew (Yale School of the Environment), Jennifer Marlon (Yale School of the Environment), Nicolas Begotka (Yale School of the Environment), Cal Inman (ClimateCheck), and Anthony Leiserowitz (Yale School of the Environment)

[111] *The Archaeology of Climate Change and Understanding Modern Climate and Weather-Related Hazards in the United States*

Severe heat waves and droughts are visible manifestations of climate change, and many people associate these

events with climate-change risks in the USA. Drought impacts public health, economies, and quantity and quality of water. Over the past 2,000 years, the southwestern USA has experienced several megadroughts. During the megadroughts, some population levels decreased, and death rates were high, while other populations persisted and were more resilient. Here we use a large modern US survey dataset ($N = 10,038$) from 2018 to 2022 to estimate worry about two hazards—heat waves and droughts—in every county across the contiguous USA. We identify areas where residents underestimate ongoing and future climate and weather-related risks. We identify “hotspots” where projected risks are expected to be high yet perceived risk relatively low. Using archaeological data, we discuss the effects on people in the southwestern USA and how people prepared for or responded to droughts. Past adaptations (e.g., sustainable farming practices) to climate change could be reformulated for modern contexts, which could help people take some necessary steps to protect their health and be more resilient against droughts and heat waves. Cultural adaptations and diversity are a key part of human resilience.

Gillreath-Brown, Andrew [380] see Carney, Molly

Gilmore, Ariel, and Tracie Mayfield

[125] *The African Diaspora: Using Media Archaeology to Redefine Diasporic Connection*

When thinking of the African Diaspora, one cannot deny the themes of resistance, resilience, and justice that seem to unite these very distinct cultures. This project focuses on the African diaspora and interrogates what diaspora means using media archaeology. Media archaeology is defined as a field of study that seeks to understand how change over time occurs through the examination of media and its changing technologies. For this particular project, I examine how different aesthetics develop across the diaspora and how that may reflect political, environmental, and historical changes over time. I use historical evidence, ecological studies, and media from various periods to understand how different cultures have been segmented and how the definition of diaspora has changed over time. As I explore a new definition of an archaeological “site” that is rooted in the digital landscape, I will study members of the African diaspora from the Caribbean and the southern United States looking into sites where the cultures are distinct. I examine the American South on behalf of African Americans, Providencia y Santa Catalina, Colombia, as a representation of the Caribbean, and sites where these cultures interact and intersect such as Brooklyn, NYC, where these cultures coexist and intermingle.

Gilmore, Kevin (HDR), Edward Jolie (Arizona State Museum; University of Arizona), and Jonathan Hedlund

[179] *Desert to the Left of Me, Plains to the Right, Here I Am Stuck in the Mountains with You: The Early to Middle Archaic Transition at the Foot of the Southern Rocky Mountains of Colorado*

The Palmer Divide, an upland extending east from the foot of the Southern Rocky Mountains in central Colorado, contains a mosaic of plains and montane biomes and evidence of the people attracted to these resources. Franktown Cave contained an exceptional assemblage of perishable artifacts dated 3300–2500 BC, which falls at the Early to Middle Archaic transition. Complex perishable artifacts such as sandals and baskets associated with the transitional components reflect unique cultural traditions and the individual and group identities of the makers and suggest sociocultural connections to people of the Colorado Plateau to the west and/or the northern Chihuahuan Desert to the south. Associated projectile points similar to contemporaneous points in southern New Mexico, Texas, and northern Mexico provide additional support for a southern connection. The transitional component falls after the mountain/foothills-adapted Early Archaic cultures (e.g., Mount Albion) disappeared from the region, and slightly predates the appearance on the Palmer Divide of people using the Northern Plains Middle Archaic McKean technocomplex, which dominated the Central and Northern Plains for over 2,000 years. Thus, Franktown Cave may represent the northern frontier for southern ideas (and possibly people) just prior to the arrival of northern technologies that defined the Middle Archaic regionally.

Gilpin, Dennis (PaleoWest Archaeology), Douglas Mitchell (S’edav Va’aki Museum), and Mary Whelan (S’edav Va’aki Museum)

[188] *Settlement Organization in the Deadman Wash Periphery of the Wupatki Settlement System, AD 1050–1275*
After the eruption of Sunset Crater Volcano circa AD 1060–1090, people of the Sinagua, Cohonina, and

Ancestral Pueblo archaeological traditions established an extensive settlement system in the Wupatki Basin north of Sunset Crater. Archaeological survey of Wupatki National Monument examined the core of the Wupatki settlement system, but the southern edge of the system along Deadman Wash is outside the monument on Coconino National Forest. Building on studies conducted from about 2008 to 2013, ongoing reconnaissance of 40 km² along Deadman Wash has identified more than 150 sites, including clusters of small and medium-sized pueblos (3–30 rooms), field houses, and farming features interspersed with community features such as a ballcourt and multiple great kivas. Whereas Wupatki Pueblo, the largest pueblo in the Wupatki Basin, has over 100 rooms, and Citadel, the second largest, has more than 50 rooms, the largest pueblos in the Deadman Wash study area have 20–30 rooms. Clustering of smaller sites around larger pueblos and the presence of community features along Deadman Wash represent social networks in the periphery acting somewhat independently from the core. We use GIS spatial analysis tools to aid in understanding how these settlements were organized.

Gilstrap, William (MIT)

[81] *Organization and Production of Architectural Terracotta and Coarseware Pottery at Poggio Civitate (Murlo)*
The monumental architectural at Poggio Civitate (Murlo), Italy, represents some of the earliest usage of ceramic roofing tile. Studies indicate that Piano del Tesoro, the area described as a large production center had a burgeoning ceramic industry that included terracotta statues, roofing tiles and other architectural implements, and pottery. Ceramics were not the only materials being produced, and recent research has demonstrated the potential synergies within production activities. However, there have not been any investigations into the actual production processes of the objects themselves. This paper provides new insight into ceramic production strategies through observed technological behaviors in both roof tiles and orange coarseware pottery from the Orientalizing period and into the Archaic. Results of chemical and petrographic analyses show clear evidence of knowledge transfer over time and across functional ceramic types.

Gilstrap, William [66] see Meanwell, Jennifer

Giomi, Evan (Statistical Research Inc.), Barbara Mills (University of Arizona), Matt Peeples (Arizona State University), and Scott Ortman

[385] *Network Structure and Market Transformations in the US Southwest and Northern Mexico, AD 1200–1700*
We apply social network analysis to the cyberSW database to help understand structural differences in the Eastern and Western Pueblo modes of social and economic organization. The distinct social organization of Pueblo communities in each region has been a perennial topic in Southwest archaeology and ethnology, and we bring to bear a large-scale dataset to address the topic anew. Using ceramic data from cyberSW we evaluate network cohesion across 50-year intervals over the period between AD 1200 and 1700, showing how major demographic changes in the fifteenth century coincide with major changes to network structure. We also demonstrate that Western and Eastern Pueblo modes of participation in regional interaction diverge suddenly and dramatically in this same period. We argue that the structures observed in each region are consistent with the development of a market system among the Eastern Pueblos and intensification of local production alongside greater investment in short-distance relationships among the Western Pueblos, providing a more robust interpretation of the results of the social network analysis and contributing more broadly to understanding the evolution of market systems in premodern contexts.

Giovas, Christina (Simon Fraser University), Christine Conlan (Simon Fraser University), Scott Fitzpatrick (University of Oregon), Sandrine Grouard (Muséum National d'Histoire Naturelle), and George Kamenov (University of Florida)

[288] *Stable Isotope and Radiocarbon Evidence for Caribbean Indigenous Relationships with an Introduced Rodent: *Agouti* (Dasyprocta) in the Precontact Lesser Antilles*
In the island Caribbean, the arrival of Indigenous peoples from South America during the Ceramic Age (ca. 2500–500 BP) was accompanied by introductions of continental animals and the interisland movement of exotic species. These Indigenous efforts to reshape the island bioscapes have prompted speculation about the nature of human relationships with introduced animals and inquiry into the possibility of garden hunting, pet keeping, animal management, and domestication. Among the most widely dispersed animal introduced in this

period was the agouti (*Dasyprocta* sp.), a medium-sized rodent whose skeletal remains are found in archaeological sites throughout the Lesser Antilles, often appearing as burned remains in midden contexts, consistent with dietary consumption. Here we report new stable carbon ($\delta^{13}\text{C}$) and nitrogen ($\delta^{15}\text{N}$) isotope data and radiocarbon dates for agouti that inform this species' earliest Caribbean introduction and questions about Indigenous management practices, including possible captive management. Our data represent the largest, most spatially extensive sample of archaeological agouti tested to date.

Giovas, Christina [87] see Chong, Emma

Giovas, Christina [240] see Durga, Ricky

Gittelhough, Trevor (Tradewinds Archaeology)

[389] *Geophysical Investigations of Lakes and Reservoirs*

Geophysical investigations of submerged landscapes have become an integral part of offshore cultural resource management projects, as well as improving scientific and academic studies in early migrations, climate change, and human adaptation. There is a growing need for researchers to learn how to use geophysical surveys, and the type of data that they are capable of providing to archaeologists. By expanding their use and understanding of their processes, it is possible to increase their capabilities beyond the current expectations. Lakes and reservoirs provide the best opportunity to do so, due to them consisting of logistically uncomplicated, climate-stable water bodies, which harbor extensive submerged cultural resources and paleo-landscapes. By accessing these testing grounds we can improve the methods and techniques used by archaeologists and increase the capabilities of underwater archaeologists in their investigations of paleo-landscapes and submerged precontact sites.

Gleadow, Andrew (University of Melbourne), David Fink (Australian Nuclear Science and Technology Organisation), Réka Fülöp (Australian Nuclear Science and Technology Organisation), Alexandru Codilean (University of Wollongong), and Helen Elizabeth Green (University of Melbourne)

[174] *Evolution of Sandstone Rockshelters and the Age of Rock Art in Australia's Kimberley Region*

Rock art shelters within the Warton Sandstone in the Kimberley region of northwestern Australia follow a developmental sequence that ultimately controls survival and age of paintings within them. The rockshelters develop by initial undermining followed by one or more major slab-falls of unsupported sandstone beds from the ceiling. Each fall creates a new fractured back wall and ceiling that become hosts to rock paintings following a well-defined stylistic sequence. The often-intact sandstone slabs tend to slide partially out of the new rockshelter leaving a narrow "corridor" cave behind and a buildup of sandstone slabs on the floor. The slab falls can often be dated using cosmogenic radionuclides (CRN). Subsequent falls of further beds from the ceiling lead to progressive enlargement of the shelter and eventually final collapse or toppling of the entire shelter with the destruction of any rock art within it. CRN dating shows that slab falls span an almost continuous range from <1,000 to >250,000 years, providing maximum ages for paintings produced on the resulting surfaces. Minimum ages can also be found occasionally where an already painted ceiling has fallen. Many rockshelters, and the art within them, are clearly able to survive for tens of thousands of years.

Gleadow, Andrew [174] see Green, Helen

Gliganic, Luke, Jo McDonald, Caroline Mather (University of Western Australia), and Lloyd White (University of Wollongong)

[174] *A Method to Date Rock Engravings Using Luminescence: Tested at Murujuga, Western Australia*

Rock engravings are a valuable component of the global archaeological record. They are significant to modern populations and are a visual archive of past cultural expression that can reflect material culture, practices, ideologies, territoriality, social organization, and environments in ways that other archaeological remains cannot. However, determining ages for rock engravings has proven difficult. Luminescence rock surface dating approaches have the potential to address this deficiency in applicable dating techniques. Specifically, luminescence rock surface exposure dating methods can be used to tell how long a rock surface has been exposed to sunlight, thus providing a potential avenue to date rock engravings. We conducted experiments

to assess whether a luminescence rock surface exposure dating approach could be used to date when rock engravings were made at the Murujuga rock art complex in Western Australia. The major art-bearing lithologies were petrographically characterized and tested for usable luminescence signals. Laboratory and field luminescence bleaching experiments were conducted using noncultural rock samples to test whether accurate exposure durations could be determined. Our results demonstrate that luminescence rock surface dating approaches have promising potential to date Murujuga's vast assemblage of rock engravings.

Glover, Jeffrey (Georgia State University), Dominique Rissolo (University of California, San Diego), Jakob Sedig, David Reich (Harvard University), and Vera Tiesler (Universidad Autónoma de Yucatán)

[283] *The Proyecto Costa Escondida: Recent Bioarchaeological Research at Two Ancient Maya Port Sites*

The Proyecto Costa Escondida (PCE) has been conducting interdisciplinary research along the north coast of Quintana Roo, Mexico since 2011. Project members have focused on the two ancient Maya port sites of Vista Alegre and Conil. Both have occupations stretching from the Middle Preclassic to the Historic period, but they have different peaks and valleys when it comes to their settlement histories. This paper focuses on the bioarchaeological record at both sites. The macroscopic and genetic data recovered from the interred individuals are discussed and then placed within their broader cultural and paleoenvironmental contexts. In so doing, this paper explores how the detailed life histories of individuals can add to a more nuanced picture of the lived experience and trajectories of coastal inhabitants over the past two and half millennia. *****This presentation will include images of human remains.**

Glover, Jeffrey [41] see Rissolo, Dominique

Glowacki, Donna [326] see McAllister, Christine

Glowacki, Donna [188] see Winter, Margaret

Gobalet, Kenneth [207] see Eubanks, Jill

Goder-Goldberger, Mae

[156] *The Middle to Upper Paleolithic Transition Using Multiproxy Data from High-Resolution Excavations from the Desert Margins, Israel*

Debates concerning the appearance and spread of the Initial Upper Paleolithic (IUP) technocomplex are intertwined with discussions regarding the spread of modern humans across Eurasia. As a result, there is an ongoing transformation in the use of the term IUP and its embedded association with the dispersal of modern humans. This outlook overshadows the importance of high-resolution studies of lithic assemblages and their contribution to deciphering triggers of transition. Turning to the Levantine late Middle Paleolithic (MP) and IUP lithic assemblage variability and their temporal association, it is evident that innovative technological practices first seen in late MP become prominent in the IUP. The introduction and acceptance of innovative technological practices will be presented by comparing assemblages from recently excavated late Middle Paleolithic open-air sites in the northwestern Negev, Israel, to IUP assemblages from the southern Levant. Assuming that lithic assemblages act as proxies of behavioral flexibility and adaptability, the introduction and acceptance of innovations suggest that something in the social or ecological environment inspired the acceptance of changes. The presented data will then be used to discuss how these studies can contribute to explaining the spread of the IUP across Eurasia.

Godhardt, Ava (Waubensee Community College), and David Hyde (Western Colorado University)

[65] *As the End Draws Near: A Terminal Classic Surface Deposit at the Medicinal Trail Community*

During the 2024 field season, excavations at Group M of the Medicinal Trail Hinterland Community, an ancient Maya village in northwestern Belize, revealed a concentration of over 1,000 ceramic sherds against the western wall of Structure M-3. Group M is a nonresidential architectural group located at the northern terminus of the community, situated on a knoll, and that functioned as a ceremonial space. Structure M-3 is approximately 20 m long with a long axis running north-south and is located on the western side of the

central plaza. This deposit can be interpreted as a problematic deposit (PD), a deposit that does not clearly fit into established categories like caches, offerings, or other special deposits. This PD resembles a midden; however, its context in a ceremonial space suggests it would be linked to dedication and termination rituals, feasting, or pilgrimages. This PD also contain large quantities of smashed or broken vessels. This poster will examine the nature of these types of PDs as they relate to the ritual practices and functions of Group M, as it relates to the possible abandonment of the Medicinal Trail Community at the end of the Classic period.

Godhart, Ava [52] see Martin, Lauri

Godos, Fernando [26] see Scherer, Andrew

Goebel, Ted (University of Kansas), Caitlin Doherty (Center for the Study of the First Americans, Texas A&M University), and Kelly Graf (University of Kansas)

[57] *Clovis Technology and Settlement in the Southern Bonneville Basin of Utah*

Bruce Huckell was a leader in the study of Clovis and Paleo-Indigenous technology in North America, and his research has strongly impacted our thinking on the subject, the lead author for 35 years. Here we present results of our ongoing study of the Clovis occupation of the southern Bonneville basin, Utah. First, at the Hell'n Moriah site, located in Tule Valley of the Western Bonneville sub-basin, our test excavations confirmed a surficial Clovis context, with most artifacts lying on an exposed and deflated surface of the late Pleistocene lakebed, except for a few pieces that occur buried at the contact between this surface and overlying isolated coppice dunes. Second, at the Milford Flats sites in the Sevier sub-basin, our test excavations indicate similar settings, with Clovis loci in surface or near-surface contexts where thin mantles of loess are actively deflating. The single exception may be site 42MD2645, where a test pit led to the recovery of 116 artifacts in a ~20 cm thick sandy-silt deposit. Besides detailing these contexts, we describe the lithic assemblages recovered from these Clovis sites, interpreting Clovis technology and settlement in this region of the arid West, drawing heavily on Huckell's pioneering work on Clovis in the Southwest.

Goebel, Ted [382] see Doherty, Caitlin

Goebel, Ted [382] see Franco, Nora

Goebel, Ted [96] see Graf, Kelly

Goepfert, Nicolas (CNRS), Belkys Gutiérrez (BGL Arqueología), and Segundo Vásquez (Universidad Nacional de Trujillo)

[273] *Loma Macanche: The Unique History of a Millenary Archaeological Complex*

Loma Macanche is located in the middle valley of the Piura River, in the center of the so-called Alto Piura region. Made famous by the discovery of a looted gold plaque in the style of the Chongoyape ornaments in the 1990s, it has not been the subject of archaeological work since that time. In 2023, we began excavations on Mound 2, which is associated with the main mound of this important archaeological complex. Indeed, it is essential to rethink these kinds of sites not as single entities, but as multifaceted ensembles made up of a main mound (principal *loma*) and secondary mounds (*lomititas*). On Mound 2, the presence of burials from the Lambayeque-Sicán, Chimú and Chimú-Inka periods profoundly disrupted the original stratigraphy. In spite of this, a large number of diagnostic ceramic sherds have enabled us to identify an ancient occupation dating from the Middle Formative or beginning of the Early Horizon (local Ñañañique/Panecillo phases), though it lacks associated architecture. These elements have allowed us to establish a general occupation sequence for the site spanning almost 2,500 years between the Middle Formative and the Chimú-Inka period. *****Esta presentación incluirá imágenes de restos humanos.**

Goepfert, Nicolas [273] see Villa, Valentina

Gold, Micah [299] see Tu, Ruoyang

Goldberg, Samuel [341] see Perron, Taylor

Golden, Charles [26] see Scherer, Andrew

Goldstein, Steven (University of Pittsburgh)

[229] *Comparing Quartz Lithic Technological Organization of Early Holocene Foragers and Iron Age Farmers at Kakapel Rockshelter, Western Kenya*

Quartz is a readily available lithic raw material that formed a large portion of the stone tool economy for many ancient societies globally. Considered a lower-quality material overall, physical properties of crystalline vein quartz constrain reduction strategies, often resulting in a narrow range of tool and debitage morphologies. This leaves open questions of how variable strategies of quartz reduction can possibly be and whether assemblages produced through different behavioral patterns can be quantitatively differentiated. This paper addresses these questions through quantitative comparisons of large quartz assemblages from Early Holocene (9000–5000 BP) forager and Iron Age agropastoralist (1500–900 BP) occupations at Kakapel Rockshelter, southwestern Kenya. Given similar ecological conditions, resource availability, and raw material access, analyses tested whether major differences in subsistence economy and settlement pattern produced detectable variation in vein quartz lithic industries at Kakapel. While there no detectable differences in overall core reduction strategies between groups/periods, foragers and food-producer quartz technology differed in terms of nodule and hammerstone selection, types of tools produced, and reduction intensity. These findings indicate that despite constraints of low-quality lithic materials, meaningful variation between assemblages can exist and may reflect important dimensions of group mobility, land use, and economic organization.

Goldstein, Steven [63] see Grillo, Katherine

Golitko, Mark (University of Notre Dame), and David Grogan

[184] *Buffer Zones and Ecological Models of War: Theoretical and Archaeological Considerations*

Buffer zones, areas unoccupied due to conflict or threat of conflict, have been abundantly documented historically and ethnographically and recognized archaeologically in some regions. In the context of ecological models of warfare, their existence was taken by some to suggest that population and resource pressure did not contribute to conflict owing to the ability to cede valuable land. Alternatively, buffer zones have been viewed as a mechanism to address population-resource imbalances through the rejuvenation of resources in these areas. We examine the relationship between population density and buffer zone size using historical and ethnographic cases, and find a strong negative statistical relationship. Buffer zone width is severely constrained by population density, suggesting that the ability to cede land is constrained by resource requirements. Consequently, the existence of buffer zones may still indicate that resource stress contributes to conflict, and the opening of buffer zones may actually accentuate resource stress in some cases. We examine select archaeological case studies from the Americas and Europe to demonstrate the potentials and challenges of identifying buffer zones in ancient cases, as well as what their existence and size may suggest about the drivers and dynamics of ancient conflict.

Gómez, Carlos Cruz [324] see Gauthier, Laurianne

Gomez-Saavedra, Mirtha (Universidad de Tarapacá, Chile)

[228] *El sitio de Orozas: Interacción, arte rupestre y caminos prehispánicos en los valles interandinos de Tarija, Bolivia*

[WITHDRAWN]

Gómez-Valdés, Jorge [36] see Alarcón Tinajero, Edgar

Gonlin, Nancy (Bellevue College)

[106] *The Nocturnal Household Economy and Crafting after Dark in Mesoamerica: A Tribute to Ken Hirth*
Household archaeology contributes to our knowledge of the past by focusing on the smallest social unit of society that incorporates a cross-section of people, from rulers to followers. More recent analyses on the dynamics of household production consider quotidian practices in an around-the-clock fashion, from dawn to dusk, from sunset to sunrise. In this paper, I combine my perspective on the *Archaeology of the Night* (Gonlin and

Nowell 2018) with Ken Hirth's (2009) *Housework: Craft Production and Domestic Economy in Ancient Mesoamerica* to examine the nocturnal household economy. Ethnographic and archaeological data from a wide variety of cultures across Mesoamerica are mined to reveal evidence for craft production connected with the night. The affordances of the night would have facilitated crafting after dark when temperatures were cooler, the air was more humid, sounds were dampened, and darkness prevailed. In fact, some household members may have preferred activities reserved for nighttime, such as fishing, hunting, or spinning yarn. Lighting devices were essential for performing some nocturnal activities while others flourished in the darkness. Through the lens of nighttime household archaeology, an understanding of the full domestic economy becomes illuminated.

Gontarski, Sarah (Yale University)

[195] *Defining the Identity of the Gallinazo Period (200 BCE–200 CE, Peruvian North Coast): A Complex View of the Transitional Phases of the Salinar, Gallinazo, and Virú Periods through Ceramic Analysis and Burial Patterns*

Archaeologists have long sought to understand and identify the complexities and nuances of the Salinar (400–200 BC), Gallinazo (200 BC–AD 200) and Virú (200 BC–700 CE) cultures located on the northern coast of Peru, where there is much discussion and debate about the cultural and political identities and chronologies of each group. Based on previous work, such as that of Heidi Fogel, we consider that these groups may constitute diverse regional variations of a similar political system or a general culture in which living patterns and systems (i.e., pottery and funerary practices) remain similar with slight regional variations. Salinar, Gallinazo, and Virú require much more study and focus in order to understand their connections and differences, defining the timeline of the cultures of the North Coast of Peru. In this way, through the study of the morphology, decoration, and use of ceramics, along with funerary patterns, especially those of the transition periods between each group, it is intended to better understand the chronology, similarities and particularities of these groups or regional cultural variations.

Gontz, Allen [123] see Hoover, Kelly

Gonzales, Eric, Michele Bleuze (California State University, Los Angeles), and James Brady (California State University, Los Angeles)

[104] *Indigenous versus Archaeological Conceptualizations of the Cueva de Sangre, Dos Pilas*

The Cueva de Sangre, located some 2.5 km southwest of the central plaza at Dos Pilas, is the largest cave intensively investigated by the Petexbatun Regional Cave Survey with more than 3.2 km of passages mapped. With four entrances and passages running on multiple vertical levels, it is also the most complex cave investigated by the cave survey. To deal with the complexity, the cave was divided into 11 large segments designated "Operations." The exploration and investigation, however, utilized equipment and techniques that were not available to the ancient Maya so there is reason to suspect that the Maya were unaware that all the passages were part of the same interconnected system. This paper analyzes the human remains from six deposits recovered from Operations 5, 6, and 7 of the cave along with their ceramic and artifact assemblages accessed through Entrance 2. This analysis reveals a strikingly different form of utilization of these three operations suggesting the Maya may have utilized this subterranean landscape as a separate cave system altogether. ***This presentation will include images of human remains.

Gonzales, Mikayla

[63] *Implications of Ceramic Analysis on Rio Grande Glaze Ware from San Miguel de Carnué (LA 12924): A Puebloan Settlement within the Early Spanish Colonial Period of New Mexico*

Southwest archaeologists have largely overlooked historical Indigenous archaeology in favor of examining the prehispanic past. San Miguel de Carnué, located east of Albuquerque in central New Mexico, is a multicomponent site occupied intermittently from the Ancestral Puebloan to the Late Spanish Colonial period. Historic Pueblo people inhabited the site during the Early Spanish Colonial period, dating between the early 1500s to the Pueblo Revolt of 1680. Carnué was previously excavated in 1946 and most recently in 2022. This poster presents the results of an analysis of the Late Rio Grande Glaze Ware ceramic collections from the 1946 excavations. Utilizing typology, design and an in-depth temper compositional analysis, the results of this research offers new insight into who lived here, when, and what forces shaped their daily lives during this turbulent period.

Gonzalez, Juan [243] see Skowronek, Russell

González, Lorena (Proyecto Arqueológico Cuenca Mirador)

[383] *Investigaciones de una ocupación en un pequeño grupo residencial del Clásico Tardío en el Complejo Danta*
En el departamento de Petén Guatemala, en el sitio El Mirador, en la segunda plataforma del Complejo La Danta. Se encuentra un grupo denominado Saraguaté, que corresponde a una residencia del Clásico Tardío, se han realizado investigaciones en campo y en laboratorio, lo que ha permitido realizar comparaciones con diferentes grupos arquitectónicos del clásico entre otros. En este caso, el enfoque, después de varias temporadas y con el objetivo de obtener información sobre la arquitectura, ocupación y hallazgos más importantes, se ha investigado la residencia principal del grupo. uno de los grupos importantes adosados a una de la plataforma del gran complejo La Danta. Dentro de los hallazgos y datos importantes se ha tenido la evidencia de entierros correspondientes a personas habitantes de la residencia, estos con ajueres funerarios modestos, en el área se observan materiales arqueológicos de diferentes industrias, y arquitectura de la época la cual se menciona anteriormente. *****Esta presentación incluirá imágenes de restos humanos.**

González-Álvarez, David (Institute of Heritage Sciences [INCIPIT-CSIC])

[168] *Approaching the Big History from an Upland Valley in the Cantabrian Mountains (NW Spain): Transhumance Systems and Global Processes during the Last 500 Years*

The Cantabrian Mountains in northwestern Spain have been exploited by pastoralist groups since Late Prehistory (ca. 6000 BP), thereby shaping these landscapes in the *longue durée*. The anthropogenic pressure on the environment resulted in the transformation of upland areas, with forests being cleared to create seasonal pastures and forestry and mineral resources being exploited; landscapes were experienced by communities in connection with their beliefs and sociopolitical contexts. Despite prevailing views of mountains as wild, distant, or marginal areas remote from the centers of historical inquiry, our archaeological research in Babia (León, Spain) illustrates how these areas can also illuminate global processes such as modernization, world trade, and human adaptation to climate change. This paper examines the relations between transhumance systems in this remote mountainous area of Iberia and global processes such as colonialism, economic globalization, industrialization, and the rural decline in modern and contemporary times. To this end, changes and continuities in settlement patterns, the scale of herding production, and seasonal modes of transhumance are evaluated through the archaeological record to inform our long-term interpretations of land management, the dynamics of political relations among diverse social actors, and the scale of integration of this region within global historical trends.

Gonzalez Hernandez, Karina (INAH, Quintana Roo)

[83] *Excavaciones y conservación de la arquitectura y relieves del edificio Tutil 2, Dzibanche*

Como parte del proyecto PROMEZA: Dzibanché 23-24, se realizaron labores de mantenimiento arquitectónico y exploraciones arqueológicas en el edificio 2 del Complejo Tutil. Éste último se localiza a unos 2 km al poniente del centro monumental de Dzibanché, y consta de varias estructuras de gran tamaño organizadas alrededor de varias plazas; sin embargo, Tutil 2 se erige de manera independiente al sureste del conjunto, rodeada de estructuras de menor tamaño, principalmente de carácter habitacional. Con las exploraciones actuales y la información obtenida de trabajos previos (2002 y 2003) se pudo conocer su arquitectura la cual consta de un basamento de un poco más de 10 m de alto, solucionado en cuatro cuerpos con diseño de talud-tablero decorados con relieves de estuco con pigmento rojo, azul y verde; dos escalinatas centrales con alfardas, una perteneciente a una etapa posterior adosada al frente, por la que se accede a la parte superior del basamento donde se encuentra un edificio decorado con el diseño de pilastras pareadas, elemento arquitectónico local de Dzibanché. Al interior del edificio, en el panel central de la crujía posterior se localiza el mural denominado como “Las Antorchas cruzadas”. *****Esta presentación incluirá imágenes de restos humanos.**

Gonzalez-La Rosa, Luis Manuel (University of British Columbia), Aleksa Alaica (University of British Columbia), and Milton Luján Dávila

[343] *Community Care and Dental Health: Cross-Generational Tooth Wear at Cerro Pacifico, Peru*

Across the globe, progressive tooth wear is related to diet and cultural use of teeth. In the Andes, often high

levels of tooth wear are associated with the sandy grit in coastal diets. Extensive tooth wear is classified as an experience of old age. In these contexts, care is invoked as a practice for easing the pain of the elderly. Advanced tooth wear in younger individuals is often considered an isolated pathology, but a unique assemblage of human remains from the Late Archaic/Early Formative (3000–1800 BCE) site of Cerro Pacifico in the Lima Province of Peru presents an important case study where various individuals of varying ages present extensive tooth wear. This brings to debate the way we pathologize tooth wear for some age groups and not in others. This collection of over 30 human burials ranging from 6 months to 50 years provides an opportunity to assess the way we examine dental health. In this paper, we deconstruct the pathology of tooth wear and consider the contextual circumstances for tooth wear in younger individuals. Instead of classifying tooth wear as an impediment to daily practices, we propose that care was a community strategy to participate in food provision activities. *****This presentation will include images of human remains.**

Gonzalez-La Rosa, Luis Manuel [167] see Akimoff, Anya
Gonzalez-La Rosa, Luis Manuel [376] see Alaica, Aleksa

González López, Ángel (North Carolina Museum of Art)

[303] *Of Rain and Maize Deities: A Series of Polychrome Reliefs from the Templo Mayor*

This study analyzes an unpublished bench formed by a set of 48 polychrome stone reliefs from the principal Mexica (Aztec) temple, Templo Mayor, in Tenochtitlan. Since it was discovered in 1980, this set has been separated with some pieces still in situ and others that have been fragmented and put in storage, resulting in some of the contextual information being lost forever. Through museum storeroom exploration, iconographic analysis, historical research, and digital reconstruction of a 12 m long scene, this research recovers some of this information. These reliefs depict a procession of water and maize deities, serving as a form of political propaganda for the Mexica state, with the aim of rain propitiation. The results suggest that visual culture played a fundamental role in legitimizing power dynamics and consolidating the empire, manipulating the capital heritage to engage with past civilizations and articulating agricultural activities with state's interest. Data examination highlights that Mexica artists intentionally emulated chosen elements from the remote historical past and integrated them into novel contexts.

Gonzalez-Morales, Manuel [57] see Straus, Lawrence

Gonzalez San Martin, Ana (Brown University), and Sergio Escribano-Ruiz (University of the Basque Country [UPV-EHU])

[168] *Place-Marking as World-Making: Basque Pastoralism and the Landscape of Diasporic Identity in the American Southwest*

Between the nineteenth and twentieth centuries, an intensified flow of Basque immigrants streamed toward the Southwest of the United States. In the European mainland, Basques across the Pyrenees have practiced different types of seasonal transhumance for centuries. While Basque immigration had a historically strong pastoralist presence in South America, the case of the southwestern USA is associated with an exceptional phenomenon: The routes and landscapes through which shepherds conducted their herds are populated by thousands of tree-carvings, also known as arborglyphs. The arborglyphs display multiple themes and shapes, figurative and textual, in which Basque identity, folklore and cultural memory were etched into aspen and other soft-barked trees. Archaeologically, these arborglyphs are a unique and ephemeral window into moments, practices, and mobility-specific information that we can rarely address directly in our landscape assessments due to organic decay and issues associated with the “invisibility” of transhumant materiality. These arborglyphs provide an exceptional theoretical and methodological framework to develop notions of place, memory, mobility, and dwelling that go beyond the mere mapping of the phenomenon. They also provide insights into the materialization of diasporic identities, masculinity, *herri mina*—“nostalgia for the land”—and connectivity within the network of shepherders that frequented these routes.

Gonzalez-Tennant, Edward (University of Texas Rio Grande Valley)

[112] *Historical Archaeology of Tejano Erasure in the Rio Grande Valley*

Anglo settlement of the Rio Grande Valley began in the late nineteenth and early twentieth centuries. Part of

this colonization involved the whitewashing of the region's history, including the erasure of Tejano communities, descendants of earlier Spanish, Mexican, and Mestizo settlers. Historical scholarship has minimized this history until recently and instead focused on myths about the "taming" of the region by Anglo settlers. This paper discusses a collaborative project began in 2023 at a *rancho* in Starr County, Texas. The paper's focus is archaeology's emerging contribution to documenting and raising awareness about the region's Tejano and Mexican American culture. Ongoing efforts include working with descendants and the Texas Historical Commission to secure a historical marker for the site.

Goodale, Nathan [129] see Hampton, Ashley

Goodman, Ashley [314] see Powis, Terry

Goodman, Elizabeth (University of Illinois, Chicago)

[379] *Matériel Culture*

Most studies of twentieth-century conflict focus on the unprecedented destruction of people and places that was wrought during the wars. However, from an archaeological viewpoint, these conflicts were a time of proliferation of sites and items; some of these items include equipment and other supplies for the military and are herein termed "war matériel." War matériel was often the only resource in abundance in the times of precarity and alienation accompanying conflict. As such, war matériel was salvaged, curated, reused, transformed, and recycled during and after the twentieth-century wars and continues today. War matériel was often used in mundane and quotidian ways, but at other times it was transformed into exquisite art pieces. Importantly, all items and their users were defying the life-changing destruction, displacement, and chaos from which the matériel arose. Thus, matériel culture is some of the most meaningful of the twentieth century, providing insight into the "daily banality" (Gonzalez-Ruibal 2008) of wartime and postwar life. Matériel culture merits study before the memory of its origins is lost. Its study provides an alternative lens on history and a new way to engage with the aftermath of twentieth-century global conflict.

Goodman, Elizabeth [379] see Kestle, Caleb

Goodrum, Matthew (Virginia Tech)

[339] *Extending the Paleolithic into Central Europe: Heinrich Wankel and the Beginning of Paleolithic Archaeology in Moravia*

As paleontologists and archaeologists began to find flint artifacts in Pleistocene deposits in France and Britain in the 1860s, followed soon thereafter by human fossils and Paleolithic art objects, researchers across Europe raced to discover further evidence for Paleolithic Europeans. In Moravia, now part of the Czech Republic, Heinrich Wankel was the first archaeologist to discover Paleolithic sites in what was then the Austrian Empire. He excavated the important Paleolithic site of Predmost and motivated a small group of researchers who made valuable contributions to Paleolithic archaeology at the end of the nineteenth century.

Goodwin, Joshua [101] see Boucher, Anthony

Goodwin, Whitney [169] see Callaghan, Michael

Goodwin, Whitney [391] see Pengilley, Alana

Goralski, Craig (Cypress College)

[106] *Revisiting Past Research and Research Advisors: Ceramic Production, Distribution, and the Uapala-USulután Ceramic Sphere*

This paper revisits the author's 2008 dissertation research examining patterns of pottery production and distribution across southeastern Mesoamerica during the Late Formative and Early Classic periods. Under Ken Hirth's advisement as dissertation chair, Usulután pottery was collected from sites across a well-defined ceramic sphere and subjected to neutron activation analysis (NAA) to better understand which behaviors contributed to the sphere's formation and persistence. Nearly two decades later, the author reflects on his original research and Ken's mentorship. Conclusions from the dissertation work are examined in light of

additional data and considered more broadly as contributions to spatial pattern research and understanding ancient economies, two themes that have been central to Ken's research for so many years.

Gorczyk, John (Universal Engineering Sciences)

[155] *Identifying and Meeting the Challenges of a Jeopardized Workforce in Archaeology: A View from Texas*

Texas is the fastest growing cultural resource management (CRM) market in the United States, having recently surpassed California in the number of new compliance projects initiated. At the same time, university anthropology departments—the wellspring of talent and training for the archaeological workforce—face a crisis of enrollment and funding, jeopardizing the future of both academic and compliance-based archaeology. Universities in Texas face additional challenges imposed by top-down policies, most notably attacks against both diversity, equity, and inclusion (DEI) and funding structures for the humanities and social sciences. Drawing on interviews and surveys of archaeological professionals, educators, and students across Texas, this paper aims to identify and address some of the challenges facing both the successful growth of the CRM industry and the resilience of archaeological programs in higher education across Texas, situating both within a national context and discussing potential solutions that serve to ensure the successful continuation of archaeology within Texas.

Gordon, Gwyneth [89] see Cheever, Sylvia

Gore, Angela (SWCA Environmental Consultants)

[96] *Late Pleistocene Toolstone Provisioning in the Nenana Valley, Alaska*

The Beringian archaeological record is essential for understanding early human dispersals and adaptive strategies in the Americas. Despite a wealth of well-preserved lithic assemblages in interior Alaska, critical questions remain about how people adapted to dynamic late Pleistocene climate changes, particularly regarding toolstone procurement and selection patterns. While portable X-ray fluorescence (pXRF) is commonly used to analyze obsidian, non-obsidian volcanic toolstones such as dacites, rhyolites, basalts, and andesites are abundant in Alaskan assemblages. This paper synthesizes results from my dissertation research employing pXRF to analyze non-obsidian volcanic artifacts from late Pleistocene assemblages in the Nenana Valley, interior Alaska, to investigate early toolstone provisioning and landscape use. By integrating geochemical data with systematic regional surveys and lithic technological analyses, this study offers insight into toolstone provisioning behaviors and environmental adaptation and underscores the importance of combining lithic technological analysis, geological surveys, and geochemical techniques to provide a comprehensive understanding of regional toolstone procurement and use.

Gorenflo, Larry (Penn State University)

[289] *Revisiting the Role of Water Control in the Prehispanic Basin of Mexico*

Water control likely was essential for reliable agricultural production in much of the Basin of Mexico over centuries of prehispanic occupation. Deborah Nichols recognized this throughout her remarkable career, beginning with her doctoral research in the late 1970s but continuing through several studies of irrigation and ancient economies in different parts of the region. This paper builds on the research of Nichols and others on water control in the prehispanic basin, highlighting an analysis of settlement pattern data that identifies the likely widespread presence of irrigation in much of the region. It also explores climatic variability and challenges to water control in the basin based on geology, hydrology, and seasonal patterns of rainfall to explore both the importance of manipulating water and the difficulty in doing so over centuries of occupation. The paper identifies remaining opportunities to examine prehispanic water control in the Basin of Mexico in a landscape where urban sprawl and commercial crop production have compromised much of the archaeological record. It concludes by exploring implications for widespread water control on prehispanic sociocultural evolution and economy in a region that hosted large human occupations and complex societies for more than two millennia.

Goring, Daniel, Jelmer Eerkens (University of California, Davis), Nicolas Zwyns (University of California, Davis), John Steward (Bournemouth University), and Pierre Noiret (Liege University)

[320] *Reconstructing the Ecology of Cave Bears: Isotope and Proteomic Insights from Trou al' Wesse, Belgium*

The cave bear (*Ursus spelaeus*) inhabited Europe and Asia during the Pleistocene becoming extinct around 24

kya during the Last Glacial Maximum. Cave bears coexisted with Neanderthals and early modern humans under similar climatic and ecological conditions, leaving traces to improve our understanding of Pleistocene environments. Within their geographical and chronological range cave bear remains are found at many sites across Europe and Asia. However, we have an incomplete understanding of cave bear ecology and their interactions with Neanderthals and modern humans. Trou al' Wesse, a cave site in southern Belgium, contains Pleistocene deposits dating to MIS 3 (ca. 55–25 kya), and has a wealth of faunal material. Cave bear remains are the most common large faunal elements inside the cave at Trou al'Wesse and show signs of having denned in the cave with disproportionate numbers of old and young individuals. This initial study focuses on proteomic and $\delta^{13}\text{C}$, $\delta^{15}\text{N}$, and $\delta^{34}\text{S}$ stable isotope analysis of the cave bears to enhance our understanding of the climatic and ecological environments during their occupation of Trou al'Wesse. This will eventually lead to a better understanding of the Neanderthals and early modern humans who existed within the same cave during MIS 3.

Gosling, Anna [173] see Matisoo-Smith, Lisa

Gottsfeld, Andrew (Burns & McDonnell)

[94] *Stratigraphy and Site Formation Processes at the Tinder Shanty Site (23JA1857), Kansas City, Missouri*

In the 1870s and 1880s, Kansas City completed an ambitious large-scale grading program to build roads and neighborhoods on the dissected and uneven Pleistocene loess bluffs overlooking the Missouri River Valley. An estimated 6–10 feet of earth was removed off the top and used to extend and raise Missouri River Valley bottom land elevations and for various other construction projects. After the grading and filling and prior to new road and neighborhood construction, the Patch, a predominately African American shantytown settlement, arose along the Missouri River Valley and stretched along portions of the bluffs on the margins of Kansas City's Old Town Neighborhood, sandwiched between the red-light district and West Bottoms. During the Broadway / Buck O'Neil Bridge Replacement Project, archaeologists excavated the remnants of one of these Patch-related Shanty dwellings, revealing evidence of multiple occupations separated by a community dumping event. This paper discusses site formation processes and stratigraphy at the site and associated historical figures that contributed to its formation.

Govin, Aline [165] see Boeda, Eric

Goyette, Kyr, Aspen Greaves (University of Pittsburgh), and Emily Eklund (University of Pittsburgh)

[125] *Creation of a Macrobotanical and Phytolith Reference Collection for Archaeobotanical Investigation in Tarvagatai Valley, Mongolia*

Limited ethno- and archaeobotanical studies have been conducted on the forest-steppe ecological zone of northern Mongolia. This project focuses on the creation of a macrobotanical and phytolith reference collection of flowering plants in this region as part of ongoing archaeobotanical research with the Tarvagatai Valley Project, particularly in the excavation of Mongol-era (1206–1500 CE) habitation sites. In the collection, special attention was paid to the medicinal properties and traditional uses of these plants to allow for the potential to make connections between archaeobotanical remains and medicinal utilization of various flora. In the field, 39 plants were selected and sampled; two samples of each plant were collected with the intent to preserve one sample in a macrobotanical herbarium and process the other for a permanent phytolith reference. During analysis of samples, 36 species were identified, the majority of which have recorded medicinal usage. While not a comprehensive sample of medicinal plants in northern Mongolia, this collection represents a step forward in identifying pastoralist use of wild plants.

Gräbe, Pieter-Jan [284] see Beller, Jeremy

Graf, Kelly (University of Kansas), Lyndsay DiPietro (Baylor University), Richard Vachula (Auburn University), Julie Esdale (CEMML), and Ted Goebel (University of Kansas)

[96] *Geoarchaeology at Shég' Xdaltth'í', a Multicomponent Late Pleistocene Archaeological Site in Interior Alaska: An Update*

Shég' Xdaltth'í', located just 55 km south-southeast of Fairbanks, Alaska, is a well-stratified site with multiple components spanning from 14 to 5 ka. In five years of block excavation, we have found more than 50,000 materials in situ, including lithic and osseous artifacts, faunal remains, and macrobotanical remains. In addition, we have identified and mapped several domestic features. All materials were found in unconsolidated eolian deposits. With this paper we present an update on the radiocarbon dating of the site, site stratigraphy, and soil micromorphology. We also present results from new soil and feature geochemistry, biomarker, and micro-charcoal analyses to present a better picture of site formation and paleoenvironmental reconstruction in the vicinity of the site.

Graf, Kelly [382] see Franco, Nora

Graf, Kelly [57] see Goebel, Ted

Graham, Carole [55] see Field, Sean

Graham, Caroline, Lia Kitteringham (Colorado State University; Chronicle Heritage Group, Denver, CO), Abhishek Sathiakumar, and Cannon Kelly (Colorado State University)

[128] *A Comparative Approach to Characterizing Magnetic Geophysical Anomalies on the Pinson Landscape with Regard to Excavated Features*

Since the 1990s, geophysical surveys have played an important role in identifying and surveying, planning excavations at, and interpreting archaeological sites in North America. Magnetic differences in soils and sediments have been one near universal advantage to archaeologists who utilize geophysical surveys for a variety of reasons in their research. However, understanding the magnetic response of buried archaeological and natural features requires a close understanding of depositional and formation processes inherent to localized geomorphic landforms. In this poster we compare magnetic values from surveys and excavations at three archaeological sites along the South Fork of the Forked Deer River in West Tennessee associated with Pinson Mounds State Archaeological Park. Our comparative analyses across these sites on similar landforms, comprised of similar soil composition, provide a foundation through which we attempt to characterize archaeological features at the Elijah Bray Site (40CS95). We integrate magnetic values, shape of magnetic response, and excavation data to better discern what certain magnetic signatures might indicate with respect to feature type. Applying this analysis to other magnetic anomalies, and future magnetometer surveys, on the Pinson Landscape could help better inform feature excavation planning and site interpretations.

Graham, Caroline [314] see Henry, Edward

Graham, Caroline [128] see Sathiakumar, Abhishek

Graham, Elizabeth (University College London), and Gabriel Wrobel (Michigan State University)

[283] *Not Just Trade but Power: Merchants, Traders, and the Maya Economy*

“No sólo comercio sino también poder” was the title of a paper Graham presented at the Congreso de Mayistas in Izamal in 2016 and expanded on in Kyoto in 2017. The core problem, however, remains unsolved and worth investigating: What was the role of the commercial classes in the Maya dynastic collapse and in instigating the changes that came to characterize the Postclassic world? In this presentation we update the work being carried out at Marco Gonzalez on Ambergris Caye, Belize. We describe the community's changing character over time and propose hypotheses to account for its resilience. *****This presentation will include images of human remains.**

Graham, Helen [297] see Hofland, Samantha

Grant, Jennifer (CONICET-Instituto Nacional de Antropología y Pensamiento Latinoamericano), Agustina Ferreyra Cauton (UBA, INAPL), and Martin Casanova Menendez (CONICET, INAPL)

[331] *Mobility and Commensality in Early Agropastoral Societies of the Argentine Puna: Faunal, Pottery, and Architectural Approaches*

The circulation of goods over medium and long distances in prehispanic Andean agropastoral societies, and its connection to caravan practices, has been a topic of interest for generations of archaeologists. However, the link between mobility patterns and feasting has been less explored, particularly in the southernmost region of the south-central Andes. The aim of this paper is to detect commensality and mobility practices in early agropastoral societies (500 BC–AD 1000) of the Antofagasta de la Sierra region (Southern Argentine Puna) through an analysis of animal bones, stable isotopes, pottery, and architectural data, using Corral Grande I as case study, and comparing it with other archaeological sites from the region with similar chronology. Preliminary results suggest that Corral Grande I may have functioned as an aggregation site where feasts were held to foster a sense of community and solidarity, providing a gathering space to facilitate interaction among groups that share a common way of life but are dispersed across the landscape.

Grauer, Kacey [107] see Nissen, Zachary

Grávalos, M. Elizabeth [331] see Bria, Rebecca

Gravel-Miguel, Claudine, and Alex Fetterhoff (New Mexico Consortium)

[114] *A Multigenerational Workflow: Applying Deep-Learning Tools on Old Maps to Detect Near-Invisible Historic Sites*

While archaeologists aim to use the latest technology to detect, classify, or analyze archaeological sites, they still face the classic problem that some sites are simply no longer visible due to soil deposition and erosion. While satellite imagery and aerial lidar data can sometimes help us see the outlines of certain buried archaeological features, sites covered by thick layers of sediment or that have been anthropogenically modified can still evade us. This is where going back to old data sources such as plat or general land office (GLO) survey maps can prove useful. In most cases where they are available, plat or GLO maps preserve information on land ownership, homesites, or other human-made features that were deemed important by original surveyors and can still be useful during modern archaeological surveys. Unfortunately, most of those maps are not georectified or vectorized, and thus cannot easily and quickly be used to pinpoint site locations on the landscape. Here, we present our workflow to train machine-learning models on old georectified survey maps to extract the location of georectified homesites and legacy roads and thus create a GIS resource that can help cultural resource managers better document and protect their land.

Gravel-Miguel, Claudine [156] see Cadieux, Agathe

Gravel-Miguel, Claudine [114] see Peck, Katherine

Gravel-Miguel, Claudine [114] see Snitker, Grant

Graves, Michael (University of New Mexico)

[173] *Keeping Up with Style: Melinda Allen's Impact on the Study of Stylistic Variability in Oceania*

In 1996, Melinda Allen published an article in the journal *Antiquity* on “Style and Function in East-Polynesian Fishhooks.” This paper illustrates one of Allen’s research strategies: identify a critical gap in archaeological method and theory affecting substantive archaeological outcomes, and then propose a better way of conceptualizing, measuring, and accounting for archaeological outcomes. In this instance, Allen deploys an evolutionary distinction between style and function for the analysis of fishhooks in Polynesia. She then demonstrates how the practice of classifying fishhooks typologically missed significant variability, combining stylistic and functional traits into individual units. And in so doing, it likely conflated changes in transmission and those related to adaptation. By carefully distinguishing style from function, Allen arrays fishhooks into a temporal sequence and identifies the emergence of functional fishhook traits related to improvements in fishing technology linked to specific environments. Allen’s contribution has informed archaeological research on style ever since, and it prompts this review of analyses of fishhooks and architecture in

Oceania. This is illustrated by stylistic research on portable and non-portable artifacts in Hawai'i.

Graves, William [270] see Leckman, Phillip

Grayson, Donald (University of Washington)

[280] *David J. Meltzer: The Quintessential Interdisciplinary Scientist*

This year's Fryxell Award, for general interdisciplinary contributions to archaeology, has gone to David J. Meltzer. Perhaps the quickest introduction to the breadth, depth, power, and focus of Dr. Meltzer's contributions in this realm is provided by his 2015 book, *The Great Paleolithic War: How Science Forged an Understanding of America's Ice Age Past*, published by the University of Chicago Press. The title, combining science with our attempt to understand the peopling of the Americas, tells part of the story: Dr. Meltzer's career has focused on deepening our understanding of the earliest Americans by using a remarkably broad range of tools provided us by science as a whole. How broad has that range been? The catalogue of the University of Chicago Press gives us a strong hint. In addition to placing *The Great Paleolithic War* alongside its famous works in the history of science, it also places it with its offerings in five different scientific disciplines: Archaeology, Geology, Paleobiology, Paleontology, and Physical Anthropology. Even that, as I hope my brief review of Dr. Meltzer's interdisciplinary accomplishments will show, omits some of the disciplinary tools he has used, and is using, to probe the oldest archaeological records provided by the Americas.

Greaves, Aspen (University of Pittsburgh), Jargalan Burentogtokh, and William Gardner (Yale University)

[86] *Agropastoralist Subsistence Strategies in a Mongol Empire (1206–1500 CE) Household*

As the second largest empire of all time, the Mongols had immense impact on the political, social, and material trajectories of most of the Eurasian continent, but little is known about the lives and choices of the original pastoralist subjects of the empire. Important research on Mongol-era subsistence has come from large urban or palatial sites like Karakorum, Avagra, or Khar Khul Khaany Balgas, as well as from historical records; less is known about the strategies employed by small-scale actors. Ongoing research at a Mongol habitation in Tsagaan Ereg, a multi-period occupation site in Tarvagatai Valley, north-central Mongolia, has included systematic sampling for flotation and archaeobotanical materials. In addition to the characterization of the abundant faunal remains, this represents one of the most comprehensive datasets on the subsistence choices of this previously overlooked category. Interestingly, this includes evidence for agropastoralism, adding to the current argument against a "pure pastoralist" view of historic Mongolian subsistence.

Greaves, Aspen [125] see Goyette, Kyr

Greaves, Russell (Office of Contract Archeology, University of New Mexico)

[42] *Ethnoarchaeology beyond the Ethnographic Details: Observations of Technologies Relevant to the Longer Time-Scale of Archaeological Site Formation*

Ethnoarchaeological data collected among Savanna Pumé hunter-gatherers of Venezuela across 30 months of fieldwork provide unique views of tool manufacture, use, and discard. Behavior observation quantified the amount of time that women and men spend in a variety of technological production and use tasks.

Observations demonstrate the importance of situational uses of technologies in activities beyond the particular functional designs of those tools. For example, during foraging trips, bows and arrows are used more frequently for non-projectile uses than to fire arrows. I look at the frequencies of production and use of organic implements compared with more durable items (wood, steel, other market tools) that are analogous to lithics or ceramics in archaeology. Organic materials and tools command more time and space use than any manufacture or use of durable raw materials or implements. The frequencies and activities observed around hearths indicates that women's activities dominate the observed time use adjacent to hearths, and men are dramatically less tethered to these features. Ethnoarchaeology focusing on use events provides critical insight into the dynamics of technological systems. Long-term fieldwork also can get beyond the ethnographic details and address the deeper temporal scales represented in the formation of the archaeological record.

Grebenkemper, John (Institute for Canine Forensics)**[243]** *Canine Detection of Scattered Scent from Historic Dismembered Human Bodies*

One of the most difficult canine detection tasks for historic human remains detection dogs is finding the scent from a dismembered body that is hundreds of years old. When a body is not buried and left on the surface, animal activity will scatter the bones and flesh over hundreds of meters. Each of these pieces of flesh and bone will decompose and deposit their decomposition scent into the soil. The intensity of these multiple scent sources is orders of magnitude weaker than the scent from a buried body. In some cases, the scent will only be slightly above a dog's threshold of detection. Minor differences in the environmental conditions can change whether a particular location is positive or negative for scent. This paper will explore multiple historic sites where bodies were not buried and canine detection indicated scattered scent over a wide area.

Green, Austin [196] see Cole, Kasey

Green, Austin [196] see Dunn, Auriana

Green, Chontal [383] see Hansen, Richard

Green, Dawn [174] see Armitage, Ruth Ann

Green, Eleanor [376] see Speller, Camilla

Green, Helen (University of Melbourne), Faris Ruzain (University of Melbourne), Andrew Gleadow (University of Melbourne), Rachel Popelka Filcoff (University of Melbourne), and Belinda Martin (Flinders University)**[174]** *Advances in Using Oxalate-Rich Mineral Coatings as Dating Tools in Australian Rock Art Shelters*

Oxalate-rich, glaze-like mineral deposits are commonly found on low-angle surfaces in Australian rock art shelters. The synchronous growth of individual layers in these deposits across the Kimberley region of northwest Australia, suggests an environmental control, though the exact nature of this link is unclear. Some glazes, associated with Indigenous rock art, may serve as dating tools if oxalate biomineralization can be confirmed. This could link their formation to specific conditions and highlight their potential as paleoenvironmental archives when growth intervals are constrained by radiocarbon dating. Importantly, these deposits form on timescales relevant to the region's rich rock art record, and a link between accretion formation and environmental conditions may provide opportunities to match regional scale change to transitions observed between styles in the detailed rock art sequence. In this study, gas chromatography-mass spectrometry, inductively coupled plasma-optical emission spectroscopy, and X-ray diffraction analysis, provide an improved understanding of the chemical and elemental composition of these materials and their potential sources. By identifying glaze-specific biomarkers and using metagenomic data, we propose a microbial formation mechanism for these deposits. This offers insights into the environmental conditions and processes influencing their formation and enhances their usability and reliability as dating and paleo archival tools.

Green, Helen [174] see Finch, Damien

Green, Helen [174] see Gleadow, Andrew

Green, Helen [174] see Hellstrom, John

Green, Jennifer [88] see Wallis, Neill

Green, Madelynn**[298]** *Traveling Jack: Tracing Settler Identity through Appalachian Folklore*

Archaeology and folklore have long had a tense relationship, but in an era of archaeology focusing more and more on the current and descendant communities it is imperative for archaeologists to begin engage folklore traditions in their work. By engaging archaeology and folkloric methods both fields can benefit. In the case of this study, I have used the "Traveling Jack" story, a common folk tale with English, Scottish, Irish, and Appalachian versions that involves a young man using his wits to overcome a series of challenges to achieve

various happy endings, to trace Scottish and Irish settlement and reinvention in the Appalachian Mountains of the US South. By analyzing various “Traveling Jack” tales and comparing motifs across cultures I argue that Scottish and Irish identities are maintained in Appalachian identity through “Traveling Jack” tales.

Green, William, Thomas Emerson (Illinois State Archaeological Survey), and Robert Cook (Ohio State University)

[370] *The Midcontinental Journal of Archaeology and Its Role in Promoting and Unifying Regional Archaeological Research Agendas*

The Midwest was an early center for training professional archaeologists in the 1930s–1940s, but area researchers only slowly developed a sense of regional identity. The Midwest Archeological Conference (MAC), created in the mid-1950s, consisted for decades of simply an informal annual meeting. In 1976, with MAC still an anarchic, seat-of-the-pants enterprise, several conference regulars inaugurated the *Midcontinental Journal of Archaeology* (MCJA). MCJA’s founding and continuing mission is to publish papers about the archaeology of the region between the Appalachian Mountains and the Great Plains, from the Boreal Forest to the mid-South. While the journal focuses on research from this heartland region of the United States and Canada, it also publishes on relevant theoretical and methodological issues. MAC’s incorporation in 2002 formalized its role as MCJA’s owner. After bouncing between various publishers, MCJA now publishes three issues per annum totaling ~300 pages through the University of Illinois Press, which provides formatting, printing, and distribution services. MAC-MCJA also publishes collections of papers that address specific themes, sites, or topics as open-access Occasional Papers. Manuscript submissions, review, and publication are managed through the Scholastica publishing software platform. The journal employs a freelance copy editor and is funded through MAC memberships, institutional subscriptions, and occasional contributions.

Greening, Spencer [240] see Letham, Bryn

Greenwald, Alexandra (University of Utah), Gregory Burns (University of Utah; National Park Service), and Hayley Kievman (University of Utah)

[126] *Indigenous Cradle Technology and Maternal Foraging Efficiency*

Indigenous North Americans, including peoples of the Mountain West, invented and use(d) cradles to transport infants during maternal activities. Energy expenditures and return rates of mothers foraging with infants using carrying technology is understudied but an important consideration among groups relying heavily on caloric contributions from women. We replicate foraging conditions representative of precolonial western North America and compare the energetic costs of foraging in females ($n = 6$, ages: 21–37 years) under three infant-carrying conditions. We measured activity through accelerometry and metabolic rate (Kcal/h) through indirect calorimetry of foraging “unloaded” and carrying a 10 lb load in a cradle and in a sling. Average energy expenditure foraging unloaded was 194 kcal in a 1-hour bout, 197 kcal with cradle technology, and 186 with sling technology. Average caloric value of foraged acorns was highest for unloaded bouts (11,066 kcal), followed by cradle-carrying bouts (10,616 kcal) and sling-carrying bouts (9,446 kcal). While cradle-carrying resulted in greater caloric expenditures compared to foraging unloaded or with a sling, foragers using cradles experienced higher return rates and greater foraging efficiency than foragers carrying infants in a sling. Cradles provide greater freedom of movement than sling-carrying and is/was an important technology in economies relying primarily on women’s labor to gather and process resources.

Greenwald, Alexandra [126] see Dodge, Sophia

Greenwald, Alexandra [126] see Kievman, Hayley

Greenwood, Kate (Greenwood Consultancy)

[315] *Connecting Bark and Wooden Material Culture to Culturally Modified Trees in Yagera Country, South East Queensland, Australia*

This paper will present research findings of a PhD project conducted in a collaborative partnership with Yagera Daran (Indigenous Traditional Owners) research partners. In Australian archaeology there has been a relative absence of research linking bark/wooden material culture to culturally modified trees. This paper argues that understanding the form of bark/wooden artifacts, the tree species and the part of the tree that

they are created from, is fundamental to understanding the full context of culturally modified trees. Often, significance assessments about culturally modified trees are carried out without a base knowledge of the cultural and socioeconomic importance of trees to Traditional Owners. Such an approach can lead to the destruction of culturally modified trees for residential housing, roads, and other infrastructure development projects. Museums in Australia and the United Kingdom that house bark/wooden material culture removed from Yagera Country in South East Queensland were recorded as part of this research. In this paper it is argued that connecting Traditional Owners with their material culture heritage, along with fieldwork to document culturally modified trees and interviews to embed community perspectives, will lead to more holistic significance assessments—resulting in the better protection of these endangered Indigenous cultural heritage sites.

Greer, John [334] see Greer, Mavis

Greer, Mavis (Greer Archeology), and John Greer (Greer Archeology)

[334] *Central Wyoming Rock Art and What it Reveals about the People Who Used this Region*

Central Wyoming is surrounded by distinctive rock art styles—Dinwoody to the west, Plains Ceremonial and Biographic to the east, and styles south into Colorado previously attributed to Fremont, Ute, and Comanche. Presence of these distinctive styles locally demonstrates that people responsible for those styles diverged from what we consider their primary homelands and geographically overlapped in the central part of the state. Thus, rock art sites in central Wyoming are viewed not only from the perspective of how they relate to each other but to other sites outside the region. The sites indicate how diverse external groups utilized and spent time here, either contemporaneously or at different times, and how they and their belief systems are represented and presumably interacted.

Gregory, Brittney

[369] *Geoarchaeology at TxDOT: Case Studies from Data Recoveries in Texas*

Geoarchaeology is an important resource for archaeologists in cultural resources management (CRM). The Texas Department of Transportation (TxDOT) has championed the benefits of geoarchaeology by commissioning the development of statewide, geographic information systems (GIS)-based predictive models for locating prehistoric archaeological sites. As an agency, TxDOT is striving to incorporate geoarchaeological studies into all aspects of our archaeological program, from background studies and surveys to planning for data recovery excavations. Here we will look at a few sites in which TxDOT employed preliminary geoarchaeological studies to guide data recovery field efforts. Through these preliminary geoarchaeological studies, TxDOT was able to strategically target specific occupational surfaces and optimize hand-excavation efforts. Going forward we hope to implement this geoarchaeological paradigm for all CRM data recovery excavations.

Gregory, Brittney [112] see Norment, Aaron

Grenda, Donn (Statistical Research Inc.)

[377] *Sample Size Matters: Advances in Archaeological Method on Large Data Recovery Projects during the 2000s and Beyond*

During the 1980s and 1990s, California archaeologists tried to increase the volume of soil being excavated with the goals of increasing the sample size from sparse middens and understanding internal site structure. Digging more required a way to process more dirt and to keep track of thousands of proveniences. During the 2000s, SRI conducted a number of very large data recovery projects that allowed for the refinement of mechanized archaeology. Gradalls, mechanical screens, 3D scanners, relational data bases, and even optical sorting machines were employed to help us gain a better understanding of sparse middens by allowing us to excavate, screen, and sort entire sites. These tools not only increased our sample size and ensured nothing was missed but also improved the recovery of rare and fragile items. Mechanical screens reduced processing time, caused less damage to artifacts, and shifted personnel from shaking screens to sorting materials. This had the added benefit of reducing crew fatigue and accidents. This paper presents several of these methods across a variety of project conducted during the 2000s and discusses which methods continue to be employed.

Griffin, Delancey (Columbia University)**[212]** *Reflecting on Indian Removal: Healing Dispossession through Archaeology*

Within the growing subfield of Indigenous Archaeology there is still a large gap in meaningfully addressing removal, characterized by the Indian Removal Act of 1830 that aimed to relocate Indigenous people West of the Mississippi through treaties and by force. Indigenous students experience an added personal layer in studying archaeology: in my case, my research interests are fueled by my culture and a desire to serve my people. As a citizen of the Cherokee Nation of Oklahoma, removal is something we are all very conscious of, and the dispossession of our land, belongings, and resources still has a harmful impact on our community. I will discuss the ways in which reconnecting with archaeological materials can serve as a form of healing for dispossessed people, for example through the revitalization of art forms and language, and tracking survivance through time and space. My paper reflexively explores the intersection of the professional and the personal in the role of an Indigenous archaeologist who aims to address removal in and through archaeology.

Griffin, Gabriel [92] see Lowry, Sarah

Griffith, Cayden, and Zachary Griffith**[65]** *Space Syntax Analysis of Stirling Phase (1100–1200 CE) Monks Mound*

We use spatial syntax to construct access map models for Monks Mound, the central and largest mound at Cahokia, during the end of the Stirling phase, as this was a time of great change with respect to both architecture and religious practice. We use access analysis to measure the Depth from the Exterior (DE), the Real Relative Asymmetry (RRA), and the potential Control Values (CV) of spaces on Monks Mound. The RRA and the DE allows us to quantify *global accessibility*, allowing us to see how architecture may shape interactions of people coming into Monks Mound from the exterior. The CV allows us to quantify the *local accessibility*, how built space shapes interactions within Monks Mound as if it were a closed system. Spatial syntax analysis has not previously been applied to Cahokia. Through the application of spatial syntax, we aim to provide a more complete picture of Monks Mound by analyzing the connections between constructed space and elements of religion, politics, and social organization. Our analysis provides insight into the societal and religious organization of Monks Mound and the site of Cahokia as a whole and a greater understanding of the largest sites of precolonial North America.

Griffith, Zachary, and T. L. Thurston (University at Buffalo, SUNY)**[51]** *Polity, Collectivity, and Trade: A Mediterranean Island across Temporal and Social Boundaries*

This paper examines the organization and control of trade on Sicily and the different forms of polities on Sicily during shifts across the traditional archaeological boundaries of Neolithic, Bronze Age and Iron Age. In other parts of Europe, these periods are currently conceptualized as going from more egalitarian, to more authoritarian, to more egalitarian again. Often, developing forms of polity are assessed only through comparison of social conditions via household wealth or individual status displayed in burials. Instead, we add economic concepts from Collective Action Theory: how leaders and/or rulers fund (or fail to fund) both public goods and their own regimes—collectivity and joint production versus non-collectivities such as external revenue or coercion. How do shifting forms of trade and shifting forms of polity compare with extant assessments of developments in social differentiation?

Griffith, Zachary [65] see Griffith, Cayden

Grillo, Katherine (University of Florida), Steven Goldstein (University of Pittsburgh), Anneke Janzen (University of Tennessee, Knoxville), Emmanuel Ndiema (National Museums of Kenya), and Elisabeth Hildebrand (Stony Brook University)**[63]** *African Humid Period Ceramics in the Turkana Basin, Kenya: New Data from Lothagam Lokam (and New Chronological Challenges)*

Ceramics produced by fisher-hunter-gatherers during the African Humid period (AHP) are recognized archaeologically throughout northwest Kenya's Turkana Basin, predating the arrival/adoption of cattle-based pastoralism and "Nderit" ceramic traditions ~5,000 years ago. Some AHP ceramics in the Turkana Basin share well-documented decorative similarities with Wavy Line and Dotted Wavy Line pottery, suggesting

cultural connections with the Sahara and Nile Valley. New excavations of stratified occupational contexts at Lothagam Lokam provide evidence for early and repeated site use, including discard of thus far unidentified and stylistically diverse AHP ceramics, in areas separate from mortuary activity. Some radiocarbon dates on bulk organic material in this pottery are surprisingly old. We present here initial results, acknowledging complex geomorphological dynamics at a site where shorelines repeatedly shifted with lake level changes, and solicit feedback on chronological and stratigraphic interpretation of Lokam's fisher-hunter-gatherer settlement history and craft production.

Grillo, Katherine [123] see Fennessey, Brenna
Grillo, Katherine [223] see Nishida, Talia

Grogan, David [184] see Golitko, Mark

Gronenborn, Detlef [228] see Ganiyu, Abiodun

Groskopf, Cyndal

[323] *It Takes a Village: Relationships within an Institution*

The State Industrial School in Golden, Colorado, was established in 1881 to rehabilitate criminalized young boys. The boys here experienced building relationships with one another, the faculty, and the city of Golden under the isolating and ritualized methodology of institutionalization. Use of direct sources such as a daily newspaper produced by the boys, biennial reports produced by the school, and records from the city of Golden show the product of these relationships. Additionally, using an unmanned aerial vehicle (UAV) acquired point cloud data (lidar) this research highlights the changes over time in landscape and architectural structures regarding security changes, landscape memory, and privacy at the Boys Industrial School. This poster dives into the concept of the ritual of institutionalization and the result that has on the overall culture and relationships that can be seen in the historical documentation of the State Industrial School around the beginning of the twentieth century. The social perception of the school from both internal and external sources influenced the ritual performed by the State Industrial School and left a lasting impact on the boys, the faculty, and the community of Golden.

Grosman, Leore [65] see Betts, Chelsea

Grote, Mark [117] see Snyder, Thomas

Grouard, Sandrine [288] see Giovas, Christina

Gruenthal-Rankin, Ariel [321] see Ramsier, Marissa

Gruver, Steph (University of Florida)

[224] *Clamoring for Strength: Marine Mollusk, *Donax obesulus*, from the Peruvian North Coast Unveils the Strengths of Early to Late Intermediate Period El Niño Events*

Throughout the Early to Late Intermediate periods (200 BCE–1476 CE), the north coast of Peru witnessed the rise and fall of powerful sociocultural groups. People of the Moche religious tradition and the Chimú state experienced multiple flooding events related to the El Niño phenomenon that tested their strengths and engineering. At ~600 CE, the Moche temple of Huaca de La Luna suffered erosion due to El Niño-related rains. The event coincided with a major shift in the Moche religious tradition and potentially its collapse. At ~1300 CE, El Niño-related flooding severely damaged portions of the Chicama-Moche intervalley canal. Chimú engineers intended for the canal to increase the state's agricultural surplus and economic power. Its reduced functionality forced the Chimú to shift their economic strategy to extracting resources from conquered territories. Some scholars suggest this weakened the Chimú state and ultimately allowed them to be conquered by the Inca. Were these specific El Niño events unprecedented in their strength, or were they one of many factors involved in these groups' demises? Archaeological remains of the marine mollusk *Donax obesulus* from the north coast site of Uripe will aid in answering this question with a new high-resolution local paleoclimate reconstruction.

Guatame Garcia, Ana Carolina [41] see Sarmiento Rodríguez, Juan

Guevara-Duque, Maria Isabel (University of Illinois, Chicago)

[80] *Beyond the Green: Characterizing Copper Artifacts from the Yaguachi Chiefdom, Guayas, Ecuador*

This presentation showcases results from research on the metallurgical traditions of the Yaguachi chiefdom, a regional polity within the Milagro-Quevedo society that thrived in the Guayas Basin, Ecuador, between 400 and 1400 CE. Despite the region's apparent lack of local metal sources, the presence of copper alloys and other metals in burial sites suggests extensive trade networks and metallurgical expertise. This research focuses on several metal artifacts from the Vuelta Larga burial mound. It employs energy-dispersive X-ray fluorescence (EDXRF) and scanning electron microscopy coupled with energy-dispersive X-ray microanalysis (SEM-EDS) to analyze their composition and understand their cultural significance. These analyses reveal a diverse range of copper alloys, indicative of various metallurgical practices that might correlate with the artifact's social status and function. Moreover, the alloy types align with known metallurgical traditions from contemporary Andean societies, suggesting interregional exchange and influence. This analysis enhances our understanding of the Yaguachi chiefdom's metallurgical practices, trade networks, and social hierarchy, contributing to broader discussions on precolumbian metalworking in the Andes. The study also underscores the need for further metallurgical analysis in Ecuador to fully elucidate the complexities of regional interactions and technological innovation during the Integration period. ***This presentation will include images of human remains.

Guía Ramírez, Andrea [56] see Fujita, Harumi

Guillet, Sébastien [45] see Raillard Arias, Daniela

Guillory, Kayta [191] see Zekas, Sophia

Guiry, Eric [288] see Kennedy, Ryan

Guiterman, Christopher [375] see Roos, Christopher

Gunchinsuren, Byambaa [332] see Khatsenovich, Arina

Gunn, Joel, and Lynda Folan (Universidad Autónoma de Campeche)

[349] *William J. Folan, Engineer of Walter W. Taylor's Vision of a Conjunctive Archaeology*

In the decades after the 1940s, Walter W. Taylor became famous worldwide for his vision of an archaeology structured around many subdisciplines working together to form an enlightened vision of humans as builders of vast and complex social structures. William J. Folan, a student of Taylor's at Southern Illinois University-Carbondale, followed his teacher's conjunctive vision over the following decades. He began highly technical excavations at Yuquot, BC, and Dzibilchaltún, Mexico, in the 1960s and went on to complete a long list of joint studies that extended into the twenty-first century. Folan's approach involved architects, geologists, epigraphers, pedologists, geochemists, physical anthropologists, ceramists, lithicists, remote sensing, and much else. This work focuses on how Folan tested the theories implied by Taylor's vision throughout his career and fully materialized it in the Calakmul, Champoton, and Oxpemul area of southern Campeche, Mexico. During the 1980s field seasons at Calakmul Folan began excavating the palace complex at Calakmul. Similar excavations at Oxpemul, unfortunately interrupted by Folan's passing, could further reveal the key role Oxpemul played in the Early/Late Classic transition.

Guo, Meng

[338] *A Study of Secondary Burials in Bronze Age Qaidam Basin*

The Qaidam Basin is located in Qinghai Province, northwestern China. This presentation discusses the discovery and nature of secondary burials in Bronze Age Qaidam Basin.

Gupta, Neha [298] see Wells, Joshua

Gur-Arieh, Shira (Kiel University)

[103] *An Ethno-microarchaeological Approach to Developing a Multiproxy Methodology for Identifying Human Use of Dung as Fuel and Construction Material*

Animal dung has often been regarded as a secondary by-product of domestication, despite increasing evidence showing that humans recognized its value as fuel and fertilizer and used it both before and during the domestication of animals. Due to its organic nature, animal dung does not preserve well, requiring the use of multiproxy scientific methods for its identification. Ethnoarchaeology can assist archaeologists in developing such methodologies within contemporary and recently abandoned contexts familiar to local communities, providing insights into the formation and degradation processes that affect the preservation of dung remains. By integrating traditional knowledge, we can further connect human behavior with its material traces, creating frameworks for interpreting archaeological sites. In this paper, I will present two examples of how these approaches can be applied, specifically in relation to the human use of dung as fuel and as a construction material.

Guralnick, Robert [376] see Sewnath, Neeka

Gusick, Amy (Natural History Museum Los Angeles County), Jillian Maloney (San Diego State University), and Roslynn King (Colorado School of Mines)

[292] *Submerged Cultural Landscapes of the Eastern Pacific Rim: New Discoveries and the Path Forward*

The last 100,000 years of our human history has seen significant human dispersals around the globe. These dispersals coincided with increased global ice volumes and lowered sea levels that exposed millions of square kilometers of lands previously under water. While the amount of subaerial lands varied through time and across space, starting ~20,000 years ago the Pacific Rim region was subject to massive sea-level rise, inundating previously exposed lands and causing significant changes to ecosystems and landforms. This massive inundation challenges our ability to recognize the migration pathways and developing coastal habitats that were key components of the maritime cultural landscapes integral to the peopling of the Americas. Recognizing the importance of these now drowned spaces, our team of social scientists have been collaborating with marine and geoscience disciplines and traditional knowledge holders to define the submerged cultural landscapes of the eastern Pacific Rim. Focusing on the ecological and cultural hot spot of the Southern California Bight, we have made significant discoveries on the character of the paleoenvironment and paleo-landscape through research focused on the region's submerged landscapes. This research highlights the importance of considering these now drowned spaces as integral to the story of our human history.

Guskey, Tanner

[270] *Using Predictive Modeling to Proactively Avoid Sites for Natural Resources Conservation Service Practices in Southern New Mexico*

Within the United States Department of Agriculture lies the Natural Resources Conservation Service (NRCS). Its mission is to aid American Farmers through a variety of assistance programs. Archaeological work is intimately intertwined in carrying out these programs. While it is necessary and good work, often the archaeological work can slow or halt program implementation as there are too few cultural resource specialists. Seeking ways to limit site encounters and thus reducing archaeological workload and shortening project approval times, the NRCS South Area Office in New Mexico created and implemented a predictive model to provide project planners parameters for avoiding contact with locations likely to contain cultural resources.

Gutiérrez, Belkys [273] see Goepfert, Nicolas

Gutiérrez, Belkys [273] see Villa, Valentina

Gutiérrez, Gerardo (University of Colorado, Boulder), and Kenneth Hirth (Penn State University)

[106] *Archaeological Evidence of Early Mesoamerican Lacquer Technology in El Gigante Rockshelter in the Southwestern Highlands of Honduras*

This paper evaluates evidence of lacquer work produced by sealing pigments and dyes fixed with organic

polymers in early Honduras. We examine similarities and differences of Honduras lacquer work compared with other regions of the New World.

Gutiérrez, Gerardo [242] see Aceves, Andrew

Gutiérrez, Gerardo [344] see Pye, Mary E.

Gutierrez, Maria (INCUAPA-CONICET Facultad de Ciencias Sociales [UNICEN]), Juan Belardi (Univ Nac de la Patagonia Austral), Luis Borrero (CONICET), María Álvarez (Instituto de Matemática Aplicada San Luis [IMASL-CONICET], Universidad Nacional de San Luis), and Cristian Kaufmann (INCUAPA-CONICET-UNCPBA)

[88] *Redundant Guanaco (Lama guanicoe) Deaths in Southern Patagonia: Time-Averaging, Scales of Analysis, and Archaeological Implications*

We present the results of actualistic taphonomic observations on modern guanaco deaths in the Coyle-Gallegos Interfluvial steppe (Santa Cruz province, Argentina) and their implications for interpreting the archaeological record. We recorded massive deaths due to winter stress that occurred in the years 2020 and 2023. In addition, we also documented guanacos that died from other causes, such as entanglement in wire fences, predation by puma, and others from unknown reasons. The longitudinal taphonomic study of carcasses added in different years approached a controlled time-averaging sample and required a change in our register scale. The spatial overlap of deaths, the variation in the size and the limits of bone patches, the degree of disarticulation, and the weathering and mortality profiles of these assemblages are evaluated. Sectors with better burial opportunities are identified to construct analogous models for long-term scales, the usual ones of the archaeological record.

Gutierrez, Maria [370] see Herr, Sarah

Gutiérrez Ortega, Dana (UNAM)

[83] *Análisis osteológico de entierros y depósitos rituales del Proyecto Dzibanché*

Desde la década de los 90s la Zona Arqueológica de Dzibanché, localizada en el Estado mexicano de Quintana Roo, ha registrado una amplia variedad de entierros humanos prehispánicos mayas en distintos contextos: desde espacios domésticos, entierros de personajes de alto estatus social y ofrendas, hasta grandes depósitos con fines rituales. Todos ellos reflejan el conjunto de prácticas, sistema de creencias y representaciones que entretejieron las dinámicas sociales de los grupos que habitaron la zona. Por ello, dentro del marco del proyecto PROMEZA Dzibanché 2023-2024, se realizó el análisis e interpretación antropofísica de los restos óseos humanos que conforman la serie esquelética, incluyendo los presentes hallazgos de dos depósitos rituales. El objetivo fue conjuntar el conocimiento disponible a través de la labor arqueológica, y de la información proporcionada por las características de los restos óseos de las personas que vivieron en Dzibanché; se pretende profundizar en las preguntas de cómo fueron sus condiciones de vida y salud, así como dimensionar cuáles fueron sus prácticas bioculturales, actividades cotidianas y costumbres de carácter funerario. *****Esta presentación incluirá imágenes de restos humanos.**

Gutierrez-Zugasti, Fernando Igor [57] see Straus, Lawrence

Gutoski, Martin (Alaska Survey Innovations)

[214] *Photographs Found from 1940 Pictograph Site in Fairbanks, Alaska*

I have been searching for the photographs and tracings made by J. Louis Giddings in June 1940 as reported in *American Antiquity* (7[1]:69–70, 1941) since I was an undergraduate in anthropology at the University of Alaska Fairbanks (UAF) in 1992. When entering the program for my master's degree in the 2000s, I had to content myself that these were not available after years of searching at institutions that Giddings attended after leaving Alaska in the 1950s. I sent a request to the Haffenreffer Museum at Brown University in March 2023 if there were any of Giddings photos or tracings. In a reply from Rodney (Rip) Gerry, the exhibition coordinator at the archives, he said he had found the slides and negatives in April 2023 taken at Fairbanks of the site and in July he had also located the original tracings. Locating these I will be applying the program D-Stretch and other graphic enhancement software to render the images for comparing with the sketches in

the 1941 *American Antiquity* report. I have already determined that Giddings tracings had been reversed in the report.

Gyucha, Attila (University of Georgia), Gábor Mesterházy (Hungarian National Museum), Katalin Takács (Institute for Soil Sciences, Centre for Agricultural Research, Hungary), Mátyás Árvai (Institute for Soil Sciences, Centre for Agricultural Research, Hungary), and Balázs Nagy (Eötvös Loránd University, USA)

[31] *Long-Term Ecological Dynamics in Extremely Flat Alluvial Landscapes: Exploring Environment-Driven Settlement Decisions on the Great Hungarian Plain from the Neolithic to the Medieval Age*

In this paper, we adopt a historical ecological perspective and employ a multidisciplinary methodological approach to explore how various environmental factors and their transformations influenced settlement decisions from prehistoric to recent historic times in extremely flat active alluvial landscapes. Our focus is on a 100 km² microregion within the Körös Basin on the Great Hungarian Plain, where we aim to gain insights into the intricate interplay between climate, hydrology, topography, and soil characteristics in shaping settlement dynamics over seven millennia. To achieve this goal, we consult high-resolution geoscientific and archaeological data. Specifically, we incorporate information on climatic changes and use lidar technology to reconstruct the ancient river system, which has undergone significant alterations due to water regulation efforts in recent centuries. This lidar dataset also allows us to analyze the topography of the landscape, where even slight variations in elevation were pivotal in distinguishing between regularly flooded, temporarily inundated, and flood-free zones. Additionally, we use high-resolution coring data to link soil attributes with settlement patterns across time. Finally, archaeological data collected during systematic surface surveys offer insights into how communities, spanning from the Neolithic to the Medieval Ages, adapted to and interacted with their environment in the studied microregion.

Haas, Jennifer (University of Wisconsin, Milwaukee)

[186] *Navigating Revised NAGPRA Regulations: Insights from Archaeological Repositories and Legacy Collections*

This paper examines the initial implementation of the revised NAGPRA regulations, effective January 2024, within the Archaeological Research Laboratory Center at the University of Wisconsin, Milwaukee. The updated regulations introduce new definitions for NAGPRA items, such as “cultural items,” and include a duty of care provision. These changes have significant implications and responsibilities for academic research, compliance-driven studies, and teaching, particularly at higher education institutions. Using a large archaeological legacy assemblage, accumulated over 50 years of academic and compliance studies, this paper outlines the steps taken to ensure compliance with the revised NAGPRA regulations and proposes strategies for future adherence.

Haas, Randy (University of Wyoming), and Parinita Kumari

[175] *The Effects of Climate and Culture on Projectile Point Diversity in North America over 13 Millennia*

Human societies vary considerably in their internal diversity. The drivers of cultural diversity—why greater or lesser diversity occurs in different times and places—remain poorly understood. This study first examines projectile point diversity in North America over 13 millennia in order to characterize spatiotemporal variation in cultural diversity. The analysis reveals several diversity hotspots with up to 80 distinct projectile points occurring in one part of North America. We then evaluate the extent to which landscape bioproductivity and cultural practices may have affected variation in projectile point diversity. We observe strong auto-correlation in the data suggesting that cultural practices were a major driver of cultural diversity and homogeneity. In contrast, landscape bioproductivity appears to have played a small, albeit statistically significant, role in affecting diversity. These preliminary results suggest that while environmental conditions can foster greater or lesser degrees of cultural diversity/homogeneity, human social structures are considerably more important.

Haas, Randy [117] see Chen, Jennifer

Haas, Randy [117] see Flores-Blanco, Luis

Haas, Randy [182] see Noe, Sarah

Hadden, Carla [36] see Alarcón Tinajero, Edgar

Hadley, Alison (Texas A&M International University), and Alfred Addo-Mensah (Texas A&M International University)

[364] *Nicotine Residue in Tubular Stone Pipes from South Texas*

South Texas, an area that covers roughly 37,800 square miles and spans 28 counties, is known for its abundance of stone pipes. While many of these pipes lack archaeological context, those from excavated contexts range from the late Middle Archaic to the Late Prehistoric periods. We wanted to know if tobacco (*Nicotiana* spp.) was smoked in these pipes. We analyzed residue found inside tubular stone pipes to determine if they were used to smoke tobacco. Multiple residue collection techniques were utilized ranging from manual to chemical extraction. The residue samples were tested using liquid chromatography-mass spectrometry (LC-MS) to detect the presence of nicotine. This research is ongoing, but we have thus far recorded 34 pipes and collected 15 residue samples. We have found that all 15 pipes with which chemical extraction was used yielded evidence of nicotine. These results demonstrate that the use of tobacco was likely far more prevalent among the hunter-gatherers of South Texas. Thus, we propose that groups in South Texas were engaged in long-distance trade of tobacco and that this cultigen played a greater role in the past than was previously documented.

Hageman, Jon (Northeastern Illinois University)

[109] *Archaeobotany in Northwestern Belize and the Mesoamerican Ethnobotanical Database*

Archaeobotanical studies in northwestern Belize were facilitated by the acquisition of a Flote-Tech A flotation machine by Dr. Fred Valdez Jr. for the Programme for Belize Archaeological Project. This machine allowed for the quick and consistent processing of samples and helped create broader opportunities to study ancient plant use than had been traditionally found in lowland Maya archaeology. Research enabled by this technology subsequently revealed a lack of appropriate plant identification resources suitable for archaeological use. The author and colleagues have since addressed this in collaboration with the Field Museum and supported by NSF. What began with a flotation machine has resulted in the Mesoamerican Ethnobotanical Database, an online plant identification resource that includes digital images, common names, and local uses and is available to any researcher with an internet connection.

Haines, Helen [296] see Koch, Timothy

Hale, Jessica [277] see Gaffney, Vincent

Hale, Madeleine [123] see Hammerstedt, Scott

Hale, Micah (Dudek), Adam Giacinto (Dudek), and Loukas Barton (Dudek)

[291] *Linking Rock Art and Archaeology: A Case Study from the Southwestern Sierra Nevada Foothills*

Diverse rock art has been recorded at archaeological sites in Yokohl Valley, Tulare County, California. A confidential private development was proposed for the Yokohl Valley, serving as the impetus for the identification and recordation of rock art that is associated with archaeological deposits from prehistoric to ethnohistoric times. Here we review the various kinds and motifs of rock art recorded in Yokohl Valley, drawing attention to commonalities with neighboring areas and to especially unique pictographs and petroglyphs. At one particular village site, some petroglyphs match bedrock mortar arrangements and appear to line up with historical lore associated with the Foothill Yokuts that inhabited the area.

Hale, Nathan [345] see Cook Hale, Jessica

Hall, Mabelle [237] see Halling, Christine

Hall, Minard [105] see Vallejo, Silvia

Hall, Morgan (UC Davis), Luis Flores-Blanco (ASU), and Christyann Darwent (University of California, Davis)

[182] *Ritualized Butchering and Status Signaling in Archaic Period Burial Site, Lake Titicaca, Peru*

Several lines of evidence have been explored to study the intensification of social status during the Archaic period in Lake Titicaca. Zooarchaeological analysis can add another line of evidence to assess status through ritual sacrifice and feasting associated with funerary practices. Over 1,900 animal bone fragments were recovered from excavations at the burial site of Kaillachuro (5300–3000 BP) located near the southern shore of Lake Titicaca, Peru. Although the collection is heavily burned and highly fragmented, 92% of the identified are ungulates; other fauna includes *cuy*, canids, and birds. Camelids comprise a much higher portion (83%) of the identified ungulates than cervids (17%). More than 87% of these remains were burned, and 40% have clear butchering marks. Previous work at the site has yielded isotopic evidence of a mostly plant-based human diet, with some meat consumption. Human burial mounds associated with butchered and cooked camelid and cervid remains could signify the social capital these individuals had during their lives. Faunal stable isotope analysis (pending) should provide a better understanding of where these animals were grazed or hunted.

Hall, Noah, and Eileen Ernenwein (East Tennessee State University)

[322] *From Sky to Soil: Combining Drones and Geophysical Techniques to Locate Unmarked Burials in Sinking Spring Cemetery, Abingdon, VA*

The Sinking Spring Cemetery in Abingdon, VA, founded in 1773, is divided into “colored” and “white” areas. The traditionally white cemetery, marked with a Virginia State Historic Marker sign, is 9 acres and has easy access from the road, neatly walled family plots, walking paths, and well-preserved stones for individual burials. The African American cemetery is 2 acres, with only a handful of stones and no historical markers, roads, or pathways. We have surveyed the entire African cemetery with ground-based geophysics (ground-penetrating radar, magnetometry, and electromagnetic induction) and thermal, multispectral, and lidar sensors from Unmanned Aerial Systems. Unmarked graves were most reliably detected with thermal imaging except beneath tree canopy, where lidar and geophysics help fill in the gaps. The major finding of this study is the success of thermal imaging to detect these graves. Even data collected during daylight hours shows the graves, which goes against recommendations in the literature. Combining all the data produces a highly detailed map showcasing hundreds of burials.

Hallenbeck, Jenna (California State University, Northridge)

[336] *Mortuary Culture of the Agua Mansa Pioneer Cemetery*

The site of Agua Mansa is a historic rancho settlement in the San Bernardino valley, established in 1845 by migrants from Abiquiu, New Mexico, on land surrounding the former Mission San Gabriel. The Agua Mansa Pioneer Cemetery was one of few surviving structures following a flood in 1862 that destroyed the settlement of Agua Mansa and nearby La Placita. A recent SRI Archaeological report of the cemetery has uncovered formerly buried headstones and grave markers, presenting a new opportunity for analysis of the impacts of religious and ethnic identity on the mortuary culture of historic archaeological sites. This research will address how graves were used as physical reminders of community identity and connection, looking deeper at the choices made by families of the deceased to include religious motifs and Spanish inscriptions despite a growing English-speaking Anglo presence in the San Bernardino Valley. Through analysis of grave design, iconography, and epitaphs of the surviving headstones at the site, this paper will consider the impacts of ethnic and religious identity on the development of mortuary culture.

Hallett, Emily (Loyola University Chicago)

[281] *Zooarchaeology of the Vertebrate Faunal Remains from the Middle and Later Stone Age Deposits at Contrebandiers Cave, Temara, Morocco*

Contrebandiers Cave is located on the Atlantic Coast of Morocco and is approximately 250 m from the current shoreline. Harold Dibble and Mohamed El Hajraoui led excavations at Contrebandiers Cave from 2007 to 2011 and plotted finds with total stations. Middle Stone Age (MSA) and Later Stone Age (LSA) stone tool industries were identified in the cave. The cave deposits have been chronometrically dated to ~120,000–90,000 years ago (MSA) and ~20,000 years ago (LSA). A total of 11,206 well-preserved vertebrate bone and

tooth fragments were excavated and piece-plotted or captured during screening by Dibble and El Hajraoui. The results of taphonomic and taxonomic identification of the vertebrate faunal assemblage are presented here. Artiodactyls, perissodactyls, tortoises, birds, carnivores, snakes, and fish are among the 67 identified vertebrate taxa. Results from taphonomic analyses show that humans were the primary accumulators of the vertebrate assemblage, and carnivore activity was relatively low. A bone tool industry was identified in the MSA deposits, and evidence for leather working and carnivore fur removal was published. The vertebrate faunal assemblage from Contrebandiers Cave indicates that humans were hunting and processing large, medium, and small-bodied prey from open and mixed habitats.

Hallett, Emily [281] see Worthey, Kayla

Halligan, Jessi (Texas A&M University), and Nicholas Bentley (Texas A&M University)

[53] *What's Up with the Sand? Site Formation Processes of (Undatable?) Sites in the Southeastern United States*

The Aucilla River drainage of northwestern Florida contains extensive archaeological evidence dating to the late Pleistocene and early Holocene (ca. 14,560–8000 cal BP). In the river channels, hundreds of lithic tools have been recovered from surface contexts, and some mid-channel sinkholes contain material culture within intact, dateable stratigraphic deposits. Late Pleistocene soils are frequently overlain by early Holocene marls and mid-late Holocene peats. Outside of the river channels, late Pleistocene and early Holocene sites tend to have poor organic preservation with diagnostic artifacts in conflated and undatable contexts similar to the rest of the southeastern USA. In summer 2024, we conducted excavations on three of these terrestrial upland sites in extensive sand deposits, discovering that all three contained a buried component with late Pleistocene / early Holocene diagnostic artifacts underneath a mid-late Holocene component. Several years of submerged site excavation have shown that sand deposition is episodic (and dateable due to preserved organics within and bracketing it). Comparisons between terrestrial and underwater contexts provide evidence for more complex site formation processes than previously recognized, and potentially, hope for buried and undiscovered early sites in the region.

Halling, Christine (University of New Orleans), Damien Huffer (University of Queensland), Mabelle Hall (Animal Welfare Institute), and Ryan Seidemann (Water Institute)

[237] *Learning from Flora and Fauna Regulation to Thwart Human Remains Trafficking*

US laws governing collecting and trafficking human remains versus flora and fauna (living or dead, incorporated into heritage items or art) vary but generally do not overlap. Flora and fauna trading is more explicitly regulated and enforceable than human remains. While both federal and state governments have multifold flora and fauna trafficking laws, they have few equivalents for human remains. A 2024 SAA symposium demonstrated that human remains trafficking is robust yet poorly regulated and that the patchwork of legislative regimes and the reliance of traffickers on social media sites protected by the veil of the US Communications Decency Act make it difficult to craft cross-border solutions. Lawmakers should learn from flora and fauna regulation and enforcement to thwart human remains trafficking, including that portion derived from archaeological site looting and scandals similar to recent events at Harvard and other universities' body donation programs. This paper will show that US wildlife laws and enforcement programs are more robust than those for human remains, but the pathways to trafficking are similar regardless. Insufficient value continues to be placed on the human dead, but effective remedies can be developed from the existing flora and fauna models.

Halling, Christine [75] see Garcia-Putnam, Alex

Halling, Christine [232] see Seidemann, Ryan

Halperin, Christina (Université de Montréal), Carmen Ramos Hernandez (Proyecto Arqueológico Ucanal), and Laurianne Gauthier

[51] *Council Houses and Shifts toward Cooperative Political Governance in the Terminal Classic Maya Lowlands*

Governance during the Classic period in the Maya Lowlands was heavily based on the institutions and relationships surrounding divine kingship, which was characterized by paramount rulers and their hierarchical relations with other political officials and the populace. This paper examines changes to this governing system

during the Terminal Classic period (ca. 810–1000 CE), which was brought on by greater emphases in power-sharing and collective governing. It focuses, in particular, on a columned civic-ceremonial building recently excavated in 2024 at the ancient Maya city of Ucanal in Petén, Guatemala, which is interpreted here to have been a possible council house, or *popol nah*. It was built in the wake of a major upheaval event that rejected an earlier Late Classic dynastic line. Drawing on spatial analysis and landscape theories that underscore the recursive and entangled relationships between people and the built environment, we argue that these new forms of public buildings helped condition a more cooperative form of governmentality and a more civically engaged populace.

Halperin, Christina [320] see Dubois-Francoeur, Camille

Halperin, Christina [194] see Flynn-Arajdal, Yasmine

Halperin, Christina [376] see Freiwald, Carolyn

Halperin, Christina [324] see Gauthier, Laurianne

Halperin, Christina [341] see Le Moine, Jean-Baptiste

Halperin, Christina [64] see Voltaire, Mikael

Hambley, Joanna [99] see Mitchell, Juliette

Hamdan, Emadeldeen (University of Illinois, Chicago), Jessica Bishop, Aldo Foe (University of Illinois, Chicago), David Reid (University of Illinois, Chicago), and Ahmet Enis Cetin (University of Illinois, Chicago)

[379] *Crashed, Modeled, then Rescued: AI Algorithms Reduce Rescue Time for Crash Survivors*

A major topic of archaeological research includes the modeling of human movement across diverse landscapes, often in terms of how geography can facilitate or impede mobility. On an operational level, modeling human movement allows archaeologists to determine likely travel corridors that may aid in the identification of new sites and features, or assess the connectivity between regions. Standard modeling tools, such as least-cost path (LCP) analysis, require a full geographic knowledge of the interlaying region between start and end points. However, a crash survivor might not have knowledge of the local geography. An AI algorithm, such as A-Star Algorithm, can mimic human movement with its heuristic-based local decision-making process throughout the survivor's journey. Combined with circuit analysis theory, calculated using Circuitscape, A-Star Algorithms can better model an individual's path compared to traditional LCP and other search algorithms, like gradient descent. We utilize World War II crash survivor datasets that consist of the crash point, path taken, and rescue location to compare travel models. These results have a broad impact within modeling human behavior in the past as well as contemporary cases, especially in consideration of the ongoing search for missing service members and crash survivors from past world conflicts.

Hamilton, Derek, Kerry Sayle (SUERC, University of Glasgow), and Juliette Mitchell (SCAPE Trust, University of St. Andrews)

[320] *Better Baselines? Creating Robust and Meaningful Sulfur ($\delta^{34}\text{S}$) Isoscapes for Archaeological Studies of Residence and Mobility*

Many of the central questions of archaeology engage directly with themes relating to movement, mobility, and migration. The two most common isotope systems that have been exploited for this purpose are strontium ($^{87}\text{Sr}/^{86}\text{Sr}$) and oxygen ($\delta^{18}\text{O}$), with sulfur isotopes ($\delta^{34}\text{S}$) being a much most recent addition to the isotopic arsenal for investigating residence and mobility. Because the application of sulfur is not limited solely to tooth enamel, by targeting skeletal tissues that represent different periods in an individual's lifetime, it has the possibility of directly tracing residence, isotopically, an individual throughout a lifetime. The poster presented here demonstrates how archaeologists can and should be thinking about "mobility" isotopes when developing isoscapes, with a particular focus of sulfur. Not only do our sulfur isoscapes need to reflect our understanding of the natural variability of $\delta^{34}\text{S}$ in the environment, but they also should reflect our model(s) for land use and resource procurement. Without considering the natural and anthropogenic impacts on the sulfur values of individuals, our interpretation run the risk of being misleading, or even incorrect.

Hamilton, Derek [314] see Henry, Edward

Hamilton, Elizabeth (ISEAA, Penn Museum), Joyce White (University of Pennsylvania Museum), and Thomas Pryce (French National Centre for Scientific Research)

[49] *High-Tin Bronze in Southeast Asia: Where Did It Come from, How Was It Made, and Who Used It?*

One noteworthy feature of metallurgy in Southeast Asia is the appearance of quenched high-tin (tin between 20% and 30%) artifacts in the later first millennium BC. This intractable alloy cannot be worked cold but only hot-worked. Thin-walled (0.2–0.3mm) vessels of quenched high-tin bronze have been found at several sites in late first-millennium BC Mainland Southeast Asia. However, in two sites in northern northeast Thailand, Ban Chiang and Don Klang, quenched and hot-worked high-tin bronze artifacts are found only in fine (1 mm thick) wires that appear to have been used as necklaces, along with distinctive bangles. In neither site is there any evidence of the thin-walled vessels found elsewhere in MSEA. The distribution of vessels and fine wires is mutually exclusive: no sites with fine wires have vessels, and no sites with vessels have fine wires. Given the difficulty of working this alloy, especially to produce thin wires, we postulate the existence of a specialist wire- and bangle-producing and exchange industry that was responding to strong and distinctive local preferences.

Hamilton, Marcus (University of Texas, San Antonio), David Kilby (Texas State University), Christopher Merriman (Adams State University), and Briggs Buchanan (University of Tulsa)

[57] *Past, Present, and Future Work at the Mockingbird Gap Clovis Site, New Mexico*

In this presentation we review past, present, and future plans for archaeological fieldwork at the Mockingbird Gap Clovis Site, New Mexico. Bruce Huckell was integral in gaining access to the site and the associated assemblages from an advocational archaeologist, Bob Weber, in the early 2000s. The site had been first investigated in the 1960s, but no work had been conducted for 40 years. Bruce's access set in place a chain of events, including an initial analyses of the sizeable Clovis projectile point assemblage from the site, as well as systematic surveys, test excavations, and geoarchaeological coring of the site in the mid-2000s. This work suggested much remained to be done. In the spring of 2022 the coauthors of this presentation, all students of Bruce, initiated further work at the site with a view to establishing a long-term research project at the site and into the extensive Paleoindian record of the Central Rio Grande Rift Valley. Bruce's advice and mentorship remains central to our future research plans, which we summarize here.

Hamilton, Marcus [57] see Kilby, David

Hamilton, Marian (University of Northern Colorado), Lee Drake, Cylar Conrad (Pacific Northwest National Laboratory), Erin Thornton (Washington State University), and Chip Wills (University of New Mexico)

[320] *The Chaco-topes Database: Presenting an Integrated, Interactive Stable Isotope Database of Chaco Canyon Research*

Chaco Canyon was an epicenter of ancestral Puebloan activity between AD 850 and 1250. One of the most powerful ways of understanding the past comes from stable isotope analysis, which has provided insights into the ecology, mobility, resource utilization, and landscape management of Chaco Canyon for decades. Over the last five years, numerous regional archaeological communities have harnessed the power of “big data” by amassing databases of published studies within their domains. The Chaco-topes project presents a curated database of Chaco-related stable isotopes studies ($D^{13}C$, $D^{18}O$, $D^{15}N$, $^{87}Sr/^{86}Sr$, DD , $^{206}/^{204}Pb$, $^{207}/^{204}Pb$, $^{208}/^{204}Pb$, $^{207}/^{206}Pb$) from multiple sample types (soil, geologic samples, hair, bone, enamel, water) representing archaeological and modern materials. We account for differences in fractionation between tissue types, material ages, and preparation methods to increase the ease of pulling large, comparable datasets related to the Canyon and the surrounding San Juan basin. All samples are accessioned with original references, geospatial data, and sample material details. There are over 5,500 unique entries illustrated through an interactive, open-access user interface and downloadable as .csv files. We intend that this work will facilitate more large-scale analyses of Chaco Canyon and lead to a deeper, more nuanced understanding of the people and place.

Hammer, Emily (University of Pennsylvania)

[305] *Imperial Networks and Local Resistance at the Edge of a Highland Empire in the Middle East/South Caucasus (Iron Age Urartu)*

The study of ancient states and empires has often suffered from an underappreciation of internal spatial/temporal variability in material culture and means of territorial control. Spatial network conceptions facilitate a better understanding of ancient states and empires' development and forms of political cohesion/integration. A network conception is particularly critical for highland polities where uneven topography and transportation costs severely limited the ability of pre-industrial administrations to impose control over expansive territories and therefore would have encouraged the concentration of efforts at landscape nodes. In this study, I use landscape archaeology data and GIS analyses of movement to develop network reconstructions of the empire of Urartu, located in eastern Anatolia, northwestern Iran, Armenia, and Naxçıvan, Azerbaijan, ca. 800–600 BCE. The territory across which the Urartians expanded is topographically rugged, and no other highly centralized ancient state was ever based in the region. Network reconstructions provide insight into how the Urartians integrated the fragmented areas that constituted their eastern provinces as well as how they interacted with and transformed the societies on their edges. Most importantly, the network reconstructions help illuminate a possible example of local resistance to territorial control by independent local groups at the fringes of the Urartian realm.

Hammerstedt, Scott (University of Oklahoma), Madeleine Hale (University of Oklahoma), and Asa Randall (University of Oklahoma)

[123] *Geophysical Survey of the Naval Air Technical Training Center (NATTC), Norman, Oklahoma*

Today, South Campus at the University of Oklahoma hosts research facilities and other administrative buildings. However, this area was once a Navy base, the Naval Air Technical Training Center (NATTC)-Norman. The NATTC was used to train enlisted naval personnel in aircraft maintenance during World War II and the Korean War. In the 1950s, the land and buildings were transferred to the University of Oklahoma. Over time, the buildings were razed and other facilities were constructed. Although the aboveground architecture is gone, aerial imagery attests to the presence of subsurface features associated with training buildings, a medical dispensary, hangars, and the CPO galley. In this presentation, we report on the results of a multimethod geophysical survey of a portion of the NATTC. We have employed a gradiometer, ground-penetrating radar, lidar, and precision mapping to locate features associated with these buildings to better document Norman's Naval history.

Hampson, Daniel (Binghamton University)

[55] *The Circle of Life: Variability and Distribution of Loop Roads in the Ancient Southwest*

Archaeological studies of roads in the Southwest have historically concentrated on the straight roads that connect larger communities; however, thanks to the increasing availability of regional lidar, new and unexpected dimensions of ancient infrastructure are beginning to surface. This technology has revealed an impressive number of circular racetracks or loop roads concentrated in the northern San Juan region, suggesting a previously overlooked aspect of ancient Southwest cultures. These circular roads are distinct from the well-documented straight routes, and several examples have appeared in unexpected and distant locations, hinting at broader and more complex connections and cultural practices that may have extended beyond the immediate region. As more instances of these features are identified, it becomes apparent that they were not merely outliers but played a crucial role in some as yet unknown aspect of ancient life. With many new examples, it becomes important to define the parameters of these circular roads and to analyze their possible regional significance. Studying these loops has the potential to expand our understanding of regional identities, sociopolitical organization, and migration.

Hampson, Daniel [65] see Dean, Logan

Hampton, Ashley (Hamilton College), Ethan Ryan (Historical Research Associates Inc.), Nathan Goodale (Hamilton College), and Abigail Lonnegren (Hamilton College)

[129] *A Spoonful of Sediment: Using Geochemical Analysis to Understand Activity Patterns across and within Housepit 54 Floors*

Analysis of household floor data from Housepit 54 at the Bridge River site, British Columbia, has focused on the spatial distribution of lithic, faunal, botanical, and fire-cracked rock remains to provide insight into labor patterns, social identity, activity areas, and more. In order to better understand household use of space in

conjunction with these macroscopic materials, we assess and visualize the geochemical properties of spatially distributed soil samples across multiple floors. As a means of delineating potential spatial boundaries of past activity, this analysis compares hearth proximity, storage/refuse pit location, and archaeological remains with floor surface geochemical signatures using pXRF and isotope analysis. By creating an isotope-informed index, we compare use of space across multiple scales from intra-floor variability to inter-floor change/consistency over time. This geochemical analysis is contextualized within the broader study of household social organization to reveal subtle distinctions and highlight the necessity of utilizing multiple depositional proxies to re-create past activity.

Hampton, Helen, and Andrew Needham (University of York)

[42] *Use of Ethnographic Studies to Formulate New Hypotheses about Methods of Paleolithic Clothing Manufacture: Challenging Assumptions about Technological Sophistication*

Ethnographic studies can be used to question prevailing assumptions about differences in modern human (*Homo sapiens*) and Neanderthal technology and clothing. As no Paleolithic clothing survives, research focusses on indirect evidence. Stone blades, bone awls, and needles in Upper Paleolithic (UP), modern human assemblages and their virtual absence in Middle Paleolithic (MP), Neanderthal tool kits are argued to support the hypothesis that in Europe, modern humans created complex sewn clothing from animal hides, and Neanderthals wore simple cape-like clothing. Some suggest this supports the hypothesis Neanderthals lacked the cognitive/behavioral ability to protect themselves from cold climates, and this contributed to their extinction. So far, however, MP tools have not been tested for their capacity to perform similar functions. Ethnographic studies record a diversity of formal and informal methods of making clothing. These will be used to formulate new hypotheses about methods of Paleolithic clothing manufacture. This will inform design of experiments testing replica MP tools for their suitability as cutting and piercing tools for making sewn clothing, adding to our understanding of the versatility of MP assemblages. UP technology is often placed above MP in a cultural evolutionary framework: this project will challenge some of the perceived superiority of UP technology.

Hanks, Bryan (University of Pittsburgh)

[278] *Investigating Early Pastoralist Landscapes in Eurasia through Integration of Archaeological Geophysics and Soil Chemistry: Challenges and Opportunities*

The study of early pastoralist landscapes, and associated patterns of occupation, resource use, and niche construction, present many challenges to conventional archaeological field research. Over the past two decades, the integration of near surface geophysical survey and soil geochemistry, especially when used in conjunction with conventional methods such as systematic pedestrian survey, offer exciting new opportunities for the study of pastoralist communities. This paper examines several different case studies ranging from the Bronze Age to the Medieval period in the central and eastern Eurasian steppes in which geophysical and geochemical research has provided important new information on pastoralist communities and the landscapes they inhabited. Data collected from mortuary contexts, ephemeral occupations, and permanent settlement sites with enclosures will be presented. Results to date support the identification and interpretation of pastoralist land use and the nuanced ways in which these patterns developed through time and space across Eurasia.

Hanks, Bryan [223] see Suarez, Nicholas

Hannold, Cynthia, Godwin Sunday (University of Alabama), Alexandre Tokovinine (University of Alabama), and Francisco Estrada-Belli (Tulane University)

[169] *A Chemical and Mineralogical Analysis of Lime Plaster from the Holmul Area, Petén, Guatemala*

The presence of pozzolanic plaster in the Holmul region suggests the use of specialized production methods seen elsewhere in Mesoamerica. The Teotihuacan Entrada, during which Teotihuacanos maintained a presence in the Maya area, is one major event that impacted lime plaster composition in the Maya Lowlands. We use X-ray diffraction, X-ray fluorescence, and microscopic petrography to determine lime plaster wall, floor, and stair mineralogical and elemental composition across three sites in the Holmul region: Holmul, La Sufricaya, and Chochkitam. We present the results of this multifaceted approach and demonstrate how lime plaster studies can contribute to discourse on the social and political changes of the Maya Lowlands.

Hannold, Cynthia [169] see Tokovinine, Alexandre

Hanratty, Colleen (Maya Research Program)

[52] *Research Themes in the Maya Archaeology of Northwestern Belize*

Until the late 1980s, unstable political conditions limited archaeological research in northwestern Belize to a few early explorations in the early part of the twentieth century. The establishment of long-term, intensive and extensive investigations by the Programme for Belize Archaeological Project and the Blue Creek Archaeological Program dramatically changed this situation by 1992. Archaeologists with these projects embarked on multifaceted, multi-institutional efforts that encompassed numerous approaches to better understanding of the ancient Maya past. This paper will focus on only some of the successful themes undertaken by both projects. These themes include the structure of urban polities, the integration of nonurban communities into larger polities, use and control of physical resources, and the complexity of large-scale and multiscalar agricultural production. In this paper, these will be reviewed in order to highlight some of the successes of these two projects.

Hansen, Annette (Vrije Universiteit Brussel), and Frits Heinrich

[337] *Long-Term Perspectives from Archaeobotany in the Southern Levant: Crop Specialization, Food and Crop Waste, and Upcycling*

The southern Levant is a region that played a key role in the innovation of various agricultural and food technologies, such as some of the earliest precursors of bread and other fermented foodstuffs, but later also in the proto-industrialization of cash crop production such as indigo and sugar cane and their respective products. This paper will focus on the diverse streams of crop processing waste (or “secondary products”) that resulted from the latter type of activities and show how through reuse or upcycling they became embedded as resources (e.g., fuel, fodder, construction materials, and tools) in both the same and other production chains, leading to the emergence of naturally circular systems. The paper will moreover synthesize the archaeobotanical results from various of the authors’ archaeological sites in the southern Levant and integrate these with evidence from the written sources, with an emphasis on the Roman through Ottoman periods. This paper will also present the first archaeobotanical evidence of carbonized sugar cane through its bagasse and reflect on its role as a fuel source at the Ayyubid-Mamluk sugar cane factory and domestic contexts in the adjacent town of Khirbet Sheikh Isa, in the Ghor as-Safi region, Jordan.

Hansen, Annette [167] see Heinrich, Frits

Hansen, David [238] see Miller, Elena

Hansen, Richard (Idaho State University; FARES Foundation), Daunte Ball (University of Arizona), Weston Hansen (FARES), and Chontal Green (University of Utah; FARES)

[383] *Early Middle Preclassic Occupations: Insights into the Initial Settlement in the Mirador-Calakmul Karst Basin*
Systematic excavations throughout several decades in the Mirador-Calakmul Karst Basin system have identified a strong presence of Middle and Late Preclassic occupations with monumental architecture and elaborate communication and logistics systems that exceeded the subsequent Classic period Maya. The early non-sedentary occupation of the Basin, however, is evident in the Archaic period, between 2600 and 2400 BCE, with a sedentary presence by 1000 and 800 BCE and manifestations of a cultural socioeconomic complexity that reached an apogee by about 300 BCE. Excavations in the Trogón Group of the Tigre Complex at El Mirador have identified sealed deposits with ceramics, lithics, shell, bone, carbon, and soils dating to the pre-Mamom period from 1000 to 600 BCE. Analyses of the artifacts, together with Bayesian radiometric dating, indicate a consistency with similar early artifact assemblages from other areas of the Maya Lowlands, and demonstrate the early foundations of socioeconomic complexity that led to the formation of a centralized, state-like polity.

Hansen, Richard [383] see Dudgeon, John

Hansen, Richard [383] see Hernández, Enrique

Hansen, Richard [383] see Kollmann, Dana

Hansen, Richard [383] see Morales-Aguilar, Carlos

Hansen, Weston (FARES)**[383]** *Archaeological Investigations on the Southern Platform of the Trogon Group in El Mirador*

Archaeological excavations in the Trogon Group of the Tigre Complex in the Preclassic Maya site of El Mirador have yielded new information relevant to early architectural formats and burial practices of the Preclassic Maya. While excavations in the northern platform of Trogon yielded extensive evidence of early Middle Preclassic occupation, the excavations on the southern Trogon platform revealed a series of thick stucco floors dating to the Middle and Late Preclassic periods with multiple large post holes. Below these floors were several small and unusual rectangular platforms covered with white stucco that had been modified by the addition of a thick stone fill forming walls about a meter high. Archaeological testing in the center of the northern stucco platform yielded two subsequent floors that had been cut with a circular pit, 70 cm in diameter, resembling a large post hole. However, the pit yielded poorly preserved and fragmented human remains of a single individual. No burial goods were recovered, and the few Middle Preclassic ceramics were likely part of the fill. The complete absence of burial goods associated with such unique, early, architectural constructions is puzzling, and further technological analyses are ongoing. *****This presentation will include images of human remains.**

Hansen, Weston [383] see Hansen, Richard

Hanson, Kelsey [68] see Roady, Kegan

Hapak, Madison [231] see Hirshman, Amy

Harahsheh, Maryam, Hayden Denby, Lauren Schauble, Elaine Spalding, and Ezra Kucur Kylie Quave**[198]** *How Are We Teaching? An Analysis of Introductory Course Syllabi in Archaeology and Biological Anthropology*

Introductory courses give prospective undergraduate students their first glimpse into the field of anthropology. Thus, the impression those courses make is crucial in enculturating anthropologists to disciplinary norms. This project, "Past for the Future," surveys introductory archaeology and biological anthropology courses, examines the pedagogies apparent in syllabi, and posits ways to better equip anthropology to show its relevance to students and thus, to enhance belonging. The information collected from each course came solely from syllabi ($n = 54$) sampled as a cross-section of institution types in the United States. Data on the multivocality (incorporation of an array of voices) and epistemology focus (how anthropologists know what they "know") of the courses was collected. The results indicate that both fields had around the same level of multivocality, with syllabi that were equally split among readings underrepresentative of diverse stakeholders and readings that mixed in marginalized and underrepresented voices. However, archaeology courses tended to be more epistemology-focused than their biological anthropology counterparts, especially in the first few weeks of the semester. Looking forward, this research can be expanded to explore the ways these pedagogical choices influence students to continue their anthropological studies.

Hard, Robert (University of Texas, San Antonio), and John Roney (Colinas Cultural Resource Consulting)**[98]** *Bruce Huckell, the Early Agricultural Period, and Recent Work in the Upper Gila River, Southeastern Arizona*

Bruce Huckell's work identifying the importance of riverine adaptations during the Early Agricultural period in southeastern Arizona has been foundational to the later recognition of broad patterns across multiple streams in the borderlands. Our work the Upper Gila River in southeastern Arizona extends this pattern to yet another major river. The Early Agricultural period *cerros de trincheras* of Round Mountain and DotMon suggest that substantial settlements are a feature of the beginnings of farming in Northwest Mexico and the American Southwest (NW/SW) on multiple major streams. The goal of this paper is to summarize our fieldwork on Early Agricultural period locations on the Upper Gila River and extend the patterns that Bruce Huckell originally recognized.

Hardin, James [237] see Diboyan, Larra

Harding, Miranda (University of Utah)

[126] *The Impact of Climate on Human Foraging during the Pleistocene-Holocene Transition (PHT) in the Northwest Great Basin*

For decades, archaeologists have interpreted the material record of the Pleistocene-Holocene transition (PHT; ~14,500–9000 cal BP) to suggest that the first peoples in North America specialized in large-game hunting. Increasing evidence, however, is documenting considerable temporal and spatial variability during the PHT across North America. In the Mountain West, many sites from the PHT document low abundances of large game remains compared to later in the Holocene. Logic from the prey model and other foraging theory perspectives has been used to suggest that this pattern resulted from climate-driven depressions of large game densities. This study integrates newly gathered zooarchaeological data from Connley Cave 5 and existing records from the northwest Great Basin to test this hypothesis.

Hardy, Heather, and Kelly Meierotto (Environmental Community Partnership UAF)

[92] *Effectiveness of Site Protection Measures on US Army Garrison Alaska Managed Lands*

Negative impacts from military and recreational activity occurs on easily accessible archaeological sites on US Army Garrison Alaska managed lands. Vehicular and foot traffic causes vegetation disruption, soil disturbance, and erosion. Implementation of site protection measures including physical obstacles, experimental site capping, signage, and educating land users yielded mixed results. Continued education and development of effective measures are vital to protect archaeological sites while maintaining land-user access.

Hare, Timothy [190] see Brewer, Jaxson

Hare, Timothy [104] see Serafin, Stanley

Harison, Leonce [59] see Singman-Aste, Lily

Harkness, Rebecca

[64] *Hybrid Corrugated Analysis: A Comparison of Physical and Virtual Attribute Data Collection Methods*

Corrugated ceramic analysis in the US Southwest primarily uses attribute analysis to identify how corrugated ceramics were made and by which potting communities. Traditionally, attribute analysis is completed with physical objects and requires extended periods of in-person work with either full vessels or sherds. In this poster, I compare two methods I used for collecting corrugated vessel data. One is a more traditional method that uses a variety of instruments to record attributes. In contrast, the second method combines 3D modeling, software, and in-person analysis. While 3D modeling of archaeological sites, features, and objects has gained traction in archaeology over the last 15 years, the capture methods have changed drastically. The steps for digitizing smaller archaeological objects are more difficult to find than for features. I include a step-by-step methodology for 3D modeling, processing, and digital data collection with insights into best practices for using 3D scanning technology for archaeological objects. Researchers may not have access to artifacts because they work abroad and the artifacts remain there, or they may have limited time in an institution to record the required data. Surveying the strengths and weaknesses of both methods is valuable as researchers look for digital solutions in their work.

Harkness, Rebecca [124] see Schollmeyer, Karen

Harris, Barney (Bournemouth University), and Philip Riris (Bournemouth University)

[341] *Legacies of Past Land Use on the Southern Atlantic Forest (Mata Atlântica)*

The scope and scale of past human impacts on vegetation patterns is of widespread interest in the historical sciences. In the Atlantic Forest of southern Brazil, previous work has identified precolumbian land use as probable drivers of the extent and composition of forest cover, with extended legacies that remain in modern floristic inventories. This study aims to understand the legacies of past land use on vegetation here, using dated archaeological sites with known cultural affiliations and modern plant occurrence data. We produce probabilistic estimates of their past distributions across southern Brazil and discriminate correlations that result from an incidental preference for similar ecological niches by both Amerindians and particular plant species, from a causal relationship of the former on the latter. Our results indicate that increases in the

distribution of several culturally-important plants in the Atlantic Forest are significantly influenced by the distribution of precolumbian Amerindian sites. We suggest an observable legacy of past human intervention in the modern environment that complements existing phylogeographic and paleoenvironmental studies.

Harris, Brandy [94] see Wunderlich, Shelly

Harris, Megan

[206] *If It Walks Like a Goosefoot and It Talks Like a Goosefoot . . . : Chenopodium at the Chuchuwayha Rock Shelter*

Chenopodium, commonly known as goosefoot, is a genus of perennial and annual herbaceous plants. This genus is an abundant seed recovered from paleoethnobotanical assemblages in the Fraser and Columbia Plateaus of North America. While prevalent in the paleobotanical record, they are often discounted as incidental environmental inclusions. A growing literature is having trouble reconciling the presence of *Chenopodium* species. This genus appears in great abundance across both Plateaus. It likely has some role in the lifeways of those Plateau peoples. This paper presents the initial results of the paleoethnobotanical analysis at the Chuchuwayha Rock Shelter in southern British Columbia within the traditional unceded territory of the Upper Similkameen Indian Band (USIB). It explores the relationship between the archaeological remains of *Chenopodium* from Chuchuwayha and present-day *Chenopodium* species within the USIB territory. Given their prevalence at a culturally significant site to the USIB, it is likely the *Chenopodium* species here represents something beyond an incidental environmental inclusion.

Harris, Michael [56] see Klemmer, Amy

Harris, Susan [284] see Fisher, Lynn

Harrison, Sarah [42] see French, Jennifer

Harrison-Buck, Eleanor (University of New Hampshire), Samantha Krause (Texas State University), Marieka Brouwer Burg (University of Vermont), Angelina Perrotti (Palynology and Environmental Archaeology Research Lab), and Kathryn Bailey (University of Vermont)

[387] *Large-Scale Fish-Trapping Facilities in Northern Belize: Localized Wetland Adaptations to Climate Change in the Late Archaic*

Multiproxy data collected from the largest inland wetland in northern Belize demonstrates the presence of large-scale fish-trapping facilities built by Late Archaic hunter-gatherer-fishers, which continued to be used by their Maya descendants during Formative times (cal 2000 BCE–200 CE). This is the first large-scale Archaic fish-trapping facility recorded in ancient Mesoamerica. We suggest that such landscape-scale intensification may have been a response to long-term climate disturbance recorded between 2200 and 1900 BCE.

Rosenswig (2015) argues that this three-century-long drying event encouraged a macroscale shift in food production with “a mosaic of adaptation.” While some Archaic forager-horticultural groups became increasingly reliant on domesticated plants like maize, our wetland data do not indicate maize cultivation in this location. Instead, the data suggest that Archaic groups responded by intensifying their fish-trapping as a primary food source, perhaps supplemented by Mollusca and other aquatic foods and drought-resistant plants like amaranth that grow well in clay-rich, sandy soils characteristic of Belize’s wetland-lagoon environments. The results of this study add to a growing body of archaeological evidence reported from across Mesoamerica, including its “cradle” of early civilization in the isthmian lowlands, where findings also suggest aquatic resources were instrumental in supporting the initial development of Formative society.

Harrison-Buck, Eleanor [284] see Bazarsky, Alexandra

Harrison-Buck, Eleanor [284] see Tibbits, Tawny

Harrod, Ryan (University of Alaska, Anchorage), Kathryn Baustian (Skidmore College), and Barbara Roth

[113] *Power Divergences among Precontact Puebloan and Mogollon Societies: Conflict and Cooperation in the American Southwest*

This paper explores how two contemporary precontact (AD 800–1200) cultures in the American Southwest compared in power structures and leadership roles. We investigate the Ancestral Puebloans of the Chaco region and the Mimbres Mogollon people of southwestern New Mexico. As these societies reacted to changing subsistence and environmental demands, both relied on ritual as a means of acquiring and maintaining status and power. The social rules within each respective culture diverge in how this power was used in community interactions, however. Bioarchaeological and archaeological data show that Chacoan society used power to establish systems of inequality and social control. Occasional episodes of violence included massacres and captive-taking and some factions of society showed poor nutrition, suggesting a lack of resource access. In contrast, individuals in the Mimbres area were reasonably well adapted to their environment, showing fewer pathological conditions and less frequent violence. The corporate lineage social structures in Mimbres society may have served to reduce competition for resources while the hierarchical model in the Chaco region only buffered select high-power members of society. No photos of human remains will be included in this presentation.

Harrower, Michael (Johns Hopkins University)

[305] *The Road Less Traveled By: Integrating Least-Cost Path Modeling with Ethnographic and Historical Evidence for Analysis of Aksumite Trade Networks*

Least-cost path (LCP) modeling, often performed by geographic information system (GIS) software, has had important impacts in archaeology over the past few decades. Optimality centered models of human behavior have been criticized for overemphasizing the role of energetic efficiency. However, it is important to emphasize that LCP models do not necessarily assume people choose the most energetically efficient routes but instead LCP models are heuristically useful in helping to identify instances in which the most common routes of travel diverge from what are seemingly the most energetically optimal. This paper examines and works to integrate LCP modeling with ethnographic and historical evidence of trade routes for the highlands of northern Ethiopia with specific emphasis on settlement patterns and trade networks of the Aksumite Empire.

Hart, Sumar [387] see Hillman, Aubrey

Hart, Thomas (New Mexico State University)

[380] *Ritual Termination and Rejection of the Status Quo in Mesoamerica*

Ritual termination events are a routine religious practice throughout much Mesoamerica. As part of the world renewing religious perspective, they can involve a wide range of objects from the smallest incensarios to large, monumental structures such as pyramids. However, an important distinction remains to be analyzed, terminations that are part of the regular cycle of renewing versus terminations that are an act of defiance against the status quo. This paper examines how the routine becomes the extreme as seen throughout the Maya Lowlands, the Olmec Heartlands, and Teotihuacan.

Harvati, Katerina [384] see Lombardo, Serena

Haskett, Taylor (Idaho National Laboratory)

[372] *Sourcing the Obsidian Haskett Projectile Points Recovered from the Haskett Type Site (10PR37) in Lake Channel, Idaho*

Ten Haskett-style obsidian projectile points from the Haskett Family's collection associated with 10PR37, including specimens assigned as Butler's Type 1 and Type 2, were recently analyzed via X-ray fluorescence (XRF) spectroscopy at the Idaho National Laboratory (INL) Cultural Resource Management Office (CRMO). These efforts were performed to identify and assign geologic sources to a significant assemblage of projectile points that have not been subjected to XRF before now. Results of the analysis will be integrated with other Haskett sourcing data from the Desert West to gain a better understanding of obsidian conveyance during

the terminal Pleistocene and early Holocene, as well provide insights into ancestral Shoshone and Bannock lifeways and mobility.

Hassett, Brenna (University of Central Lancashire), Suzanne Pilaar Birch (University of Georgia), Rebecca Wragg Sykes (University of Liverpool), and Victoria Herridge (University of Sheffield)

[185] *Why Are Women Always Such a Surprise? The TrowelBlazers Perspective on the Never-Ending Cycle of Feminist Histories of Archaeology*

The TrowelBlazers Project has spent more than 10 years collecting, curating, and sharing the experiences of women in the “digging” sciences. While we are proud of our contribution to the understanding of the role of women in the history of archaeology, we find it necessary to ask: what is the point of us? The construction of archaeological knowledge requires an in-depth understanding of those who build it, and the ways in which lived experiences inform and shape our interpretation of the human past. The contributions of women have been underrepresented due to underlying biases in the way we privilege formalized academic practice and in the social networks that are a critical but largely unacknowledged part of the formation of archaeological thought. There is a 40-year history of feminist historiographies stretching from Cheryl Claassen’s 1984 “Women in Archaeology” to major projects such as the Jukowski Institute’s Breaking Ground, TrowelBlazers, and Beyond Notability. Despite this, we still find women underrepresented in both the formal and informal structures of archaeological knowledge construction. This paper investigates why it is that, after all of this work, women in archaeology should still come as such a surprise.

Hatte, Christine [165] see Boeda, Eric

Haury-Artz, Cherie [340] see Reetz, Elizabeth

Hauser, Mark [167] see Wallman, Diane

Hauser, Neil (Coal Creek Research)

[122] *Using Contracting Stem Projectile Points to Inform Human Mobility in the Great Basin and Greater American Southwest*

This poster presents the results of an investigation of differences in contracting stem point shape across the Great Basin, Colorado Plateau, and greater American Southwest. Contracting stem points from 17 locations or areas consisting of both excavated sites and surface collections were used. By comparing the occurrences of tightly constrained projectile point shape; i.e., variations in shape of less than 6%, defined by 13 measurements, patterns of occurrences of the point shapes are seen that may inform the movement of groups and possible interactions between groups in the study area.

Havelkova, Petra [229] see Ambrose, Stanley

Haverland, Fiona, Mariëka Brouwer Burg (University of Vermont), and Scott Van Keuren (University of Vermont)

[305] *People Moving Pottery: Modeling the Circulation of Fourmile Polychrome in East-Central Arizona*

Southwest archaeologists have long relied on the exchange and movement of decorated pottery to infer cultural boundaries, migrations, and broader social networks. However, little investigation has been done on the processes or paths used to transport pottery within these social networks. The distribution of fourteenth-century Fourmile Polychrome ceramics presents an excellent case study to investigate these larger questions of the movement of people and pottery due to its narrow production zone, pinpointed in previous chemical sourcing analyses, and wide area of circulation. Using a combination of least-cost path and circuit theoretic geospatial modeling, we analyze the physical and cultural landscapes in east-central Arizona to identify possible corridors of human movement between known pottery-creator and pottery-recipient villages. We corroborate these hypothetical movement models using ethnographic and ethnohistoric resources including literature, oral histories, images, and historic maps. This paper focuses needed attention on how *people*, not just pots, moved around the rugged landscape below the Mogollon Rim, the decision-

making processes behind the paths they took, and the loads that they carried.

Hawkins, Nyah (Cal Poly Humboldt), Jessica Bedell (Cal Poly Humboldt, Cultural Resources Facility), and Barbara Klessig (Cal Poly Humboldt)

[90] *Tracing the Evidence of Textile Production in the Macedonian/Roman Site of Crnobuki, Macedonia: Trade, Cultivation, or Diffusion?*

This research examines the resources used for textile production in the archaeological site of Crnobuki, Macedonia. This includes the fibers for the garments and the clay, wood, and bone for tools necessary for their production. The question arises as to whether these resources were cultivated locally, brought in by the Romans, or traded for other goods. During the excavation seasons of 2023 and 2024, numerous artifactual indicators led us to hypothesize that there was a considerable level of textile production occurring within the site. The artifacts were found at a level of Roman occupation and included numerous loom weights, spindle whorls and possible bone awl. By conducting literature review and analyzing archaeological evidence, the goal was to determine where these resources were coming from; whether they were sourced locally, traded in, or diffused into the surrounding areas during the time of Roman expansion.

Hawkins, Nyah [90] see Bedell, Jessica

Hawkins, Rebecca, Gerry Robinson (Northern Cheyenne Tribe), Mel Miller (Algonquin Consultants), Cody Webster (Algonquin Consultants), and Ryan Bulmer (Algonquin Consultants)

[340] *Tse'eváhooseveno'otanevóse Tssetséhestáhese (the Northern Cheyenne Journey Home): Finding the Trail*
Using archaeology as one tool to define the route of the Northern Cheyenne Homecoming Trail, and to support ongoing Tribal and local community efforts to officially name it a National Historic Trail, the authors are ground truthing the locations of certain events. These include the Battle of Turkey Springs, the last battle of the Indian Wars fought in Oklahoma, the Wall Fight in Kansas, and, using search dogs, the burial sites of combatants from both sides. Finding the evidence for several historically documented incidents that happened, one after the other, across northern Oklahoma and western Kansas in the fall of 1878—and stringing them like beads to memorialize the route along which they transpired—is both challenging and a little different from most “trail archaeology” research projects. However, it proves hugely rewarding to assist in finding the places along the path that hundreds of Northern Cheyennes followed from Oklahoma to Montana in defiance of incarceration and in search of home—events that still live in the collective memory of the descendants of Indian and non-Indian witnesses and participants.

Hawks, Dustin [64] see Johnson, Jeremy

Hawks, Dustin [206] see Lewis, Michael

Hawley, Kirsten (Indiana University)

[41] *Geochemical Impacts of Freshwater Submersion on Precolumbian Ceramics: A Case Study from Cueva Padre Nuestro, Dominican Republic*

This study investigates the geochemical variation in archaeological ceramics from the freshwater submerged cavern site of Cueva Padre Nuestro in La Altagracia Province, Dominican Republic. We aim to determine whether significant geochemical differences exist between ceramics from this underwater site and those from nearby contemporaneous terrestrial sites. To test the null hypothesis that no significant geochemical differences exist, we employed multi-collector–inductively coupled plasma–mass spectrometry (MC-ICP-MS) for lead (Pb) isotope analysis, ICP-MS for trace element analysis, X-ray fluorescence (XRF), and thin-section petrography. Our results indicate significant variability in Pb isotope ratios and ICP-MS trace element concentrations between ceramics from submerged and terrestrial contexts and increased porosity observed in the underwater samples. XRF analysis and thin-section mineralogy are expected to provide more insight into mechanisms behind the variability between Cueva Padre Nuestro and the terrestrial sites. Findings suggest that the submerged environment likely causes postdepositional alterations, complicating the use of these ceramics as proxies for original vessel compositions. By comparing the geochemistry of ceramics across these sites, this study contributes to understanding ceramic production and exchange patterns in

precolumbian Hispaniola, while emphasizing the importance of considering postdepositional factors in geochemical analyses of underwater-recovered artifacts.

Haws, Jonathan (University of Louisville), Grace Ellis (Colorado State University), Milena Carvalho (ICArEHB), Nolan Ferar, and João Cascalheira (ICArEHB, Universidade do Algarve)

[384] *The Aurignacian Sequence of Lapa do Picareiro (Portugal): Abrupt Climate Shifts and Diachronic Variability in Land-Use Strategies*

Across Eurasia, abrupt climate shifts during the Late Pleistocene impacted human and natural systems. For the Iberian Peninsula, our knowledge of human adaptive responses during the Upper Paleolithic has improved in recent years with the development of new radiocarbon techniques and high-resolution paleoclimatic records. Integrated with the archaeological record, these datasets allow for a better understanding of the nature of human socio-ecological systems during the Upper Paleolithic. Lapa do Picareiro has become an important reference site for the Upper Paleolithic in Portugal. Here we present new data on the Aurignacian occupations dated 41.7–34.4 ka cal BP. The earliest Aurignacian presence dated 41.7–38.1 ka cal BP is based on a lithic assemblage from Levels GG-II with diagnostic carinated endscraper/core and bladelets. Level FF stands in stark contrast because the lithic assemblage is almost entirely comprised of simple flakes on quartzite and quartz. Subsequent Aurignacian occupations in Levels DD and BB dated between ~37 and 34 ka cal BP are based primarily on large flake production on chert with very few bladelets. Each occupation horizon is marked by distinct changes in raw material preference and technological organization reflecting different land-use strategies in synchronicity with abrupt climate shifts.

Haws, Jonathan [156] see Carvalho, Milena

Haws, Jonathan [235] see Real, Cristina

Hayashida, Frances [171] see Echenique, Ester

Haynes, Gregory (Desert Research Institute)

[218] *Revisiting Ceramic Collections from the 1950s Lake Cahuilla Shoreline Survey in the Salton Trough of California*

In the 1950s, the Archaeological Survey Association of Southern California collected artifacts from 118 prehistoric sites that lay along the shorelines of ancient Lake Cahuilla. Although the disposition of these artifacts following their collection remains murky, by the 1990s they had been accessioned into the Imperial Valley Desert Museum (IVDM). Data obtained by the Bureau of Land Management at IVDM shows that these collections contain over 14,086 ceramics, of which most are plain ware sherds that represent the remnants of utilitarian vessels manufactured and used by Ancestral Yuman families who made a living around the shores of the ancient lake. This paper discusses the structure and composition of the Lake Cahuilla Shoreline Survey ceramic collections. First, I present basic data on the size of these assemblages and use simple models to estimate the number of whole vessels present within them. This is followed by a discussion about the identification of ceramic wares, as well as certain attributes exhibited on the artifacts. I end by discussing what implications these findings have for future studies of Ancestral Yuman ceramics in the Colorado Desert, particularly in terms of determining cultural affiliation.

Haynes, Hannah

[192] *Archaeological Agave in the Cultural Landscapes of the Apache-Sitgreaves National Forest*

Across the southwestern United States and Mesoamerica, agave has been essential as a source of food, textile, and alcoholic/nonalcoholic beverages for millennia. This study examines a sample of 153 archaeological sites with observed presence of agave in the Apache-Sitgreaves National Forest, Arizona. This plant does not grow naturally on the northern side of the Mogollon Rim, and its presence is strongly indicative of archaeological human cultivation. This dataset was collected using forest archaeological site records, previous cultural resource reports, and published academic research. The spatial distribution of these sites on the landscape was investigated using ArcPro 3.3. The variables examined include site type, chronology, and environmental characteristics (slope, altitude, distance to water, etc.). Landscape in archaeology, while not limited to a singular definition, can be understood as the human environment that is composed of natural and cultural components. This environment, or taskscape, is shaped by the relationship

of landscape features and the communities that live within it, and the tasks that they undertake together. This research aims to discuss how humans and agave interacted with each other and shaped the landscape in east-central Arizona.

Haynes, Tanner (POWER Engineers Inc.), and Tristan O'Donnell

[390] *Not All That Glitters Is Unmodelable: An Introduction to the Application of Neural Radiance Fields in the Digital Modeling of Artifacts*

Photogrammetry has seen increasing utilization for artifact recordation and analysis in recent years but with the rise of this representational methodology has come several challenges including inaccurate reproduction of surfaces, and difficulties processing thin, transparent, or reflective objects. Emerging free open-source machine learning technology known as Neural Radiance Fields (NeRFs) presents a valuable alternative when creating 3D representations of objects. NeRF utilizes the same data collection methods as photogrammetry, making it an accessible addition to the archaeologist's digital repertoire that can be employed not only on future endeavors but past ones as well. The research presented demonstrates the various facets of NeRF technology and how it can help us preserve, record, analyze, and educate within an archaeological context.

Hayward, Chris (UCL)

[97] *Water Wars: Rulership and Mountaintop Spaces in the Mexica Calendar*

Peripheral spaces within the Basin of Mexico are central to our understanding of rulership in the Late Postclassic period. Frequent interaction, exchange, and conflict among Nahua rulers in nonurban settings is well attested to in ethnohistorical documentation and was structured by a shared ceremonial calendar. Water management at lake and mountaintop sites was embedded into many calendrical festivals which were perceived to be essential to agricultural prosperity. Depriving rivals access to water-generating mountaintop spaces resulted in an inability to influence rainfall patterns on behalf of their respective communities, causing regular tension between opponent royal courts. In this contribution, a hypothesis is presented in which ritual performances held in rural spaces were used to assert or challenge ownership over contested resources, leading to calendrically regulated conflict among competing Nahua royal courts labeled water wars.

Hazard, Rebecca [383] see Dudgeon, John

Hazelwood, Lacy [194] see McDonald, Holli

He, Xiaoge (Peking University, Harvard University)

[44] *Bronze Technology and Sociopolitical Dynamics in Sanxingdui Culture (ca. 1300–1000 BC, Southwest China)*

This research explores the development of bronze technology in Sanxingdui Culture and its impact on ritual practices and political strategies in southwest China (ca. 1300–1000 BC). By integrating recent excavation findings and testing results, the study examines the distinctive casting techniques and decorative methods used in Sanxingdui bronzes. The exclusive control over valuable resources, advanced techniques, and skilled craftsmen, along with significant investment in ritual practices, enabled the rulers to establish Sanxingdui as a powerful theocratic and autocratic kingdom.

He, Xiaoge [279] see Flad, Rowan

He, Yahui

[44] *Exploring Plant Bast Fiber Utilization in Neolithic Societal Transitions on the South Mongolian Plateau*

The exploitation and technology of plant bast fiber have played a crucial role in human daily life for millennia. However, due to its perishable nature, plant fiber has remained underexplored in archaeological research. Recent advances in residue analysis using polarized light microscopy have proven effective in identifying microfibre remains, shedding new light on this material. The southern region of the Mongolian Plateau underwent profound societal transitions from hunting-gathering to sedentary lifestyles around 8500 BP, culminating in the emergence of the first urban centers during the fifth millennium BP. Although extensive studies have documented the utilization of plants as food resources, the exploitation of bast fiber remains inadequately researched. This study addresses this gap by analyzing tools such as grinding stones and spindle

whorls to explore the role of plant bast fiber in shaping social relationships during the Neolithic period in this region.

Heacock, Erika (Denver Museum of Nature and Science), and Angela Rueda

[293] *Deinstalling a Legacy Exhibit: Practical Advice and Lessons Learned from the Deinstallation of the North American Indian Cultures Hall at the Denver Museum of Nature and Science*

In June 2023, the Denver Museum of Nature and Science (DMNS) closed its North American Indian Cultures Hall (NAICH), a legacy exhibit from the 1970s. In doing so, museum staff hoped to heal the harm caused by racist stereotypes perpetuated in the exhibit and to repair broken relationships with Indigenous communities. When the doors to this legacy exhibit closed to the public, the work behind the scenes began for DMNS Anthropology Collections staff. Understanding the significance of the work ahead, the DMNS Anthropology Collections team set out to deinstall, rehouse, and care for belongings from NAICH collaboratively and ethically. This approach to deinstallation quickly began to inform all areas of collections management. With many institutions closing legacy exhibits, this paper seeks to provide practical steps for developing and implementing policies and procedures that put cultural care practices not only at the center of deinstallation but at the center of collections management. From collaborative consultations to the spiritual care of belongings to the integration of Indigenous knowledge into collections data, staff from the DMNS Anthropology Collections team will share the steps they took to integrate cultural care practices, lessons learned, and how they can be applied to other institutions.

Healan, Dan (Tulane University)

[289] *Follow the Debitage: Spatial, Temporal, and Sociopolitical Dynamics of Prismatic Core/Blade Technology in Mesoamerica*

Based on 45 years of field and laboratory research including participation in two projects codirected by Deb Nichols, the author examines Mesoamerican prismatic core/blade technology from raw material acquisition through final product utilization and how it varied given the various contexts in which it functioned.

Heaney, Christopher (Pennsylvania State University)

[26] *Hall 25: Beyond the American Ancestors of Americanist Archaeology*

In 1965, the Smithsonian's first Hall of Physical Anthropology opened with a "Skull Wall" whose 160 crania of "Peruvian Indians" visualized how the world's population "exploded in historic times." The wall came down in advance of NAGPRA, followed by other ancestors and human remains displayed in American museums. Yet NAGPRA's national framing has meant that the Andean dead—like ancestors and kin from other non-Native North American groups—have seen their relative proportions grow in storerooms while institutions repatriate Indigenous ancestors closer to home. Today, the largest single series at the Smithsonian is from the Andes. Using their case as an example, this paper offers a historical contextualization of anthropology's use of non-North American human remains to build its racialized "American" populations. Doing so highlights American anthropology's reliance on prior archaeological traditions and museum projects, such as that of the Peruvian state, whose projection of "Inca" ancestry worldwide assisted their local vanishing. Does Americanist archaeology need to make its historic collection of the globalized dead more visible, to connect potential ancestors or kin to communities with agendas differing from the national institutions assumed by transnational repatriations? What if descendants request more research on their collectivized present and past, not less? *****This presentation will include images of human remains.**

Heaney, Pauline [174] see Finch, Damien

Hechler, Ryan

[105] *Duh Jukang, Wak'a, and Other Physical Manifestations of the Volcanic Divine: Indigenous Perceptions of Volcanism in the Barbacoan World*

Throughout Spanish colonialism to the modern, written accounts often mentioned Indigenous ontologies of volcanoes and their influence on the lived realities of communities throughout the northern Andes, especially within Barbacoan regions. The Tsáchila referred to volcanoes as *duh jukang* ("hill spirit") and a *poné* ("shaman") could interpret or mitigate its influence. A volcanic lake could be referred to as *mudúh jukang*,

with *papu mudúh* being used to describe an “angry lake” that was dangerous to health. Colonial accounts referred to Indigenous perceptions of the Quilotoa Volcano’s regional impact: the destruction of its last major precolumbian eruption and the dangers of its associated lake. After the fifteenth-century Inka conquest of the northern Andes, the emplaced communities of the empire would use Quechuan terminology and refer to a volcano as a *wak’a* (worshipped landscape feature) that housed an *apu* (spiritual lord). Imperial communities made ritual offerings to volcanoes—Central Andean perceptions of volcanic worship that were often culturally intelligible to local colonized societies. Volcanic activity was believed to have oracular connotations and volcanoes were both feared and revered. This is an ethnohistoric study of past Indigenous perceptions of volcanoes and the lived realities of human resilience to volcanic activity.

Heckenberger, Michael [341] see Perron, Taylor

Hedlund, Jonathan, Marcus Espinosa (ERO Resources Corporation), and Justin Batista (ERO Resources Corporation)

[179] *New Archaeological Data on Ephemeral Post-Early Ceramic Occupations Marked by Mobility and Diversity* Relative to the preceding periods, Middle Ceramic to Late Ceramic sites are uncommon in parts of Colorado including the central Southern Rocky Mountains and the Palmer Divide. In these areas, scant radiocarbon dates and the occasional diagnostic artifact hint at continued occupation following the Early Ceramic period. Recently, ERO Resources Corporation (ERO) completed excavations of four new sites with Middle to Late Ceramic radiocarbon dates, diagnostic projectile points, and Western Dismal River Gray Ware sherds. Analysis is ongoing, but ERO’s initial results indicate that these open-air and rockshelter sites represent activities left by people with high residential mobility, familiarity with regional lithic resources, and access to maize. The assemblages also reflect diversity in technological or cultural traditions in the manufacture of projectile point types and ceramics. Unlike sites from earlier periods, which often exhibit dense clusters of basin hearths and earth ovens surrounded by ground stone, features at these later sites are limited to surface hearths, if present, and small amounts of ground stone. This presentation provides new perspective into a context that derives most of its data from excavations prior to the 1970s, near surface excavations, individual pot-drops, and components often represented by a single hearth.

Hedlund, Jonathan [179] see Gilmore, Kevin

Hedlund, Jonathan [230] see Matsuda, Marie

Hefner, Amber

[63] *The Examination of A Brownware Assemblage: An Overview of the Sanchez Site Ceramics*

The Sanchez site (AZ CC: 2: 452 [ASM]) has a brownware assemblage (ca. AD 100–500) dating to the period when ceramics were first manufactured in the American Southwest. This site is a *cerro de trincheras* settlement, or hilltop site, near Safford, Arizona, on the upper Gila River between the Mogollon and Hohokam cultural regions. It was primarily occupied during the Early Agricultural period (800–550 cal BC) and Early Pithouse period (AD 250–400). This site is measured as 13.4 ha and includes 143 rock ring structures. The ceramic sherds found at the Sanchez are brownware, crafted in a style that is consistent with what is called Alma Plain and with forms consistent with *tecomates*. American Southwest early brownware was not heavily studied until the 1940s; therefore, this poster may provide insight for early brownware collections. A ceramics analysis was used to determine the ceramic attributes. This poster will examine the sherds attributes and variability of this site to gain insight on brownware in the early American Southwest. In addition, this poster will compare the ceramics from the Sanchez site to other similar aged sites in the Mogollon and Hohokam regions.

Heilen, Michael (Statistical Research Inc.), and Shelby Manney (Arizona Army National Guard)

[92] *Envisioning the Integration of Cultural and Natural Resource Management in the United States*

In the United States, cultural and natural resources are managed following separate sets of regulations, guidelines, methods, and workflows. The US Department of Defense (DoD) and other federal agencies seek to streamline and synergize management efforts by integrating cultural and natural resource management. While attention has been paid to why resource management should be integrated and what the potential

benefits will be, *how* integration can be practically and meaningfully achieved has received minimal consideration. Strategies and tactics for integrating cultural and natural resource efforts, data, workflows, and outcomes are needed. Ideally, such strategies and tactics should (1) align with the agency's mission and the interests of Indigenous and other stakeholder communities; (2) employ holistic landscape-oriented perspectives, methods, data models, and digital tools; (3) establish common goals, priorities, workflows, and success criteria; (4) foster collaborative, interdisciplinary, and evidence-based policy and research; and (5) engage the public's thirst for knowledge about the social and environmental history of planet earth. This poster presents a visioning exercise for strategically planning the large-scale methodological, organizational, and perspectival changes needed to integrate cultural and natural resource management in the United States, with a focus on resources managed by the DoD.

Heilen, Michael [92] see Disque, Candice

Heilen, Michael [232] see Manney, Shelby

Heimberg, Dor (Hebrew University of Jerusalem)

[278] *Steppe Architecture: Structures within the Enclosures of the Medieval Wall System*

The Mongolian steppe is often associated with pastoral nomadism and seasonal mobility. However, mobility does not necessarily mean transience; Architecture always served an important role not only in the adaptability of people in the steppe to the environment, but also as a demonstration of centralized power. This paper presents two newly discovered architectural features built within square, fortified enclosures each associated with different branches of the Medieval Wall System in eastern Mongolia. The sites were excavated as part of "The Wall" project. The first construction, dated to the Kitan-Liao period (916–1125 CE), incorporates wooden posts and rammed earth, creating an impressive gate to the enclosure and a large rectangular building located inside the enclosure. The second, dated to the following Jurchen-Jin period (1115–1234 CE), is semi-subterranean structure with a stone-slabs heating system (*khanzan khaalalt* in Mongolian and *kang* in Chinese). Through comparing the differences and similarities between those two structures, this paper aims to highlight the architectural choices employed in extra-urban Medieval Mongolia, in terms of technology, construction materials, planning, and tradition. Those architectural features bring new perspectives to our understanding of human ecology and landscape adaptability within the empires of the steppe.

Hein, Anke [99] see Womack, Andrew

Heindel, Theresa [324] see Mixer, David

Heinrich, Frits, Annette Hansen (Vrije Universiteit Brussel), Gert Baetens (KU Leuven), Christophe Snoeck (Vrije Universiteit Brussel), and Laura Motta (University of Michigan)

[167] *Interdisciplinary Approaches to Plant Stable Isotope Analysis: A Case Study from Late Antique Roman Karanis (Egypt)*

Stable plant isotope analysis can provide proxy data to help model agricultural practices in the past, such as manuring and irrigation, or reconstruct environmental circumstances (e.g., related to water availability). Interpretation of such data is often challenging as they can be explained through different mechanisms or socioeconomic behaviors/practices that can be difficult to distinguish. This paper aims to show how innovative approaches, in which plant isotope results are interpreted using data from diverse disciplines, can help resolve this issue. It does so through presenting the results of the stable isotope analysis (C and N) on a unique, absolutely dated (fourth–seventh centuries CE) large collection of perfectly preserved desiccated plant remains from the Roman village of Karanis (Fayum region, Egypt). Not only did plant materials preserve exceptionally well at the village but so did documentary papyri that yield a great wealth of information on local agricultural practices and socioeconomic and environmental circumstances. Integrating these data with archaeological data and archaeobotanical and chemical analyses (e.g., elemental composition using ICP-MS) we will interpret the isotopic results, shedding new light on Karanis's Late Antique decline and abandonment, allegedly due to environmental degradation, while producing the first plant isotopic results for the region and period.

Heinrich, Frits [337] see Hansen, Annette

Hélie, Jean-François [194] see Flynn-Arajdal, Yasmine

Heller, Eric (University of Southern California), and Maria Carolina Zensen-Simoës (USC)
[109] *Degrees of Freedom: Augmented and Virtual Reality Applications for Research and Education at La Milpa North, Belize*

Among Fred Valdez's outstanding qualities is his commitment to a multivocal approach to regional projects. Allowing multiple viewpoints and methodologies to coexist in conversation with one another substantially contributes to an increasingly rich understanding of the Three Rivers Region. By fostering an environment in which creative approaches to unpack the past thrive, Valdez enabled our use of technology-driven archaeological methods, in which we apply augmented reality (AR) and virtual reality (VR) technologies to advance our study of La Milpa North, a Terminal Classic compound in the hinterlands of La Milpa. Our use of AR enables real-time overlays of 3D data onto the physical landscape, allowing students and researchers to visualize previous excavation units and 3D architectural reconstructions as they physically traverse the site. Furthermore, a fully immersive VR experience permits users to explore the landscape of La Milpa North remotely and engage with the same dataset. These AR and VR applications offer enhanced and immersive experiential learning opportunities in both the field and classroom. As a research tool, these technologies offer powerful new means of visualizing data, guiding future excavations, and engaging in phenomenological analysis, thereby enhancing our efforts to document and interpret these complex social landscapes.

Heller, Eric [362] see Bellorado, Benjamin

Heller, Eric [52] see Martin, Lauri

Heller, Eric [122] see Zensen-Simoës, Maria Carolina

Hellewell, Stryder

[323] *Examining Collapse, Fragility, and Mycenaean Greece*

Late Bronze Age (LBA) Greece, ca. 1200 BCE, was a period of fiery transformation. During this final phase of the Bronze Age, the Mycenaean civilization was at its height. Greece was comprised of highly stratified palace-states and city-states, each with its own government structure. To understand the nature of the political decline experienced widely during the LBA collapse, which saw the fall of multiple political entities, one must first understand the precursors to it. Looking at the fragility of the palace and city-states and the internal struggles that presaged the LBA collapse is critical. In this poster, I explore how internal forces brought about the collapse of the Mycenaean system. I examine how civil unrest, political instability, and a multitude of other problems with the political systems within ultimately ushered in the collapse of Mycenaean Greece.

Hellstrom, John (University of Melbourne), Helen Green (University of Melbourne), Jo McDonald, and Janet Hergt (University of Melbourne)

[174] *U-Th Dating of Cave Carbonate Overgrowths: Indicators for Establishing Closed System Reliability*

Uranium-thorium dating of speleothem calcite has become a spectacularly effective geochronometer underpinning important Quaternary climate records. The method is at its strongest on clean, macrocrystalline calcite, typically stalagmites found deep underground. U-Th depends on closed-system accumulation of thorium, as a decay product of a fixed initial amount of uranium. If a sample is contaminated with thorium at its time of formation, this effect can be corrected for, up to a point, at the expense of reduced precision of the age. But if a sample has not remained closed to chemical migration of uranium, then it becomes all but impossible to accurately date, and this error cannot be detected internally. Clean, well-preserved stalagmites are usually reliable in this regard, but other speleothem types can be susceptible to uranium migration, usually loss to the environment giving erroneously old U-Th ages. U-Th dating of thin carbonate coatings over rock art can be reliable but might not be. Hence assemblages of age determinations should be carefully assessed for internal consistency. Micro-drilled or in situ investigations of spatial variability apparent age can be especially effective in this regard. Single, unsupported ages of any crust material, including coralline speleothem, should be treated with caution.

Helm, Charles (Nelson Mandela University), Andrew Paterson (Nelson Mandela University), and Renee Rust (Nelson Mandela University)

[279] *Evidence in the African and European Rock Art Record Suggesting Awareness of Proboscidean Seismic Communication*

[WITHDRAWN]

Helmer, Elliot [108] see Stevenson, Freeman

Hemmings, C. [345] see Cook Hale, Jessica

Henderson, A. Gwynn [337] see Rossen, Jack

Henderson, Emily [125] see Dufresne, Sydney

Henderson, Julian [308] see Lu, QinQin

Hendrickson, Katherine [99] see Napora, Katharine

Hendrickson, Mitch (University of Illinois, Chicago)

[49] *TAP'ing the Origins of Angkor: Incipient Research on Iron and the Expansion of the Khmer Empire, Cambodia*
Late twentieth-century metallurgical research in mainland Southeast Asia, led by the Thai Archaeological Project, spearheaded interest in the relationship between copper alloy production and increasing prehistoric social complexity (mid-second m. to mid-first m. BCE). Lack of prehistoric iron furnaces and artifacts however has largely hindered investigations of the appearance and the potential impact of ferrous technology on the rise of early chiefdoms and incipient kingdoms. Discovery of a vast industrial landscape dating to the historic era (~seventh to twentieth century CE) around Phnom Dek, the “Iron Mountain” in central Cambodia, has enabled 15 years of archaeological and metallurgical investigation into the technological history and impact of large-scale iron smelting associated with the expansion of the Angkorian Khmer Empire (ninth to fifteenth century CE). This paper traces the origins and impacts of this research and demonstrates that the true “Iron Age” in Southeast Asia occurred centuries after the initial appearance of this transformative metal.

Hendy, Jessica [278] see Carolus, Christina

Hendy, Jessica [167] see Kalodner, Jacob

Henrikson, L. Suzann (Museum of Idaho), Daron Duke (Far Western Anthropological Research Group), and Christa White-Gonzales (Idaho National Laboratory)

[372] *A Tale of Two Technologies: Folsom and Haskett in the Terreton Basin of Southern Idaho*

Recent efforts to compile a comprehensive dataset of terminal Pleistocene projectile points from southern Idaho have produced more than expected Folsom localities. Predictably, ongoing investigations at Owl Cave provide compelling evidence of bison procurement. However, Haskett technology is also well-represented at sites within the region. Roughly 90 Haskett localities have been documented within the Terreton Basin, an expansive lowland wetland, where the densest concentration of Folsom locales is also known to occur. While both technologies are thought to have emerged in the early Younger Dryas, Haskett technology has yet to be found in direct association with large herbivores, including extinct species. A total of six sites in the Terreton Basin have produced both Folsom and Haskett, providing a unique context for comparing these two technological traditions.

Henrikson, L. Suzann [372] see Duke, Daron

Henrikson, L. Suzann [372] see Frandson, Kristina

Henrikson, L. Suzann [372] see Fugitt, Alexandra

Henríquez Urzúa, Mario [194] see Alfonso-Durruty, Marta

Henry, Edward (Colorado State University), Derek Hamilton, Michael Pante (Colorado State University), Lucretia Kelly (Washington University, St. Louis), and Caroline Graham

[314] *Outlining the Production of Place at Two Adjacent Middle Woodland Era Earthen Enclosures in Central Kentucky, USA*

Geometric earthen enclosures are emblematic of Middle Woodland era (ca. 200 BCE–500 CE) built environments in eastern North America. They symbolize places within the landscape that drew Indigenous people together—sometimes for more than 1,000 years. Despite research on large and small enclosures growing in quantity and quality, there are several unknown aspects of the processes involved when precontact Native American communities constructed ditch and embankment enclosures. In this presentation we discuss results from an intensive study of the Bogie Circles, two circular enclosures that were examined using a combination of geophysical remote sensing, solid soil coring, bulk soil and sediment analyses, micro 3D analyses of bone surface modification, and chronological modeling of AMS radiocarbon and OSL dates. Our results help refine understandings of how the two enclosures were constructed and what approaches to food provisioning might have taken place during the construction event. Moreover, we determine when one of the enclosures with a surviving embankment was built with a high degree of chronological precision. These diverse datasets point to clear activities Indigenous societies engaged in when gathering to build these monuments nearly two millennia ago.

Henshaw, John (William & Mary)

[101] *How Worlds Collide: Drought and Culture Change in a Late Woodland Frontier*

The interwoven pathways of culture and environment are key to the interpretation of the past. Ancient peoples navigated the complexities of environmental changes through strategic decisions and the management of local landscapes. This dynamic holds true for the Chesapeake region where historically climate was varied and localized while also bucking the macroregional trends of the Southeast and mid-Atlantic. Circa AD 1400, migrants arrived along the Potomac River and into this dynamic climate from the north and west. Their arrival contributed to the development of significant material and cultural changes such as the proliferation of palisades, the emergence of new forms of relationality, and intensified economic activity. In this paper, I discuss the environmental conditions which affected the population movements of the Potomac drainage and the role of climate change in the formation of interactions central to the closing centuries of the Late Woodland period. By treating drought and climate as influential actors, I explore how people strategized social practices to navigate their lived experiences of the environment in a newly formed frontier.

Henshaw, John [50] see Gallivan, Martin

Henshaw, John [101] see Jenkins, Jessica

Henson, Devin (University of North Carolina, Chapel Hill)

[32] *On Points in the Piedmont: A Consideration of the Use of Discriminant Function Analysis (DFA) in Understanding Transitions in Projectile Weapon Systems in North Carolina*

The transition between the spear-thrower (atlatl) and bow in eastern North America (ENA) has long served as an important area of consideration for understanding processes of cultural change in the region, as the shift between these two technologies is theorized to have significantly impacted various aspects of the social organization of Native communities (e.g., hunting, warfare, and settlement patterns). Given poor preservation of perishable components of these tools, developing methods for determining the functional uses of their lithic projectile points has been a core focus of research on projectile weaponry. Discriminant function analysis (DFA) has been employed in studies of the spear-thrower/bow transition for decades, but significant gaps exist in both its application to and effectiveness in understanding this transition in more localized settings. Using a sample of type specimens from the Carolina Piedmont in the North Carolina Archaeological Collection, I evaluate support for existing temporal models of the bow's adoption through DFA while simultaneously engaging in a critical examination of the technique's current suitability to analyzing these models in this area.

Herd, Reagan Leigh [281] see Cleghorn, Naomi

Heredia Espinoza, Verenice (El Colegio de Michoacán), Christopher Beekman (University of Colorado, Denver), and Gabriela García Ayala

[180] *Grupos residenciales en un paisaje aterrazado: Implicaciones sobre los regímenes de propiedad durante el Formativo y Clásico en Los Guachimontones*

Los regímenes de propiedad prehispánicos son un tema poco tratado en el Occidente Mesoamericano. Generalmente se asume que una élite controlaba la tierra mientras el resto de la población la trabajaba y tributaba sus frutos, o bien que las tierras eran comunales donde grupos corporativos tuvieron jurisdicción sobre ellas. No obstante, hay amplia evidencia de distintos regímenes de propiedad Mesoamericanos, algunos de ellos correlacionados con ciertos sistemas agrícolas. En esta ponencia exponemos sobre el patrón de asentamiento en Los Guachimontones y zonas aledañas, donde se han registrado grupos residenciales entre miles de terrazas y exploramos sus implicaciones sobre la tenencia de la tierra durante el Formativo y Clásico.

Heredia Espinoza, Verenice [180] see Beekman, Christopher

Heredia Espinoza, Verenice [180] see García Ayala, Gabriela

Hergt, Janet [174] see Hellstrom, John

Hergt, Janet [174] see Wu, Ying-Li

Hernandez, Christopher (Loyola University, Chicago)

[100] *Fortifications: Beyond Modernist Dualisms*

Fortifications are a linchpin for contemporary understandings of ancient Maya lifeways. Archaeologists, through the study of martial architecture, have revealed that the Classic Mayas were not so peaceful after all and today lidar surveys are shedding light on regional networks of fortifications. Despite the large growth in datasets over the last half century, the study of fortifications continues to be stifled by dualist conceptual frameworks. War is typically framed within modernist dualisms, such as materialism versus symbolism—or objects versus subjects. To escape the modern dualist trap, a more recent trend in the archaeology of warfare is to highlight that war in general and fortifications, in particular, are dynamic. Consequently, a wall or tower can have martial and symbolic aspects. In line with this trend, I employ the Hach Winik (aka Lacandon Maya) conceptual framework of *K'ax* to understand how past Mayas made war. *K'ax* dissolves the binary categories of Western Modernity (i.e., subject/object, symbolism/materialism) to reveal a relational world full of vitality, in which a diversity of actors could and often did participate in Maya war-making. Mountains, trees, and water are not merely modified by human activity, they actively take part in war-making and constituting the human experience.

Hernández, Enrique (Mirador Basin Project), Thomas Schreiner (FARES Foundation; Mirador Basin Project, Guatemala City), Richard Hansen (Idaho State University; FARES Foundation), Carlos Morales-Aguilar (University of Texas, Austin), and Douglas Yerovy Mauricio (Mirador Basin)

[383] *The Mirador-Calakmul Karst Basin Causeway System as an Element Promoter of the Construction Peak during the Late Preclassic*

The Mirador-Calakmul Karst Basin is located in the south of Campeche, Mexico, and north of Petén, Guatemala. For the territory of Guatemala, it has been identified that the settlement of many sites was carried out in the Middle Preclassic, but the peak of cities such as El Mirador, Tintal, and Nakbe occurred in the Late Preclassic period (350 BC–AD 150). The monumental architecture in the dominant sites of the area consists of pyramidal structures that measured up to 72 m in height, palaces and elite residences, Group “E” complexes, private pools, platforms, defensive walls, moats, canals, causeways, and reservoirs. The investigation of Mayan causeways and the most recent identification of elevated causeways through lidar technology suggests that in the region there was a network of centrally managed artificial roads that facilitated the transportation of resources and promoted the construction peak of the large centers during the Late Preclassic.

Hernández, Enrique [383] see Morales-Aguilar, Carlos

Hernandez, Isabella (University of Calgary), Elizabeth Paris (University of Calgary), Roberto López Bravo (Universidad de Ciencias y Artes de Chiapas), and Gabriel Lalo Jacinto (Centro INAH-Chiapas)

[325] *Who Ordered the Shellfish? A Social and Dietary Examination of Mollusk Consumption in Highland Chiapas, Mexico*

Mollusks are one of the oldest known dietary staples in Chiapas, Mexico, with direct evidence for consumption as early as 9000 BCE, and continuing to the present day. The freshwater gastropod known as *jute* or *shuti* (*Pachychilus* sp.) is one of the most widely-consumed species, while a variety of marine species were widely exchanged as currency, ornaments, and sacred objects. This paper will examine the dietary uses and social accessibility of *Jute* and other mollusk species at the highland Chiapas sites of Moxviquil and Tenam Puente. Both of these sites were occupied during the Classic and Early Postclassic periods (ca. 500–1100 CE), on defensible hilltops lacking easy access to major rivers. Tenam Puente's role as important administrative center with a large central marketplace may have facilitated the importation of substantial quantities of *jute*, as well a diversity of marine shell species. The systematic removal of the apex from most *jute* specimens at both sites suggests their preparation for dietary consumption. Our paper will also consider the degree of accessibility of imported mollusk species across households of varying wealth and status at Tenam Puente and Moxviquil. Culinary preparation techniques will be considered with reference to modern-day practices in Chiapas.

Hernandez-Bolio, Gloria (Cinvestav Unidad Mérida), Keith Prufer (University of New Mexico), Mara Reyes (Atlas Arqueológico de Guatemala), Patricia Quintana (Cinvestav Unidad Mérida), and Vera Tiesler (Universidad Autónoma de Yucatán)

[36] *Foodways in the Heart of the Classic Central Lowlands*

For over 20 years the Proyecto Atlas de Guatemala (Atlas), has documented more than 400 sites across the many river basins and humid savannas of the southeastern Petén. Here the communities experienced rapid growth in the Early and Late Classic, developing into complex, yet mostly modestly centralized political entities. The Project's reconnaissance strategies of commoner rather than elite contexts provides us with an opportunity to explore a more representative population's subsistence pathways than is the case in conventional archaeology of other areas of the Maya Lowlands. Using bulk stable isotopes, we assess for this paper variations in C_4/C_3 and trophic level contributions to diet breadth, variability, and changes in diet over time. Contextual and biovital data allow further comparisons to urban centers and among markers of different social identities. Patterns and some shifts regarding economical activities were found among the sites and communities. Age-at-death, sex, and biocultural modifications are associated with slightly differential dietary regimes. Reliance on C_4 crops peaks in the Late Classic and continues unabated until the abandonment of the region with no evidence for Postclassic reoccupation.

Hernandez-Bolio, Gloria [36] see Zazueta, Maria

Hernández Castillo, Daniel (University of Florida)

[331] *Eating Clams to Keep Society in Motion: Shell Middens and Social Reproduction at the Longotoma Bay, Central Chile (32°24' S)*

Coastal research has stressed the variety of systemic roles played by shell middens as architectural features, markers of the landscape/seascape, and as the result of the accumulation of food debris. The latter is the effect of concrete economic behavior; however, the exploitation and consumption of shellfish on coastal settings is loaded with meaning. In this work, I explore the how this practice contributed toward maintaining and negotiating the social order among populations of coastal hunter-gatherers. This is approached from a medium spatial scale during a period of intense social interactions by ceramic-bearing mobile populations in the Longotoma Bay, central Chile (ca. 2200–1000 cal BP). Research has shown a high presence of these populations on the coast; however, their concrete coastal adaptations and the role of the marine resources remain underexplored. New records in the area allow a discussion on the spatial articulation between sites and social aggregation during the period. Reiterative exploitation of coastal resources in closed circuits of coast-inland mobility may have worked as the basis for groups to gather on coastal spaces, promoting social interaction. This emphasizes the relevance of shell middens as places of social reproduction and political negotiation based on seasonal feasting of shellfish.

Hernández del Villar, Andrea [56] see Fujita, Harumi

Hernández Velázquez, Maria Lizeth [330] see Lefebvre, Karine

Herndon, Kelsey

[324] *Engineering Resilience: Excavation of Ancient Maya Agricultural Terraces in the San Bartolo-Xultun Territory*

The excavation of ancient Maya agricultural terraces in the San Bartolo-Xultun Territory in the Petén Region of Guatemala offers insights into the engineering and construction of sustainable land management systems throughout the tropics. These terrace systems were critical for maximizing arable land, managing water flow, and preventing soil erosion in a challenging environment. Through a combination of traditional excavation methods and advanced remote sensing technologies, particularly lidar, we have mapped and analyzed extensive terrace networks throughout the San Bartolo-Xultun Territory. Initial excavations indicate that the terraces were constructed with sophisticated techniques to stabilize slopes and optimize water retention and drainage. Remote sensing data has allowed us to identify previously undetected features, significantly enhancing our understanding of the spatial organization and scale of these systems. This paper will focus on the construction methods, terrace architecture, and the role of these features in agricultural intensification. The integration of remote sensing and archaeological excavation offers a comprehensive view of Maya landscape management and provides valuable models for modern sustainable land-use practices, particularly in areas prone to environmental degradation.

Herr, Sarah (Desert Archaeology Inc.), and Maria Gutierrez (INCUAPA-CONICET Facultad de Ciencias Sociales [UNICEN])

[370] *Publishing Regional Journals in the Americas*

In this session, we have invited authors, editors, and publishers from North and South America to discuss the role of regional archaeological journals in scholarly communication and their efforts to make these journals impactful and sustainable. Regional journals are often the products of historical societies, university departments, or museums. Historically, they have heavily relied on volunteer labor and institutional capacity to support their regular publication. Their mission is to disseminate research results, reporting theoretically informed, methodologically robust, information about archaeology—and often anthropology, history, and natural history—in a defined geographic region. To be effective, the journals need to be attractive to authors building careers and fulfilling ethical obligations to publish and share the results of their work. The articles also need to be written and distributed in accessible ways to regional archaeologists and interested avocationalists. Authors of the papers in this session discuss their choices related to implementing peer review, funding, and publication partnership models.

Herrera-Parra, E. Moises [343] see Bolster, Alyssa

Herrick, Maeve (Statistical Research Inc.), and Jennie Sturm (Statistical Research Inc.)

[123] *Ground-Penetrating Radar at the Agua Mansa Pioneer Cemetery, San Bernardino County, California*

Approximately 6 acres of ground-penetrating radar (GPR) data were collected at the Agua Mansa Pioneer Cemetery in San Bernardino County, California, to support management and rehabilitation efforts at the cemetery. At the time of the survey, 458 markers were visible on the surface, and these were mapped with RTK GNSS. Through careful processing and analysis of the GPR data, approximately 2,212 graves were identified. Of those, 406 are marked or appear to have markers associated with them. This means that approximately 1,806 identified graves either are unmarked or have markers/slabs that are not currently visible on the ground surface. This poster presents the results of these mapping efforts, discusses insights into the organization and spatial layout of the cemetery, and presents different burial contexts identified in the GPR data.

Herrick, Maeve [276] see Sturm, Jennie

Herridge, Victoria [185] see Hassett, Brenna

Herrmann, Corey (Yale University)

[46] *Terminally Formative: Early Ecuadorian Social Complexity 50 Years after Donald Lathrap's Ancient Ecuador: Culture, Clay and Creativity*

The year 2025 marks the semicentennial of the Real Alto project led by Donald Lathrap and Jorge Marcos. It is also the 50th anniversary of one of Lathrap's most impactful publications, *Ancient Ecuador: Culture, Clay and Creativity (3000–300 B.C.)*, written to accompany a multiyear international exhibition of the same name. *Ancient Ecuador* was a chance for Lathrap to present a synthesis of coastal Ecuadorian precolumbian social development distinct from Betty Meggers's *Ecuador (1966)*. In particular, *Ancient Ecuador* gave Lathrap the opportunity to demonstrate the deep cultural connections between the Ecuadorian coast and the Amazon Basin, drawing rich interpretations of social behavior and *longue durée* culture change out of iconic Valdivia, Machalilla, and Chorrera ceramic vessels. This paper reflects on *Ancient Ecuador* 50 years after its publication and examines some of the issues that Ecuadorian archaeology has confronted since 1975. Not least of these is coastal Ecuadorian archaeology's own frustrations with maintaining a critical mass of study and shifting priorities of research. However, as in Amazonian archaeology, many of Lathrap's interpretations remain workable hypotheses for twenty-first-century Ecuadorian archaeologists to test. In this way, the *Gran Caiman* continues to make ripples in our field long after his passing.

Herrmann, Edward [229] see Meier, Trenton

Herrmann, Nicholas [112] see Ahlman, Todd

Herzog, Nicole [129] see Rogers, Andrew

Hidalgo, Silvana [105] see Vallejo, Silvia

Higelin, Ricardo, and Jorge Rios Allier (Indiana University)

[334] *San Pablo Villa de Mitla, Rock Art, and the Prehistoric Caves Initiative: Effectiveness of Polycentric Governance in Managing Cultural Heritage*

This study presents the outcomes of applying the Institutional Analysis and Development (IAD) framework to define focal action situations within the Mexican Cultural System (MCS). Through a detailed examination of San Pablo Villa de Mitla, Rock Art, and the Prehistoric Caves Initiative, the research highlights the effectiveness of polycentric governance in managing cultural heritage (CH) in Mexico. The study utilized the Network of Adjacent Action Situation Analysis (NAAS) and Combined IAD-Social-Ecological Systems (CIS) frameworks to compare institutional approaches and assess their impact on CH management. The findings reveal that polycentric governance, as conceptualized by Elinor Ostrom, offers significant advantages in fostering collaboration between local communities and institutional stakeholders in preserving and managing cultural resources. The research underscores the importance of considering CH as a shared resource, managed and valued by the communities that identify with it, thereby bridging the gap between economic and archaeological perspectives in cultural heritage management.

Higelin, Ricardo [347] see Perez Rodriguez, Veronica

Higgins, Howard, Martin Stein (Bureau of Land Management, Carlsbad Field Office), and Aaron Whaley

[340] *Collaboration with Industry: The Permian Basin Programmatic Agreement; An Illustrative Example*

These symposia have showcased various forms of collaborative and community archaeology. Yet, the extent of collaboration with industry has not been explored as deeply as it deserves. In today's world, archaeological research and historic preservation often rely on partnerships between industry and archaeological professionals and managers. Industry often relies on archaeological approval for developments, and archaeologists, in turn, rely on industry for funding. This type of collaboration requires a mutually beneficial arrangement, ensuring that both archaeological resource management and industry gain from the partnership. This paper highlights the Permian Basin Programmatic Agreement (PA) as a case study of such collaboration with the oil and gas industry. It provides background as to why the PA was needed, its historical

development, and examples of projects executed under the agreement. Finally, the paper discusses insights gained from the PA's implementation and why certain amendments are needed before its renewal.

Hilbert, Lautaro [67] see Dudgeon, Kate

Hildebrand, Elisabeth [63] see Grillo, Katherine

Hill, April [336] see McConnell, Ryun

Hill, Chad [350] see Feng, Jennifer

Hill, Matthew, Jr. [289] see Otárola-Castillo, Erik

Hillman, Aubrey (University at Albany, SUNY), Sumar Hart (University at Albany, SUNY), and Robert Rosenswig (University at Albany, SUNY)

[387] *The Geochemical Signature of Saharan Dust in Lake Sediments*

The transport and deposition of dust from the Sahara across the Atlantic and into the Yucatán Peninsula can play a role in modifying temperature and precipitation patterns in northern Belize. Presumably, the flux of this dust changes through the Holocene as climate patterns and consequent land cover of the Sahara varies. At 4200 years BP (2250 BCE), the Sahara underwent a shift toward increased aridity and desertification. At this time, distinctive pink layers of fine silt were deposited in two small lakes in northern Belize, near Progreso Lagoon. Our primary research question was, "Does the geochemical composition of these deposits match that of Saharan material?" To test our hypothesis that the geochemical compositions are similar, we measured the trace elemental concentrations of the lake sediments and compared them to previous research on Saharan material. Preliminary results suggest similar geochemical compositions, although additional and more spatially extensive data on Saharan material is needed before our conclusions are definitive. Tentatively, our results suggest a possible link between global climate change, Sahara dust transport, regional climate impacts in Belize, and societal reorganization.

Hills, Kendall [333] see Foe, Aldo

Hills, Kendall [379] see Kestle, Caleb

Hills, Kendall [379] see Reid, David

Hilsden, Jay (University of British Columbia), Iain McKechnie (University of Victoria), X^wməθk^wəy^əm (Musqueam Indian Band; Musqueam First Nation), and Camilla Speller (University of British Columbia)

[288] *Flatfish in Focus: Developing a ZooMS Reference Database to Identify Archaeological Flatfish on the Pacific Northwest Coast*

Archaeological fish remains provide detailed information on paleoenvironmental conditions, marine anthropogenic impacts, and past human-animal relationships. Fish bones, however, can be challenging to identify to species due to their morphology, the need for comprehensive comparative collections, and destructive taphonomic forces creating fragmentary bone assemblages. On the Pacific Northwest Coast, salmon and herring, two cultural and ecological keystone species, have drawn the attention of many archaeologists, leaving other culturally and environmentally significant fish taxa to often be overlooked. To spotlight one such under-researched group of fish, we constructed a ZooMS reference database to identify archaeological Pacific flatfish, representing species like halibut, flounders, and soles. We confirmed biomarkers for 25 flatfish species endemic to the Northwest Coast, enabling the reliable identification of fragmentary or morphologically indistinct flatfish elements to the species level. In collaboration with x^wməθk^wəy^əm (Musqueam) First Nation, we demonstrate the efficacy of this database through the analysis of flatfish elements from several archaeological sites in traditional x^wməθk^wəy^əm territory. The ZooMS analysis of flatfish remains across several archaeological contexts will provide insight into the diversity of flatfish caught and consumed by x^wməθk^wəy^əm, as well as aid the reconstruction of marine ecosystems prior to the advent and ongoing process of colonialism.

Hinkle, Jenna [337] see Yost, Chad

Hinsley, Curtis (Northern Arizona University)

[339] *Discovering the Hemenway Southwestern Archaeological Expedition (1886–1889): A 40-Year Collaboration between Archaeology and History*

Archaeologist David Wilcox and historian Curtis Hinsley met at the Harvard Peabody Museum in 1983 and found a common interest in the Hemenway Expedition of the 1880s, led by Frank Hamilton Cushing. They contracted with the University of Arizona Press for a seven-volume history of the expedition, based on an extensive but scattered documentary trail that included diaries, field notes—and 5,000 pages of correspondence accidentally discovered in 1991. While pursuing other interests as well, they worked closely for four decades and ultimately completed three volumes and a series of essays before David passed away in 2022. In this paper Hinsley presents an account of their working relationship and friendship and suggests some lessons from their collaboration for the history of archaeology.

Hipkiss, Charlotte [173] see Sear, David

Hirniak, Jayde

[281] *The Use of Cryptotephra to Address Big Questions through Improved Age Models and Interregional Comparisons*

Using far-traveled volcanic ash in tephrochronological studies has transformed this technique. Traditionally, tephrochronology used visible tephra layers. However, methodological advances extended its capabilities to detect non-visible horizons (cryptotephra) which can be traced thousands of kilometers from source eruptions. The discovery of 74 ka Youngest Toba Tuff (YTT) at Pinnacle Point 5-6N and Vleesbaai demonstrate the significance of cryptotephra and how it can be used in regions that are not volcanically active during periods of human evolution. Additionally, with the recent identification of YTT at Shinfa-Metema I in northwest Ethiopia, it is now possible to correlate archaeological deposits between southern and eastern Africa at a two-week resolution. This resolution cannot be attained with other dating methods. We can now ask questions about early human behavior across vast regions. Here, I will report on recent discoveries of cryptotephra horizons throughout South Africa. I will also provide an overview of the North African tephra record and examine how similar deposits help refine the archaeological record in this region. With the continuous identification of YTT in ultra-distal localities, it is critical to assess new regions that hold a potential for the use of cryptotephra to advance the way we ask questions in archaeological research.

Hirose, Masato (Nagoya University Museum)

[60] *Hunting and Fishing at a Site of the Initial Jomon Period on the Tip of a Peninsula: Faunal Remains from the Tenjinyama Site*

This study analyzes faunal remains from the Tenjinyama site in Central Japan to discuss the subsistence of the hunting-gathering economy in a small peninsula in the Initial Jomon period. The site is located on a hilltop in the tip of the Chita Peninsula, which separates Ise Bay and Mikawa Bay. The excavation was conducted in 1956 by Nagoya University. There are shell mounds of the same period in this peninsula, and faunal remains have been reported. However, the Tenjinyama site has few shells, which is unusual among coastal sites of the Jomon culture that yield faunal remains. The large amount of pottery excavated from this site has also attracted attention in discussing the effects of the large-scale volcanic eruption that occurred in southwestern Japan during the same period. As a result, the total number of faunal remains excavated from the site (NSP) was 1,552 (5,357.5 g), of which 417 (3,066.4 g) were identifiable (NISP). Mammals accounted for about 59.2% of its total NISP, dominated by Japanese deer and wild boar. Marine fishes accounted for about 37.9% of the NISP, the majority of which were caught in coastal waters, although some vertebrae of tuna from the open sea were also found.

Hirose, Masato [82] see Kadowaki, Seiji

Hirshman, Amy (West Virginia University), Madison Hapak (West Virginia University), and Katie Corcoran (West Virginia University)

[231] *Ceramic Color Variation in the Lake Pátzcuaro Basin, Michoacán, Mexico*

Color is often a key variable to create and maintain different groupings in ceramic classification schemas. While the classification schema for ceramics for the Lake Pátzcuaro Basin and the cultural formations leading to the Late Postclassic Tarascan (P'urépecha) state and empire (Late Postclassic; ca. AD 1350–1522) emphasize paste, color is still an important within and between group variable. This basin typology was created in the 1970s and applied both a Type-Variety and Modal Analysis. Building on the methodology of Ruck and Brown's 2015 article, "Quantitative Analysis of Munsell Color Data From Archaeological Ceramics," we measure the color variation in a subset of the basin type collection to compare with both the original color identifications and with previous research on chemical characterization of the paste categories.

Hirth, Kenneth (Penn State University)

[289] *Ritual Economy and Celebration in a Central Honduran Chiefdom*

Ritual celebrations and feasting were important components for the integration of precolumbian societies. Nevertheless, the frequency, scale, and effort expended in ritual events can be difficult to identify from archaeological remains. This paper reconstructs a large and synchronous site-wide ritual celebration at the site of Salitrón Viejo, which was the regional center of a chiefdom society in north central Honduras between 200 and 400 CE. The celebration commemorated the completion of the site's primary civic-ceremonial precinct. In addition to feasting, the celebration involved the site-wide deposition of over 2,000 carved jade artifacts across the site's two ritual precincts.

Hirth, Kenneth [235] see Domic, Alejandra

Hirth, Kenneth [106] see Gutiérrez, Gerardo

Ho, Joyce Wing In (Harvard University), Lynne Rouse (Deutsches Archäologisches Institut), Sören Stark (New York University), and Nathaniel Erb-Satullo (Cranfield University)

[80] *Final Bronze to Early Iron Age Metallurgical Technologies at Kimirek-kum-I, Uzbekistan*

While metal production technologies and exchange networks in Bronze Age Central Asia have captured much scholarly attention, the metal economy of the subsequent Final Bronze to Early Iron Age southern Central Asia in the late second millennium BC is rarely investigated. Recent excavations and surveys at Kimirek-kum-I (KKI; ca. 1250–1050 cal BC) in southern Uzbekistan found metal production debris (i.e., slags and crucible fragments) and considerable amounts of metal artifacts, including copper-based alloys, lead, silver, and gold. Metallurgical studies on KKI materials may thus shed new light on metallurgical developments in prehistoric southern Central Asia. We analyzed metallurgical slags and metal artifacts from KKI using portable X-ray fluorescence (pXRF), optical microscopy, and scanning electron microscopy-energy dispersive X-ray spectroscopy (SEM-EDS). Based on morphology, microstructure, and chemical composition of samples, we investigated the production technologies of copper-based alloys at the site. With complementary typological evidence suggesting KKI's participation in extensive regional exchange, our metallurgical study aims to examine technological interconnections within and between southern Central Asia, the central Eurasian steppe, the southern Siberia, and the Iranian plateau.

Ho, Percy Hei Chun (Harvard University), Kristine Richter (Texas A&M University), and Christina Warinner (Harvard University)

[235] *Improved Taxonomic Resolution of Eurasian Cervidae Using Collagen Peptide Mass Fingerprinting*

The human-deer relationship extends deep into antiquity, with many members of the Cervidae family long being utilized as raw materials, foodstuff, medicine, as well as ceremonial objects. However, few studies have emphasized species identification within the Cervidae family, largely due to morphological similarities between different cervid species, and between cervids and other sympatric species in the Bovidae and Moschidae families. While developments in Zooarchaeology by Mass Spectrometry (ZooMS) reveal much potential in overcoming traditional identification issues, existing reference markers for the Cervidae family remain inherently limited in resolution. Therefore, we generated new ZooMS peptide markers for five species (*Cervus nippon*, *Muntiacus muntjak*, *Muntiacus reevesi*, *Hydropotes inermis*, and *Cervus canadensis*) in the

Cervidae family, two species in the Bovidae family (*Gazella subgutturosa*, *Procapra gutturosa*), and one species in the Moschidae family (*Moschus moschiferus*). We discovered novel candidate ZooMS marker regions for species in the Cervidae, Bovidae, and Moschidae families, with identification down to the tribe or species level. The applicability of our biomarkers is further verified using zooarchaeological datasets from East and Central Asia. Together, we present a robust, alternative method that distinguishes medium and large mammal specimens under the Cervidae, Bovidae, and Moschidae families in archaeological settings.

Hoag, Elizabeth (Cleveland Institute of Art)

[295] *One Tough Archaeological Mother: The Act of Mothering in the Field*

In her recently published autobiography, *Girl Archaeologist*, Alice B. Kehoe discusses the hurdles she overcame and trauma she endured as a woman looking to break into a professional space almost completely dominated by men. Her volume adds to the growing body of literature published over the last decade about the trailblazing (and often overlooked) history of women in the field. These works often outline the difficult experiences women had in the field through exacting grit, determination, and resilience. Here I want to highlight some of the positive experiences women and mothers have in the field. In this paper I contextualize Kehoe's and other women's experiences of motherhood and mothering in the field through the lens of matricentric feminism as a vital, empowering illumination. Framing motherhood in the field of archaeology as a visible, positive, and normalized practice and identity will create a more supportive environment for mothers. A matricentric feminism perspective can help us all move from resilience to empowerment and acceptance for mothers in the field.

Hoareau, Leïla

[345] *Changing Coastlines and Persisting Links: Human/Littoral Interactions during the Late Glacial around the Mediterranean Basin*

Around the Mediterranean basin, marine resources play an important role in both subsistence and the symbolic universe. Here, we focus on the Epigravettian, a Late Glacial culture that spans the northern Mediterranean basin from Provence to the Greek coast. Epigravettian groups have a strong symbolic link with the coastal environment, reflected in their bodily ornaments composed almost exclusively of marine shells. Based on bibliographical data and unpublished data on the composition of Epigravettian ornamental assemblages, we will discuss the networks linking coastal occupations to inland sites, giving all Epigravettian groups access to marine shells. Coastal sites sometimes hold a special place in exchanges and in the *chaîne opératoire* for making ornaments. We will also look at how groups have adapted and modified their symbolic systems as coastlines have changed, leading to variations in species availability. In this paper, we will explore how hunter-gatherer groups maintain and sustain their ties to the coastline in the midst of Late Glacial environmental change.

Hockaday, William [128] see Kidwell, Jasmine

Hodapp, Magen (Jamestown Rediscovery [Preservation Virginia])

[178] *A Whale of a Well: Zooarchaeological and Curatorial Approaches to Sorting 300,000 Faunal Remains from Jamestown's First Well*

Jamestown's first well was dug by colonists soon on their arrival to Virginia to access fresh water, but it was filled with domestic refuse by survivors of the disastrous Starving Time winter of 1609–1610 on orders for a “cleansing” of the fort by incoming leadership. The Starving Time saw colonists resort to taboo dietary practices including the consumption of rats, cats, dogs, and horses, as well as survival cannibalism. Excavations of the well yielded hundreds of thousands of faunal bones, identified as food debris from this period, with layers N and W having the largest concentration of animal remains. Layer N, estimated to have over 300,000 pieces of bone, has the greatest quantity of fauna and represents a unique challenge for Jamestown's curatorial staff. In this paper, I identify the zooarchaeological methods used to sort the large quantities of bone into species and element in conjunction with curatorial challenges specific to Jamestown including limited space, a fixed grant budget, and incorrect identifications. Additionally, I discuss preliminary faunal identifications, taphonomic patterns, and their implications for our understanding of the Starving Time.

Hodgkins, Jamie [88] see Casillas, SJ
 Hodgkins, Jamie [300] see Eckels, Monica

Hoelzel, Chloe, Aaron Celestian, John Murray (Arizona State University), and Curtis Marean (Arizona State University)

[299] *Using Raman Spectroscopy to Identify the Type of Process Used to Heat Treat Silcrete Lithics*

Silcrete used to make stone tools in South Africa ~70 ka shows signs of being heat treated. There are debates over the type of heat treatment used, and unfortunately, there are minimal approaches to identifying different heating methods. Three methods have been proposed for this ancient heat treatment: (1) direct, (2) ember, and (3) sand-bath heat treatment. Since some methods require temperature management and others are relatively simple it would be useful to differentiate the methods as they have varying implications for human cognition and technological complexity. Raman Spectroscopy can analyze the chemical composition and the molecular stress/strain in silcrete that may assist differentiating the three methods. Results from a preliminary study of silcrete experimentally heat-treated using each proposed method of heat treatment are presented and show promise in contributing to this research question.

Hoff, Michael [189] see Pastor, Alexander

Hofland, Samantha (University of Montana), Meradeth Snow (University of Montana), Catrina Banks Whitley (Principal Research Group), Helen Graham (Principal Research Group), and Abigail Fisher (Principal Research Group)

[297] *Sugar Land 95: Using Investigative Genetic Genealogy to Identify Individuals from a Clandestine African American Cemetery*

The Sugar Land 95 are victims of the convict leasing era in the United States that began after the ratification of the 13th Amendment that abolished slavery “except as a punishment for crime whereof the party shall have been duly convicted” (US Const. Amend 13). As a result, the Sugar Land 95 individuals were leased to sugar plantations in Sugar Land, Texas, where they were forced to work in brutal conditions and endure abuse and neglect at the hands of plantation owners. These individuals sustained numerous injuries, including gunshot wounds, bone infections, fractures, head injuries, and many other ante- and perimortem injuries evidenced on the skeletal remains. The remains of the Sugar Land 95 were disinterred in 2018 and subsequently analyzed to create biological profiles, and assess trauma, pathologies, and taphonomic condition. These profiles were compared to historical records to begin identifying the individuals as well as their living descendants. Today, Principal Research Group and the Snow Molecular Anthropology Laboratory have begun the process of genetic identification using forensic investigative genetic genealogy (FIGG). This cemetery represents a unique opportunity not only to restore identity but to test the validity of FIGG for historic/degraded samples.

Hofman, Courtney [193] see Cowan, Isabella

Hogg, Nicholas (Institute of History and Philology, Academia Sinica), Scarlett Chiu (Institute of History and Philology, Academia Sinica), Patrick Kirch (University of Hawai‘i, Mānoa), and Glenn Summerhayes (University of Otago)

[121] *A New Approach to an Old Network: Modeling Lapita Interaction and Exchange in the Bismarck Archipelago, Papua New Guinea, Using Social Network Analysis (SNA)*

The study of long-distance exchange and interaction between Lapita communities dispersed over the islands of the Pacific has long been a central focus for Oceanic archaeologists. In the Bismarck Archipelago of Papua New Guinea, data from the analysis of portable material culture, particularly pottery and obsidian, outlined the presence of an intricate web of connections linking communities across the region during the Early Lapita period (ca. 3300/3200–3100 cal BP). Employing motif inventories from 13 Early period Lapita pottery assemblages, this study uses the approach of Social Network Analysis (SNA) to model the theoretical networks linking Lapita sites across the region, with the frequency of interactions between communities studied using similarity analysis and the relative importance of sites via Centrality Analysis. It concludes that the results of the SNA align well with patterns identified via the study of other types of portable material

culture, which when taken together suggest that interactions between Lapita communities largely occurred within two regional networks.

Hoggarth, Julie (Baylor University), J. Britt Davis (Arizona State University), Tia Watkins, and Jaime Awe (Northern Arizona University)

[301] *Developing a High-Precision Radiocarbon Chronology to Date the Rise and Fall of the Royal Palace Complex at Baking Pot, Belize*

Royal palaces in the Maya lowlands served various purposes as the primary locale of royal domestic life. Still, their architectural configurations suggest they also served as an outlet for semi-public activities as well. The architectural configuration of the royal palace at Baking Pot suggests both administrative activities in the public-facing areas, in contrast with elite domestic activities in the more private residential courtyards that were located behind the pyramidal eastern shrine of Str. B1. To better understand Baking Pot's chronological history, we excavated a sample of structures and courtyards in the royal palace complex. Deep vertical excavations in the courtyards were aimed at identifying the long construction history of the palace, targeting the timing for the origins of the royal court as well as its final activities. Trench excavations were also carried out in two eastern shrines to identify investments in ritual and mortuary traditions. Finally, test excavations focused on the corners of courtyards to investigate the final activities associated with the site's abandonment. Radiocarbon data from these contexts establish the Preclassic origins of the Baking Pot royal court followed by a succession of architectural developments and activity that persisted throughout the Early and Late/Terminal Classic periods.

Hoggarth, Julie [109] see Awe, Jaime

Hoggarth, Julie [320] see Corey, Kasey

Hoggarth, Julie [128] see Kidwell, Jasmine

Hoggarth, Julie [325] see Meyer, Brett

Hoggarth, Julie [223] see Suarez, Nicholas

Höhne, Jérémy [239] see Dussol, Lydie

Holcomb, Cassandra (Utah State University), Judson Finley (Utah State University), Lana Fullbright (Uintah County Heritage Museum), and Alycia Luke (Uintah County Heritage Museum)

[91] *The Rockshelters of the Vernal Area: Reexamining the Leo C. Thorne Perishable Collection in the Uintah Basin*
In the early 1930s, a local photographer named Leo C. Thorne documented 12 rockshelters in the Ashley-Dry Fork and Steinaker Draw area northwest of Vernal, Utah. Thorne amassed a substantial artifact collection from these and other local sites around the Uintah Basin, now displayed at the Uintah County Heritage Museum (UCHM) in Vernal, Utah. The need to reevaluate and document these rockshelters is driven by UCHM's ongoing NAGPRA compliance, conducted in collaboration with Utah State University. My research into the Thorne Collection offers new insights, specifically addressing critical knowledge gaps about early maize agriculture in the northern Uintah Basin. By reevaluating historical site forms, archival newspaper articles, field notes, and journals, alongside a comprehensive analysis of the artifacts and uncured photograph collection, this study adds valuable data to the regional archaeological record. This work reconnects artifacts with their original sites and adds critical data to the space-time context of legacy collections. Beyond contextualizing the past, the initiative advances archaeological methods, reevaluates overlooked legacy collections, and deepens our understanding of the Uintah Fremont as a cultural entity in the archaeological landscape of the Uintah Basin and Colorado Plateau.

Holcomb, Justin (Kansas Geological Survey, University of Kansas)

[53] *The Application of Soil and Sediment Micromorphology in First Americans Research*

Over the past several decades, the application of soil and sediment micromorphology in ge archaeology has flourished, especially outside of the Americas. Despite the widespread acceptance and use of this approach by our European counterparts, a similar effect has yet to occur among ge archaeologists focused on the early archaeological record in the Western Hemisphere. In this paper, I provide a brief review of soil and sediment

micromorphology in First Americans (Paleo-Indigenous) research, including some recent applications across the USA, with the goal of demonstrating how soil micromorphology can address issues of stratigraphic integrity, evaluate site formation processes, and aid in paleoenvironmental reconstruction. As we continue the hunt for early sites across the Western Hemisphere, researchers should consider incorporating micromorphological analyses into archaeological research designs.

Holcomb, Justin [96] see Blong, John

Holen, Kathleen [165] see Holen, Steven

Holen, Steven (Center for American Paleolithic Research), and Kathleen Holen (Center for American Paleolithic Research)

[165] *The Mammoth Steppe Hypothesis Revisited: Taphonomic Evidence for a Pre-LGM Occupation of the Americas*
 In 2013 we published a book chapter titled “The Mammoth Steppe Hypothesis: The Middle Wisconsin Peopling of North America.” Although this chapter has been largely ignored by the archaeological community, we think the hypothesis is more easily defended today based on new evidence. Here, we present the archaeological, geoarchaeological, actualistic, and experimental taphonomic evidence first used to develop this hypothesis and argue that taphonomic evidence of percussion modification of large mammal limb bones, especially mammoths and mastodons, represents compelling archaeological evidence of human presence in the Americas during and before the Last Glacial Maximum. We then test the hypothesis with new archaeological evidence published after 2013 that strongly supports the Mammoth Steppe Hypothesis. While this hypothesis posits a terrestrial entry into the Americas from Siberia during the mid-Wisconsin, sometime between 25,000 and 40,000 years ago, there is also evidence of a coastal migration route; therefore, the two hypotheses are not mutually exclusive.

Holland, Kendall [101] see Mehta, Jayur

Holland-Lulewicz, Isabelle (Pennsylvania State University)

[101] *Climate Change and Local Socio-ecological Systems in the Past along the Georgia Coast, USA*
 Modeling expected environmental conditions derived from past global climatic trends presents an issue of scale when linking the historical trajectory of past societies to climatic change. Global climate change influences local environmental conditions at scales critical to the contextualization of past human-environment relationships, either manifesting in expected ways or drastically diverging from them. This becomes especially challenging in highly dynamic coastal environments. This paper addresses the importance of localized paleoenvironmental reconstructions, how these deviate from global trends, and how the understanding of specific species responses to ecological drivers is imperative to investigating past socio-ecological systems, particularly how people make economic decisions regarding resource management strategies in the face of shifting ecological regimes. This paper discusses this within the context of the Georgia Coast, USA, to evaluate trends in the vulnerability and resilience of fisheries and fisheries management strategies of both vertebrate and invertebrate resources, the primary resource base for US coastal people, over millennia.

Holland-Lulewicz, Isabelle [87] see Picarelli-Kombert, Matthew

Holland-Lulewicz, Jacob (Penn State), and Nicholas Kessler (University of Arizona)

[50] *A Microhistory of an Ancestral Muskogean Town and Narratives of Early Indigenous-Colonizer Dynamics in Southern Appalachia*

The King site in northwestern Georgia is one of the most fully excavated sixteenth-century Indigenous towns in the southeastern United States. Home to ancestors of the Muscogee (Creek) peoples, King serves as an analytical microcosm to explore the direct and indirect impacts of the earliest encounters between Indigenous peoples and Spanish colonizers. Potentially the location of the town of Piachi, whose residents engaged with both De Soto (1540) and Pardo (1566), the King site is estimated to have existed for no more than 50 years, between ca. AD 1525 and 1575. These estimates, however, are based almost completely on

Indigenous artifact typologies, the presence of certain European materials, and an analysis of architectural lifespans. Because of the importance of the King site in understanding both the conditions preceding contact with colonizers, as well as the impacts of these interactions on livelihoods, we undertake an absolute dating program to reveal the microhistorical processes underlying these critical encounters. Using ca. 70 new AMS dates from architectural features, combined with high-resolution dendrochronological analyses of house posts, we reconsider the internal history of the King site and use these new temporalities to recast narratives of Indigenous-colonizer dynamics and subsequent population movements across the region.

Holliday, Vance (University of Arizona)

[280] *High Plains, Rocky Mountains, and White Sands: Travels with Dave Meltzer*

Traveling and working with Dave Meltzer for 40 years has been an adventure and learning experience. We first met working together on Archaic sites—to which we have returned later in our careers. Since then, we have reinvestigated Paleoindian sites, such as Lindenmeier, Midland, Miami, Black Mountain, Folsom, and Lone Wolf Creek, to better understand their archaeological, geological, and paleoenvironmental records, as well as their significance to Paleoindigenous studies in North America. Our collaborative research has emphasized broader aspects of Late Quaternary environmental influences (or not) on site formation processes and on humans, including the validity of the Younger Dryas Impact Hypothesis. Meltzer is a consummate field archaeologist, not a bad geoarchaeologist, and an outstanding mentor/colleague to a host of graduate students. Intellectually, in trying to understand both the peopling of the Americas and the history of that topic, he weaves in glacial geology, sea-level change, paleoclimate and climate change, paleobotany, paleontology, and, of course, genomics. His interdisciplinary breadth and depth are now legendary, making him an exemplary Fryxell awardee.

Holliday, Vance [57] see Merriman, Christopher

Holly, Donald [284] see Wolff, Christopher

Holmer, Marie (Idaho National Laboratory), Reese Cook (Idaho National Laboratory), Christa White-Gonzales (Idaho National Laboratory), Kailey Benham (Idaho State University), and Emiltze Cervantes-Contreras (Washington State University)

[230] *Construction Zones: Understanding Space at an Early Twentieth-Century Western Work Camp*
[WITHDRAWN]

Holmes, Charles [279] see Lanoë, François

Holmes, Jonathan [211] see Hunt, Abigail

Holmes, Stella, and José Peña (Chronicle Heritage)

[85] *Weaving Structures and Yarn Technologies of Late Intermediate Period Textiles: Huarney Valley, Peru*
 Textiles were important in ritual, economic, and social activities in the central Andes. Households were required to produce it for elites or local authorities, and in other instances, specialized workshops were exclusively producing textiles for the ruling class. Textile fragments were recovered within the public architecture at El Campanario site during the 2018, 2019, 2022, and 2024 field seasons. Radiocarbon dates place El Campanario occupation between AD 1150 and 1280, associated with the beginning of the Late Intermediate period. The textiles recovered during the excavation are composed of plain-weave, decorated, and fine, elaborated textiles. The examination of weaving techniques and yarn technologies, including the style of weave or spin direction, sheds light on the levels of standardization, or lack thereof, in the textiles. Analyzing these patterns allows for further understanding of their production and how the textiles may have been used by elites at the site. The presence of various types of textiles within the public architecture could indicate the importance of the production and consumption of plain-weave textiles by local elites.

Holmes, William [224] see Valdez, Richard

Holst, Irene (Smithsonian Tropical Research Institute), and Ashley Sharpe (Smithsonian Tropical Research Institute)

[166] *Paleoecology of a River Junction: Preliminary Discoveries of Flora and Fauna Analysis at Altar de Sacrificios, Guatemala*

The Maya site of Altar de Sacrificios is uniquely situated where the Chixoy/Salinas and Pasión Rivers meet to form the Usumacinta. A focus of the Altar de Sacrificios Archaeological Project is the way ancient peoples adapted to this unique setting, including how the site settlement changed as the river systems shifted over time, and how the inhabitants used the strategic importance of the river junction to improve their economic standing in the region. This paper provides preliminary results for a pilot archaeobotanical analysis of sediment samples taken from habitation centers outside the site core, as well as faunal analysis of midden deposits found in what are believed to be principally residential mounds. Preliminary phytolith analysis shows a disturbed forested landscape dominated by bamboo and palms that is dissimilar to the current disturbed grassland used for cattle pastures. The faunal material appears to represent primary and secondary midden discard, including substantial evidence for butchery and bone debitage from crafting. Surprisingly, several mounds contained Pleistocene megafauna bones and teeth, apparently used by the Classic Maya. Such evidence reveals a long-standing connection between the Classic Maya and a much earlier time. This study emphasizes the need for further paleoecological research in this region.

Holt, Benjamin [315] see Comer, Douglas

Hong, Seungyeon (University of Georgia)

[115] *Using Radiocarbon Dating to Refine the Urban Plan and Community Reorganization in the Capital of the Early Baekje State, Three Kingdoms Period, Korea*

The capital region of the early Baekje state during the Three Kingdoms period of Korea (ca. AD 300–475) underwent significant transformations in urban planning, associated with the dynamic population aggregation in the central Korean Peninsula. Previous studies have suggested that the region began from the medium-sized villages and developed to the urbanized capital with earthen works and royal palaces/tombs rapidly, in line with the state's growing centralization and emergence hierarchical power after ca. AD 300. However, recent excavations and analysis of legacy data indicate a complex urban occupation history and long-term transformation in settlement patterns. I present a chronology of the capital area through Bayesian modeling of radiocarbon dates from the urban settlement sites. Using the sequence of the built environment, I suggest that the capital experienced expansion under the different plans in two district phases after ca. AD 350, marked by the relocation of the urban settlement sites and reconstruction of the earthen walls. The changing spatial organization reveals diverse interactions among regional groups, including competition and/or collaboration. This case study challenges the evolutionary model of state formation that emphasizes a linear progression toward a centralized polity, rather it reflects a diverse process of urban transformation shaped by complex community interactions.

Hong, Seungyeon [50] see Birch, Jennifer

Honglin, Ran [279] see Tian, Yajing

Hook, Fiona (University of Western Australia)

[59] *Finding the Mangrove Highway: 51,000 Years of Marine Adaptation at Boodie Cave, Western Australia*

Coastal environments have been argued to be crucial in the dispersal of modern humans from Africa to Australia. However, there is limited archaeological evidence of coastal resource use between Arabia and Sahul before 50,000 years ago. Boodie Cave on Barrow Island, Australia, occupied by Aboriginal people around 51.1 ka, offers some of the earliest evidence of marine resource use outside Africa. I will present a quantitative analysis of the marine invertebrate assemblage from this site, comprising 37,697 fragments representing more than 40 taxa. This unique record provides insights into how Aboriginal people interacted with a dramatically changing coastal landscape across the postglacial sea-level rise period. Boodie Cave provides the first unequivocal evidence for the use of mangroves in Australia at first occupation, 51.1–46.2 ka, which continues until the abandonment of the site by 6.5 ka. There is long distance (~20 km) transport of

both economic and utilitarian marine invertebrates from past coastlines to Boodie Cave pre- and post–Last Glacial Maximum. The marine invertebrate analysis provides evidence of a shell tool tradition that persists in this region for 46.2 ka until the recent past, making it one of the longest used shell traditions yet identified.

Hoopes, John (University of Kansas)

[113] *Predators and Preciosities: Acquiring and Displaying Status and Power in the Isthmo-Colombian Area*

The Isthmo-Colombian area served as a nexus for communication and exchange among chiefdoms and middle-range societies in southern Central America, northern South America, the Antilles, northern Amazonia, and the northern Andes. Political actors and especially ambitious leaders acquired and openly displayed finely crafted objects of jadeite, gold, and tumbaga to communicate ecological metaphors. They presented themes of their transformations into therianthrope crocodiles in the context of ritual performances depicted in the imagery of elaborate, high-status craft objects. This paper argues that specific individuals parlayed access to rare raw materials and finely crafted jewelry into political power through specific narratives of magical, physical transformation into mythical crocodilian entities whose stories were conveyed through a rich mythology encoded in a variety of material objects, from intricate flying-panel metates to ornate ceramic vessels. This activity appears to have occurred within the context of secret societies in which participants communicated information regarding beliefs shared by individuals from a variety of distant polities. Ambitious “Crocodile Men” communicated their power in the context of metaphors about specific habitats, drawing on the ecology and the threats posed by dangerous reptiles.

Hoopes, John [378] see Carlson, John

Hoover, Brooke [92] see Lawler, Brooks Ann

Hoover, Kelly (University of Maine), Allen Gontz (Clarkson University), Alice Kelley (University of Maine), Dan Sandweiss (University of Maine), and Ana Mauricio (Pontificia Universidad Católica Del Peru)

[123] *When Sand Becomes a Story: Using Ground-Penetrating Radar to Reveal an Architectural Timeline at Los Morteros, Chao, Peru*

In July 2024, our team collected nearly 20 km of 600 MHz GPR data on the earliest large-scale monumental site in the region: Los Morteros, a Late Pre-ceramic monumental site located in the Lower Chao Valley on the northwest coast of Peru. Analysis and interpretation suggest the presence of a drape of aeolian sand over anthropogenic structures, including walls, rooms, and floors of various sizes. There also appears to be a later use of the site, based on stratigraphic relationships. From this research, we developed a 3D reconstruction of the last phase of use at Los Morteros. An interdisciplinary approach to research at Los Morteros—such as this one—involving archaeology, geophysics, and climate studies, provides a context for the development of social complexity in a dynamic physical and climatic environment, and allows for a deeper comprehension of current human-environmental interactions. From this research, we have identified evidence of man-made structure underneath the surface of the mound at Los Morteros, contributing to a preliminary understanding of the timeline for human construction at one of the earliest monumental structures in the Americas.

Hopper, Alaura (University of California Santa Cruz)

[218] *Captive Baskets: Contemporary Indigenous History of California Basket Collecting and Repatriation Policy*

The vast majority of baskets in Californian collections were woven in the past 150 years and yet they are often displayed as separate from their contemporary histories; posed as ahistorical relics of a static imagined past. Rather, basket collections as social beings contain a contemporary past that is fraught with the realities of settler colonialism, Indigenous persistence and the creation of the Californian academy. By studying the practice of California basket collecting I hope to better understand the interplay of settler colonialism and basket collecting and examine repatriation and NAGPRA policy within basket collections. My aim is to understand what aspects of the contemporary Indigenous history, a term coined and explored by Beth Rose Middleton Manning, of basket collecting can the archive illuminate. I propose that when basket collections are seen as social beings they portray larger intricacies about ecological change, land stewardship, and cultural revitalization. I will present my preliminary findings from my interdisciplinary methodologies of archival

research and heritage ethnographies from University of California, Davis; the California Academy of Sciences; and the Bancroft Library.

Hoppes, Kelsey (ASM Affiliates), and Edward Stoner (ASM Affiliates)

[245] *Communities of Practice, Past and Present: An Examination of Precontact, Historic, and Modern Uses of Public Lands and Situated Learning in the Central Great Basin USA*

A recent Class III Cultural Resources Inventory of over 53 square miles Bureau of Land Management (BLM) land in the central Great Basin within Pluvial Lake Newark and the Pancake Range has resulted in the documentation of over 650 archaeological sites. These include large-scale pronghorn traps, residential camps, and toolstone quarries dating from the late Pleistocene and early Holocene Paleoarchaic period to the Protohistoric period. Evidence of charcoal production done to fuel smelters in support of mining activities in mid to late nineteenth century along with evidence of nineteenth- and twentieth-century ranching and transportation infrastructure was also documented. The latest proposed use of these public lands is a large-scale wind farm for renewable energy production. This paper explores the concepts of Communities of Practice and Situated Learning in which the people who created these sites shared common concerns, sets of problems, and interests, and came together to fulfill both individual and group goals through active participation and social interaction. The establishment of modern CRM communities of practice and situated learning is critical to the proper documentation of these cultural resources and the accurate evaluation of their historical significance and provides a nexus between past and present communities.

Hopt, Justin (Oregon Department of Fish and Wildlife)

[207] *Inadvertent: Struggles and Opportunities of a Plateau Zooarchaeological Analysis (45FR19), Franklin County, Washington, USA*

Archaeological excavation and analysis have increasingly moved from a purely academic realm to one that is largely done by the private sector. Zooarchaeological analyses are likewise being increasingly done by private cultural resource management (CRM) companies. This presents opportunities for more researchers to be involved in zooarchaeological research and for the creation of more data. This work also comes with a myriad of challenges stemming from the profit driven timelines and budgets of CRM work as well as the lack of comparative materials and tools available to CRM researchers. This study attempts to highlight both the opportunity that CRM zooarchaeology presents, as well as the difficulties faced by CRM researchers in producing and analyzing assemblages collected in CRM work. To illustrate this, a case study is presented from a construction monitoring project associated with archaeology site 45FR19 that led to emergency excavation of 12 1 × 1 m excavation units and the collection of 1,339 zooarchaeological specimens.

Hopwood, Marie (Vancouver Island University), and Mary Lacaprara (Vancouver Island University)

[219] *Spinning Out Life in the Ubaid Period at Kenan Tepe, Turkey*

Spinning and weaving are tasks well-attested in the archaeological record across the ancient region of Mesopotamia. Settlements along the Tigris and Euphrates Rivers were formed in landscapes rich with mud and pastoral animals, fertile places for people reliant on ceramics and textiles. By the fifth millennium BCE the community of Kenan Tepe, Turkey, had lived along the waters of the Tigris River for generations. The daily taskscapes of the people were wrought by the river, responsibilities to their animals and crops, and the raw materials sourced from them. For women of the hamlet many of their activities were woven around the collection and transformation of wool and other fibers into cordage and textiles. Through this research the authors explore the material evidence for spinning and weaving at Kenan Tepe, with the goal of putting these activities into the broader context of women's daily lived experiences. The sensescapes of spinning and weaving are explored through ethnographic and experimental archaeologies with special attention given to the activities entangled with the requirement of daylight, into the different realm of nocturnal pursuits illuminated by flickering firelight and the changing meaning of life after dark.

Hopwood, Marie [234] see Wall, Harper

Hora, Elizabeth, Alana Boscan, and Kira Curtis**[202]** *Classic Vernal Style Shield-Bearers in Uinta Fremont Iconography*

In recent decades, scholarship about precontact Plains and Pueblo shields have referenced a region in Utah's Uinta Basin that is seemingly a hot spot for shield iconography among the Fremont (AD 300–1300). The rock imagery classification of Classic Vernal Style makes room for shields and shield-bearers as possibly a variant located in the westernmost extent of the type's geographic range but has not addressed why this iconography would have such an intense and localized expression in the Uinta Basin. The Utah SHPO's Northern Uinta Rock Imagery Project has examined over hundreds of shields, shield bearers, and related "round things" to determine cultural and temporal affiliation using stylistic analysis and superposition of specific elements. Shield iconography is a relatively late addition to the Fremont stylistic lexicon, a finding that consistent with observations made over 100 miles south in the Four Corners region during the Pueblo III period.

Hora, Elizabeth [87] see Wismer, Meredith

Horn, Christina**[115]** *Origins of the First Japanese Kingdom (Fifth BCE to Mid-Second Century CE), Born from Outlanders and Indigenous Inhabitants*

From the late sixth century BCE to the second century CE, various interactions between the Mumun-era southern Korea and Jomon-era are evident. The sea was not a barrier, but a valuable tool in migration, and trade relations between the content and western regions of Japanese archipelago via Tsushima and Iki islands. Interaction routes are seen through the movement of various forms of material culture, prehistoric Jomon foragers integrated Korean technologies such as wet rice agriculture, metal wares, ritual practice, new forms of burial structures, and social hierarchical systems. From this cultural and societal transition, Mumun and indigenous Jomon hybridized into the Yayoi people, who eventually became the dominant population and culture in western Japan. Ultimately, these events ushered in the transition from complex hunter-gatherer societies to complex agriculture hierarchical status societies that brought forth the first kingdom of Japan.

Horn, Sherman (Goodwin & Associates), and Anabel Ford (MesoAmerican Research Center, UCSB)**[100]** *A Frozen Fortress: The Late Preclassic Citadel at Classic Period El Pilar*

Lidar survey of the 20 km² El Pilar archaeological reserve revealed an unexpected architectural complex less than 300 m east of city center. Imagery of this "Citadel" showed several buildings around two plazas atop a hill girded by two encircling walls, which were separated from the monumental epicenter by the steep ravine of a seasonal drainage. Ground survey confirmed the presence of the two roughly concentric parapets—both created by quarrying the hillside—and mapping revealed the monumental character of the summit structures. Architectural sequences exposed in looter trenches produced an additional surprise: major construction of the Citadel's buildings occurred entirely during Late Preclassic times (ca. 300 BCE–250 CE), though El Pilar reached its apogee centuries after in the Late Classic. This paper describes the construction of the Citadel and situates it within the development of El Pilar, a major Classic Maya city on modern border of Belize and Guatemala. We explore potential functions, from ritual through refuge to projection of power, that this complex may have served within the city, and we further discuss evidence that the Citadel's buildings were essentially curated after construction, creating a fortress frozen in time.

Horne, David [211] see Hunt, Abigail

Horowitz, Rachel (Washington State University)**[42]** *Evaluating the Impacts of Ethnographic Research among Mobile Populations on Studies of Lithics in Sedentary Societies*

Frameworks for the study of lithic technology mainly arose from studies of mobile hunter-gatherer tool use and discussions of the impact of mobility on tool production and use. Within sedentary societies, however, different constraints on tool form exist than within mobile groups. This presentation examines how ethnographic research on mobile societies, which resulted in technological organization approaches to lithics,

can be applied in sedentary societies, while accounting for the impacts of variation in mobility and sedentism. This presentation will utilize a case study of utilitarian bifaces from the lowland Maya region to evaluate similarities and differences in biface production and use in sedentary and mobile societies. I find that while technological organization is a useful framework in sedentary societies, there are important variations in tool use from the mobile societies on which such frameworks were based, and thus some modifications to such frameworks are needed.

Horowitz, Rachel [107] see Thompson, Jordan

Horowitz, Rachel [199] see Yaeger, Jason

Horton, Delaney

[63] *A Preliminary Analysis of Red-Slipped Ceramics from Clement (34MC8): A Multi-mound Site in Southeastern Oklahoma*

Red-slip/film is a stylistic technique which has been used on ceramics since the Woodland period across the southeastern United States. This technique has received little research compared to other ceramic decorative techniques. Within the Caddo area, this technique was first used after AD 1050 and continued for 500 years. In order to understand stylistic and technological choices made by Caddo ceramicists, collections from the 1941 and 2008 excavations at Clement (34MC8) will be analyzed. This poster displays the importance of red-slipping/filming throughout the site's 500-year occupation.

Horton, Mark (Royal Agricultural University)

[59] *Do Mosques Define Maritimity on the Swahili Coast?*

Mosques are the outward expression of Islam in Swahili coastal communities. They were often the first building constructed of stone, and in many towns the only stone-built architecture, representing permanence and identity. In trading communities, mosques also had a role as places of safety for fellow Muslim travelers, and where they could practice Salah (the daily ritual of prayer). This being the case, it might be expected that mosques were constructed close to the shore, where they would be clearly visible from the sea, providing assurance for monsoon-seafarers that they were arriving at a secure settlement. However, in Swahili town planning, the earliest mosques tend to be set back from the shoreline, often hidden by dunes. The paper will examine when mosques began to be constructed on the shore and visible from the sea. It will be argued that this shift represented a conscious shift toward maritimity, where the sea and its connections to the land became increasingly important in Swahili culture. This change in world view took place at different times along the coast, and I will present a conspectus from the northern Kenyan coast to the Comoros and Madagascar.

Horton, Mark [59] see Crowther, Alison

Horton, Mark [167] see Scaffidi, Beth

Hosek, Lauren (University of Colorado, Boulder)

[276] *"The Last Remains of Each Dear One": Osteobiographies of the Loretto Sisters*

In 2022, development in southwest Denver necessitated the relocation of the Loretto Heights Cemetery, a burial ground in use from 1896 to 1969 serving the Sisters of Loretto, a Catholic religious order. Throughout the nineteenth and twentieth centuries, the Sisters of Loretto opened numerous schools in frontier communities, including several in the Denver area. The excavation and relocation of the 62 women was undertaken in consultation with the Loretto Community, an organization of the Sisters of Loretto and Loretto lay co-members. Prior to reburial, the Loretto Community granted permission for bioarchaeological analysis of the skeletal remains of the Sisters. The Loretto Bioarchaeology Project examined the remains of 55 of the Sisters using bioarchaeological methods for evidence of health and disease, trauma, activity markers, diet, and dental care before they were reinterred. Osteobiographies have been developed for the Sisters by integrating this skeletal data with the archival records of these women's lives curated by Loretto Community members at the motherhouse in Nerinx, Kentucky. These narratives explore faith, duty, health challenges, and many forms of labor shaping the Sisters' lives as they supported growing communities along the Front Range. *****This presentation will include images of human remains with the permission of the Loretto Community.**

Hosek, Lauren [276] see Califano, Matthew

Hosek, Lauren [321] see Soukup, Ian

Hossan, Sakhawat [156] see Schwendler, Rebecca

Hough, Savannah (Kent State University)

[234] *Penetration Efficiency of Bone Projectile Points: Experimental Analysis Based on Late Pleistocene Artifacts from Sheriden Cave, Ohio*

This experimental study assesses the penetration efficiency of bone projectile points. Based on the well-preserved Late Pleistocene artifacts from Sheriden Cave, Ohio, it investigates how well this particular style of tool functions as a projectile tip. A total of 120 bone points were re-created from bovine femurs based on original casts of the artifacts. These points were tested under controlled conditions using a calibrated bow to fire at bone and simulated carcass materials. The study evaluates whether these projectiles are durable enough to penetrate large animal bones as was previously suggested for the faunal remains found at Sheriden Cave. The analysis includes measuring damage to the projectile point, the target bone, as well as the penetration depth. Effective penetration may suggest a hunting use, while insufficient penetration might indicate alternative uses. Although this experiment provides valuable insights, it does not definitively prove either scenario but serves as a theoretical tool for interpreting the archaeological record.

Houghten, Holly (Mescalero Apache Tribe)

[43] *Proactive Historic Preservation-Tribal Involvement and Input*

Since its inception the Mescalero Apache Tribal Historic Preservation Office has stressed that consultation involves more than just sending a completed archaeological survey report completed by archaeologists for review. Tribal involvement and input is necessary in order to complete an accurate cultural resources survey and to aid in the actions, methods, and plans of historic preservation. This discussion will touch on successful incorporation of Native peoples in Section 106 projects, cultural surveys, interpretation, mitigation, and management and how this involvement and input has positively affected historic preservation among agencies, industries, and Indigenous peoples.

Houghton, Briana (University of Wyoming), and Marcel Kornfeld (University of Wyoming)

[300] *Unveiling Ancient Structures: A Spatial Examination of Post Molds and Lithic Assemblages at Hell Gap*

In the early 1960s excavations commenced at multiple localities at Hell Gap (48GO305) north of Guernsey, Wyoming. Locality II yielded evidence of Agate Basin aged post molds alongside lithic materials and faunal remains. Archaeologically, evidence of structures this old are often difficult to identify due to the organic nature of construction materials. Because of this, analysis of potential structures is important to further our understanding of Paleoindian lifeways. In this poster, I present a spatial analysis of the Agate Basin component of Hell Gap Locality II. The goals of this analysis are (1) to determine if the post molds excavated in 1964 are in fact evidence of a structure or structures, (2) to identify the presence of specific activity areas inside and outside of the post molds, and (3) to discern what types of activities were performed in these activity areas based on lithic assemblages.

Houghton, Briana [300] see White, Clifford

Houk, Brett (Texas Tech University)

[109] *Fred Valdez and the Chan Chich Archaeological Project*

Since Fred Valdez Jr. and Richard E. W. Adams began the Programme for Belize Archaeological Project (PfbAP) in 1992, numerous MA and PhD students have passed through “Texas Camp” at Programme for Belize to collect their thesis or dissertation data. Some veterans of PfbAP have moved on to start new projects under their own research permits. The Chan Chich Archaeological Project (CCAP) was the first “spin-off” project of the PfbAP started by a former University of Texas graduate student, and Fred Valdez Jr. played an instrumental role in the project’s creation. Just an hour’s drive south of Texas Camp, Chan Chich is a major ceremonial center and home to Chan Chich Lodge. Over the course of four field seasons in the early 1990s, Fred Valdez befriended the lodge’s managers and laid the groundwork for Brett A. Houk to begin a

new project there. A few weeks after graduating with his PhD, Houk launched the CCAP in 1996, operating the first season under Valdez's PfbAP permit. In 2024, the CCAP completed its sixteenth season. This paper recounts the early days of the CCAP, Fred Valdez's role in its creation, and his continued contributions as the project's ceramicist.

Houk, Brett [107] see Ploetz, Chris

Houle, Jean-Luc (Western Kentucky University), Lee Broderick (www.zooarchaeology.co.uk), and Oula Seitsonen (University of Oulu)

[103] *Mapping Seasonal Sites: A High-Resolution Ethnoarchaeological Analysis of Material Culture and Faunal Remains in Mobile Pastoralist Campsites*

This ethnoarchaeological study employed a high-resolution mapping strategy to investigate the distribution of artifacts and faunal remains at mobile pastoralist campsites used repeatedly in winter and summer in Mongolia. Through detailed surface surveys, we explored how recurring seasonal use results in complex assemblages of material and faunal evidence. Despite these palimpsests, results indicate distinctive spatial patterns at winter and summer sites. When compared to the archaeological and geochemical record, these observations also suggest time-tested practices in the intra-site organization of pastoralist habitation.

Houston, Stephen [107] see Garrison, Thomas

Houston, Stephen [45] see Scherer, Andrew

Houston, Stephen [303] see Tamburro, Paul

Howard, Alex (Logan Simpson)

[245] *Examining the Commercial District of Aurora, Nevada*

The discovery of precious metals in the American West generated unparalleled interest in the extractive industry during the mid to late nineteenth century. The allure of possible riches, or at least a way to provide for oneself and family, brought diverse peoples to the mining towns of the West. Mining town populations predominantly were men of varied European backgrounds, but the appeal of a livelihood attracted people from many global regions. A multifaceted network of people and businesses was necessary for miners and mines to accomplish the complex mining process. This included not only businesses immediately associated with the extractive industry, but those ancillary businesses that supported the miners and families in non-mining activities. As one of the initial boomtowns in Nevada, Aurora had an impact on the capitalistic system of Nevada. Documentary archaeology provides a way to examine the businesses present within a downtown Aurora study area. Documents allow exploration and analysis of different business activities within Aurora, specifically what types of businesses were present, intended customers, and who was conducting business. But just as importantly, in a town with many marginalized populations, the documents expose who was not present within downtown.

Howe, Mark (International Boundary and Water Commission)

[369] *Geoarchaeology along the Rio Grande of New Mexico and Texas*

Geoarchaeological explorations along the Rio Grande over the last century, conducted by or for the International Boundary and Water Commission, United States Section (USIBWC) have shown that many archaeological sites are buried in the floodplain or above it. Burial of these archaeological sites by the Rio Grande were secondary in nature and cause; however, the many side arroyos temporarily damming the river with debris flows were the main culprits. This interim damming was brought on by heavy rainfall events away from the river resulting in heavy sediment transport toward the river in this desert environment. Large arroyo debris flows into the river formed short-term dams that backed up the river until the Rio Grande once again flowed through. This backup allowed suspended sediments to settle out forming a temporary lake that buried habitation locations that are now archaeological sites today. This paper will address buried sites located along the Rio Grande in southern New Mexico toward the Big Bend Region of Texas. Implications for further examination of an overlooked geological and geoarchaeological feature of debris flows are discussed. Importance in Southwest studies of a changing Rio Grande before it was dammed are examined and the consequences today.

Howell, Marly, Alison Carter (University of Oregon), and Carmen Sarjeant (Archaeological Investigations Northwest)

[61] *Understanding Decorated Earthenware Ceramics during the Pre-Angkor and Angkorian periods*

This study explores the variation of decorations on Khmer earthenware ceramics during the Pre-Angkor (sixth to eighth century CE) and Angkor (ninth to fifteenth century CE) periods from the Prasat Baset site in Battambang province, Cambodia. Whereas the stoneware decorations have undergone numerous studies, the low-fired earthenware (the majority of the ceramics assemblage) remains understudied. Across trenches decorated ceramics were found in vast amounts, perhaps indicating that painted and other decorations stemmed from this location. Across time periods there are patterns in decorations indicating traditions passed down over time; however, change in decorations over centuries may offer insight into changing politics, migration, and practices. Understanding decoration variation over time may help us understand culture during Pre-Angkor and Angkorian times. Sherds were sorted using a typology based on sand temper and surface treatment, then further categorized by surface treatment to consider decoration variation over time. Results indicate that painted ware decreases in prevalence during Angkorian times. They also indicate how Pre-Angkorian ceramics had greater decoration variation versus the more neutral decorations seen during the Angkorian period. Decorations appeared to correlate temper types which raise additional questions to the purpose of temper variation, design variation, and loss of certain decorations over time.

Howell, Marly [61] see Sarjeant, Carmen

Howey, Meghan (University of New Hampshire), and Melissa Clark (Nature Conservancy)

[305] *Seasons of Movement: Omnidirectional Connectivity Modeling of Indigenous Placemaking in the Great Bay Estuary (P8bagok)*

Movement has featured in archaeological GIS efforts to analyze social uses of landscape since the start. Important work has focused on least-cost paths. However, dividing landscapes into a binary of key sites to be connected and a matrix of land between does not always capture the scope of inter-relationships between people and land, particularly Indigenous placemaking practices across total landscapes. Archaeologists can, and should, capitalize on advances in omnidirectional connectivity modeling approaches which allow for the creation of broad-scale seamless cumulative current maps and offer computational efficiency for multiple scenarios/runs to better capture these relationships. Omnidirectional modeling's flexibility is critical for our case study where flow changes seasonally. The Great Bay Estuary (*P8bagok*) is a diverse ecosystem in the Northeast, its seasonal fluctuations and abundances stewarded by Pennacook/Abenaki peoples for millennia. Working with their knowledge keepers, we identified key variables for three seasonal scenarios—frozen season, shoulder season, and warm season—and engaged in an iterative process of refining inputs and model runs. By co-exploring resulting continuous surface connectivity maps, we assess if our approach captured seasonal flow patterns and, more generally, if this approach has value for archaeologists interested in advancing understandings of Indigenous placemaking.

Howey, Meghan [225] see Marhefka, Elaine

Howey, Meghan [107] see Palace, Michael

Howland, Matthew, and K. Michaela Jacobs (Wichita State University)

[364] *Multiscalar Modeling and Quantification of Erosion Risk to Archaeological Sites in Kansas with Satellite Remote Sensing and UAV Photogrammetry*

This paper describes a multiscalar approach toward risk assessment and precise quantification of fluvial and tillage erosion at Kansas archaeological sites. These erosion risk factors, exacerbated by anthropogenic landscape modification, pose a major threat to the integrity of archaeological sites. To quantify the scope of this hazard, we have developed a custom erosion risk assessment model based on analysis of recent and historic multispectral Landsat imagery. Use of multispectral band indices in Google Earth Engine facilitates estimation of tillage intensity and historic patterning of fluvial erosion at statewide scale, providing a basis for analysis of relative erosion risk across the state. By comparing results from this model to spatial data from the Kansas Historical Society, relative risk to each of the thousands of archaeological sites in Kansas can be assessed. These risk levels are ground truthed through time-series 3D recording of a subset of archaeological

sites calculated to be at high risk with UAV photogrammetry. With a DEM-of-Difference approach, the extent of erosion for each recorded site can be precisely calculated. This project provides a basis for communication with interested parties, descendant communities, and government decision-makers regarding the extent of risk posed by anthropogenic activity across Kansas.

Howland, Matthew [322] see Forker, Hannah

Howland, Matthew [64] see Jacobs, Kaitlyn

Hoyt, Colter [64] see Maughan, William

Hrnčír, Václav

[42] *Drinking and Clubbing: Insights from Comparative Ethnology on “Invisible” Technologies*

Human technologies have a long evolutionary history. However, most early technologies have perished over time, especially those made from organic materials. In the absence of archaeological evidence, comparative ethnology can provide valuable insights. This paper focuses on two “archaeologically invisible” technologies: wooden clubs and the production of fermented alcoholic beverages. A cross-cultural analysis of recent hunter-gatherers reveals the widespread use of wooden clubs for both violence (86%) and hunting (74%). Together with evidence from primatology, these data suggest that early human groups used clubs as a common weapon. Furthermore, the variation in design and purpose of ethnographically documented clubs suggests that they are not standardized weapons and that similar variability likely existed in the past. In contrast, the production of fermented beverages is less common among modern foragers, observed in less than 20% of studied cases. However, their presence on several continents and the variability of raw materials (ranging from honey and fruits to tree sap and flower nectar) suggest that fermented beverages were discovered independently by various hunter-gatherer societies several times in history. Using these two technologies as examples, the paper emphasizes the importance of comparative analysis of ethnographic data for understanding our past.

Hruby, Zachary (Northern Kentucky University)

[100] *Offense or Defense? Technology and Use of Obsidian Projectile Points at Plan de las Mesas, Honduras*

Hundreds of projectile points and point fragments have been recovered over the decades of work at the Classic site of Plan de Las Mesas in the Copan Valley of Western Honduras. Given the ubiquity of these points, which for the most part can be described as atlatl dart components, they may provide important information about the function of the settlement. Metric and technological analyses were carried out to determine the state of Plan de Las Mesas projectiles, including how they were made, where the raw materials came from, and in some cases why they might have been discarded. Of particular interest is the extent to which they were repaired, resharpened, reused, and broken, either through impact or use. While these data cannot confirm whether Las Mesas was primarily a place being attacked (i.e., frequently defending itself) or tooling up for combat (e.g., readying for invasion), the ratio of points “retired” after heavy reuse and resharpening vs. those broken on impact and left unmodified may shed light on whether Las Mesas was forced to defend itself in the past.

Hsu, Teresa [376] see Sugiyama, Nawa

Huang, Xinyi (Shandong University), Yanchang Liu (Shandong Museum, Jinan, China), Anne Underhill (Yale University), and Yu Dong (Shandong University)

[320] *Population Movement and Inter-marriage during the Eastern Zhou Dynasty, Bronze Age China: A Case Study of Dahan Cemetery*

The Eastern Zhou Dynasty was a transformative period in Chinese history, marked by frequent warfare, cultural exchange, and population movements, with intensified interactions between states. The Dahan cemetery in southern Shandong Province, located at the intersection of several states, serves as a vital site for studying the era’s social and cultural dynamics. Bronze vessel inscriptions indicate it may have been the cemetery of a noble family from the Ni State, while the presence of foreign cultural artifacts suggests significant external influence. The current study employs strontium isotope analysis on 69 samples, including

humans and animals, to distinguish locals vs. nonlocal individuals. The analysis identified 14 nonlocal individuals, most of whom were sacrificial victims. Notably, the supposed tombs of the king and his consort also belong to nonlocal individuals, potentially indicating intermarriage between local and foreign elites. The findings suggest complex sociopolitical dynamics, providing critical evidence for understanding the political and cultural shifts of the Eastern Zhou.

Huang, Zexian

[338] *Early Evidence of Postmortem Fetal Extrusion in Equids: A Case from the Western Zhou Period Site of Yaoheyuan in Northwestern China*

We analyzed horse remains from a chariot-horse pit (CMK2) associated with elite burials at the Bronze Age site of Yaoheyuan in northwestern China. Among the horses interred in this specific pit, one adult female and one infant show evidence of postmortem fetal extrusion. This conclusion is based on an examination of their age at death, sex, head orientation, and spatial relationships. The parturition stage of the foal suggests that the interment of the female horse likely occurred in late spring or early summer. The relatively high temperature may have generated gas in the body of the pregnant mare, eventually leading to the extrusion of the fetus. This represents the first reported case of postmortem fetal extrusion in equids from archaeological contexts.

Hubbe, Mark [186] see Musch, Abigail

Hubbe, Mark [117] see Torres, Christina

Huckell, Bruce [98] see Smallwood, Ashley

Huckell, Lisa

[57] *A Life on the Rocks: An Archaeologist's Journey*

This paper provides a brief retrospective of Bruce B. Huckell's life and career as told by Lisa W. Huckell, the person who knew him best.

Huckell, Lisa [98] see Smallwood, Ashley

Huffer, Damien [237] see Halling, Christine

Hughes, Katherine (Crow Canyon Archaeological Center), Tyson Hughes (Crow Canyon Archaeological Center), and Steve Copeland (Crow Canyon Archaeological Center)

[191] *Beyond the West Wall*

It has been noted that the western exteriors of Chaco Great Houses in the Northern San Juan Region exhibit evidence of substantial prehistoric activities. Recent excavations at the West Great House at 5MT1905 indicate complex stratigraphic deposition at the exterior of the westernmost extent of the structure. Initial findings indicate that the location was used intensively for lithic reduction. We attempt to better understand these activities by closely evaluating the material culture and context. Additionally, the stratigraphy represents intact deposits from before, during and after the completion of the West Great House. We also attempt to better understand changes and/or continuity in practices at the site over time.

Hughes, Tyson [191] see Hughes, Katherine

Hugues, Sam [317] see Jerrems, William

Huidobro, Consuelo [191] see Morello Repetto, Flavia

Huiras, Alexandra

[86] *Cooking according to Class: Using Faunal Remains to Investigate Social Organization in Cajamarca, Peru*

People are what they eat, and in more ways than one. What someone eats can be an indicator of their identity, class, and social status. This cultural aspect to food means that archaeologists can use food remains to better understand the social organization of past societies. Here I consider faunal remains to investigate the possibility

of social inequality among households at the prehistoric site of Callacpuma. Located in the Cajamarca Valley of northern Peru, Callacpuma's Platform 2 is a domestic terrace dating to the Initial Cajamarca period (100 BCE–200 CE). In this research, faunal data is used to look for differences in quality, quantity, species, and processing practices among households. While faunal remains from Platform 2 are the primary focus of the study, domestic architecture and ceramic assemblages are also used to investigate social organization at the site. The differences in food quality and quantity across the neighborhood-like terrace will provide insight into social inequality at Callacpuma, as well as highlight general trends in human social organization.

Hull, Bryna (University of California, Davis), and Reba Fuller (Tuolumne Me-Wuk)

[193] *Dietary Trends through Time at the Phoenix Powerhouse Site: A Stable Isotope Perspective*

The Phoenix Powerhouse site has a 4,700-year history of use by Native peoples inhabiting the western slope of the central Sierra Nevada mountains in California. The site, currently managed by PG&E, has yielded human, faunal, and charred plant macrofossil remains during archaeological mitigation and investigation. At the request of the Tuolumne Me-Wuk and working in conjunction with PG&E, we use stable isotope analysis of these remains to understand dietary trends through time at the site and examine how this relates to the broader picture of diet throughout this portion of the region during the late Holocene.

Hulot, Olivia [345] see Naudinot, Nicolas

Hummel, Taylor, BrieAnna Langlie (Binghamton University), Barrett Brenton (Binghamton University Center for Civic Engagement), Ethan Tyo (Binghamton University Multicultural Resource Center), and Angela Ferguson (Onondaga Nation Farm)

[225] *Our Sustainers: Haudenosaunee Three Sisters Garden as a Pedagogical Device in New York State*

Haudenosaunee Three Sisters agriculture involves the intercropping of corn, beans, and squash. In this system, each crop supports and reinforces the other. This poster demonstrates how Three Sisters gardens on university campuses across New York state serve as a pedagogical tool, fostering a more inclusive and holistic perspective on past and present Haudenosaunee lifeways. These gardens also signify a true land acknowledgment and serve as a way to build connections and facilitate dialogue between universities and Indigenous communities. By engaging with traditional agricultural methods, students, staff, faculty, and the public can learn about current Haudenosaunee worldviews. This approach provides an experiential learning platform to build meaningful, reciprocal relationships with Indigenous communities and can inspire students to conduct impactful work within these communities.

Humphreys, Stephen (Operation Nightingale USA)

[232] *Military Veterans, Archaeology, and Mental Health: Fact and Fiction*

An increasing body of literature, including peer-reviewed research, suggests that participation in archaeological fieldwork, lab work, and conservation benefits military veterans. Data now demonstrates conclusively that most military veterans will receive at least short-term mental health benefits from participation in tailored archaeological fieldwork. These benefits are becoming more widely acknowledged in the archaeological community due in part to their popular appeal and social impact. As a result, the number of programs advertising archaeology's benefits for veterans has increased in the United States and beyond. At this stage in the development of what is essentially a new area of practice there is an immediate need to establish standards and codify methods aimed at benefiting the veterans themselves. These standards must recognize the realities of working with veterans in this context and acknowledge the limitations, as well as the potential, of how archaeology may impact mental health. This presentation will incorporate lessons American Veterans Archaeological Recovery has learned on some 30 fieldwork projects carried out with veterans since 2016.

Hunt, Abigail (Bournemouth University), Alison Smith (Kent State University), David Horne (Queen Mary University London), and Jonathan Holmes (University College London)

[211] *Exploration of White Sands' Human Trackways Using Paleoenvironmental Reconstruction*

The dating of fossil human footprints at White Sands in New Mexico to the Last Glacial Maximum brings into focus the nature of the environment at this time, and the potential resource attractors. There is already a

rich body of research into the paleoenvironments which explores this climate period. In this paper, we will review this work by producing a new synthesis of results to contextualize the fossil tracks at White Sands. In addition, we will add new data in the form of ostracod analysis with the specific application of Mutual Ostracod Temperature Range (MOTR). Therefore, there remains a need in exploring the environments surrounding human trackways, putting into perspective the climatic conditions of human behaviors.

Huo, Yuankai [189] see Zimmer-Dauphinee, James

Hurst, Stance (Museum of Texas Tech University), Eileen Johnson (Museum of Texas Tech University), and Douglas Cunningham (Lubbock Lake Landmark)

[284] *Rough and Tumbled: The Prehistoric Geoheritage Significance of Ogallala Formation Quartzarenite Clasts in Northwestern Texas*

Geoheritage is an emerging field that examines geodiversity's scientific, cultural, and educational values. Ogallala Formation quartzarenite clasts, known as Potter member quartzite in archaeological literature, are well-indurated quartzose sandstones found abundantly in the basal gravels of the Ogallala Formation, with gravel outcrops across the North American Great Plains. Although currently lacking recognized economic or heritage value, these cobbles have gained historical significance through ongoing research. Prehistoric peoples utilize these quartzarenite clasts extensively for crafting stone tools and as hearthstones in thermal features, demonstrating their importance in ancient lifeways. These clasts exemplify geodiversity, the natural range of geological materials, features, and processes. Fieldwork along the eastern escarpment of the Southern High Plains near Post, Texas, has identified numerous outcrops of Potter member quartzite, associated prehistoric workshops, and campsite localities. Results of this work reveal the geoheritage significance of Potter member quartzite nodules. These findings highlight the importance of research to identify geoheritage from the past.

Hurst, Stance [227] see Franklin, Lauren

Hurst, Winston, and Catherine Cameron

[55] *The Comb Wash Great House Community in Regional Context: New Insights from Federal 1 m Lidar Data*

The Comb Wash Great House was the first ancient Puebloan community center in Utah west of Comb Ridge to be formally recognized and described in the archaeological literature (W. H. Jackson 1875). It was ignored for more than a century before Owen Severance recognized and documented several Puebloan road swales there in the late 1980s. Subsequent investigations by BLM and University of Colorado crews sketched out the basic history and structure of the community landscape including a temporal relationship between the post-Chacoan Comb Wash Great House and its nearby predecessor the Chaco-era Arch Canyon Great House. Wider regional connections were less clear but associated roads pointed toward other great house communities to the north, northeast, southeast, and west. Newly available federal lidar data have enabled 1 m resolution, bare-earth lidar imagery that fully confirms all of Severance's road identifications and reveals a number of new regional road and upland farmscape features that help clarify the Comb Ridge community's place in a wider regional landscape and relationship to other regional communities. The result is a growing appreciation of interaction between ancient Puebloan communities across the northwestern San Juan region and their shared commitment to ritual activity involving constructed road circuits.

Hurst, Winston [55] see Nials, Fred

Hurst, Winston [55] see Simon, Katie

Hushour, Jennifer [183] see Buvit, Ian

Husslein, Sophie

[68] *Comparative Analysis of Historic Native American Gathering Camps in Kaibab National Forest*

This poster summarizes the results of Chronicle Heritage's recently completed South Kaibab Fuels Reduction Class III Project, conducted on behalf of the Kaibab National Forest (KNF) in advance of fire-reduction treatment. The survey covered 12,724 acres of KNF land within the Tusayan Ranger District. As a result of this survey, Chronicle Heritage identified and fully documented eight previously recorded and 63 newly recorded

historic Native American gathering camps, each composed of temporary wooden structures. These sites offer a distinctive picture of Native American land use in the twentieth century. The novel data from these sites demonstrate that they deserve further study and protection. This poster presents a background of these historic structures and their role in resource collecting, such as pinyon and fuelwood gathering, along the South Rim during the historic period and offers a comparative analysis of the sites identified within the survey area.

Huster, Angela (Chronicle Heritage)

[346] *Archaeological Mentorship beyond the University*

Opportunities for mentorship extend beyond academia to the public and private sectors. Most entry-level positions in US archaeology are in CRM, but academic faculty often lack the familiarity with CRM archaeology needed to mentor students interested in this career direction. Chronicle Heritage's (a CRM company) education outreach program seeks to bridge this gap by conducting informational sessions on CRM and by running an internship program. Hands-on experience is a key factor in being hired for a CRM job, but academic field schools may be prohibitively expensive, or logistically difficult for many students. Over the past three years, Chronicle's Arizona office has run an internship program, providing a paid introduction to how the CRM industry works and training in the job skills needed for an entry level position in the field. This paper presents an overview of the program, lessons learned, and possibilities for expanding the model.

Huster, Angela [289] see Smith, Michael E.

Huster, Angela [68] see Steber, Matthew

Hutson, Jarod [373] see Pobiner, Briana

Hwajung, Kim

[350] *Contradictory Meanings Intertwined with Cold War Heritage in Korea*

Over the last few decades in the Demilitarized Zone (DMZ) on the Korean peninsula, there has been a gradual transformation of associated meanings and memories from conflict and trauma to peace and reconciliation. Amid the ongoing conflict and tension between the two Koreas, this change is actively promoted by tours that visit destroyed buildings and war infrastructures remaining in the border area to the south. Over the past 20 years, material remains from the Cold War era began to be explored by archaeologists as evidence of the historic era and an anchor to reflect on the past and move forward. In this paper, I discuss how two types of material remains associated with the Korean War (1950–1953)—barbed wire fences and observatories—have been transformed from military infrastructures representative of conflict to the sites where peace and reconciliation are now promoted. This material record of the Korean War is intertwined with contradictory meanings by sending hopeful messages to the public while maintaining the presence of military infrastructures. This paper demonstrates the limitations of promoting peace within the ongoing conflict by widening the understanding of Cold War heritage in the Asian context.

Hyde, David (Western Colorado University)

[109] *A Katun at The Medicinal Trail Community: 20 Years of Research at a Hinterland Maya Village*

The 2024 field season marks the end of a 20-year research program at the ancient Maya hinterland farming village of the Medicinal Trail Community. Located the northwestern Belize, the earliest evidence of occupation occurred in the late Middle Preclassic, and continued until the end of the Classic period, with some Postclassic visitation. The village consists of at least 13 architectural groups, of which 11 have been excavated. Additionally, numerous agricultural and irrigation features have been mapped and investigated. Over the course of a 20-year period, I was Fred's field director for the UT field school, overseeing the training of scores of students. I have run 12 field schools, first with the University of Texas at San Antonio and later with Western Colorado University, totaling well over 100 participants, many returning for multiple seasons. Nine peer reviewed journal articles, one book chapter, dozens of interim reports, including two stand-alone volumes, and dozens of conference papers and posters have been presented, many with student coauthors, have been produced from this research. This paper presents an overview of the project's history and details some of the research produced by the Medicinal Trail Hinterland Communities Archaeological Project. ***This presentation will include images of human remains.

Hyde, David [65] see Godhardt, Ava
 Hyde, David [65] see Stauffer, Kaeleen

Iannone, Gyles (Trent University), Scott Macrae (University of Central Florida), Hao Nguyen Thi (Institute of Archaeology Vietnam Academy of Social Sciences), Lê Ngọc Hân (Institute of Archaeology Vietnam Academy of Social Sciences), and Thuy Vo (Institute of History, Vietnam Academy of Social Sciences)

[61] *Settlement Archaeology at the Tenth-Century CE Imperial Capital of Hoa Lu, Northern Vietnam*

This presentation outlines the initial results of a program of settlement archaeology that has recently been initiated at the tenth-century Dai Co Viet capital of Hoa Lu, located in northern Vietnam. The focus of the research is the suburban zone that would have surrounded the walled inner-city enclosures, colloquially referred to as the imperial “citadels.” Given its rugged karst topography and low-lying, often inundated landscape, Hoa Lu is a challenging place to carry out a settlement study. Be that as it may, a potentially significant suburban neighborhood has been discovered adjacent to the Ba Ngo shrine, a known tenth-century religious locale. The character and archaeological potential of this location will be discussed.

Iannone, Gyles [61] see Barry, Jack
 Iannone, Gyles [61] see Macrae, Scott

Ichikawa, Akira, and Arthur Joyce (University of Colorado, Boulder)

[290] *Late Classic and Early Postclassic Residential Excavations at Rio Viejo, Coast of Oaxaca*

The collapse of ruling institutions at the end of the Classic period around 800 CE is widely regarded as one of the most complex topics within Mesoamerican archaeology. The Proyecto Rio Verde (PRV) is investigating the role of climate change and human impact on the environment in the collapse of the Rio Viejo polity in the lower Rio Verde region on the Pacific coast of Oaxaca, particularly through the excavation of the residential spaces of commoners. This study provides a comprehensive overview of the excavation data from four residential areas in Rio Viejo that were examined during field seasons in 2022 and 2024. The excavations recovered a wealth of evidence related to daily life at Rio Viejo, including residential platforms, burials, middens, earth ovens, termination deposits, and various artifacts. The data demonstrates both continuities and changes in daily practices during the Late Classic to Early Postclassic transition as well as potential variation among residential areas in responses to environmental change.

Ichikawa, Akira [290] see Aguayo Ortiz, Elaine
 Ichikawa, Akira [290] see Ayala, Abilene
 Ichikawa, Akira [290] see Clow, Zachery
 Ichikawa, Akira [290] see Cruz Sosa, Ivonne
 Ichikawa, Akira [290] see Mayes, Arion

Idrizi, Olta [160] see Riebe, Danielle

Iglesias, Christina (California State University, Los Angeles)

[381] *The Future of Mesoamerican Cave Archaeology: What Are We Doing Now? Where Are We Going?*

All of the subterranean archaeologists currently active in the field, 10 received their doctorates between 2001 and 2015 during what I have labeled as the Period of Regional Cave Surveys in which cave surveys were conducted in conjunction with large surface projects. By and large those projects ended about 10 years ago, raising the questions: What are we doing now? Where are we going? To answer these questions, I have conducted in-depth interviews with most of the active professionals in the field. In general, there is a conviction that the subterranean must be studied as a unit within a larger social and political entity and that sacred landscape is still the best theoretical approach for doing this. Beyond these general agreements, opinions vary wildly.

lizuka, Fumie (University of Wisconsin, Madison), Daigo Natsuki (University of Tokyo), Masami Izuho (Tokyo Metropolitan University), and Loren Davis (Oregon State University)

[292] *Paleoenvironments, First Pottery, and the Late Upper Paleolithic from Hokkaido Island, Japan*

While Late Pleistocene lithic technology patterns around ~16,000 cal BP show similarities between Northeast Asia and North America, early regional ceramic technology does not appear as early in North America. To reconstruct the technology and investigate the discrepancy in the timing of appearance, we examined pottery from the Tachikarushunai M-I site in Hokkaido of northern Japan, using visual and petrographic methods, along with geochronological, paleoenvironmental, and archaeological data. The results suggest that pottery from the site is severely weathered, and appeared after ~16,000 cal BP. Local raw materials were used for production. Pottery has decorations characteristic of Hokkaido. No bifacial stemmed points are found with pottery. Combining with contexts from another pottery-bearing site from Hokkaido, the first pottery in Hokkaido was made locally and had distinct symbolic expressions from those in Honshu. We suggest that since lithics do not have clear-cut distinctions from other Pleistocene sites in Hokkaido, more fine-tuned study, such as morphometric comparisons, is needed to understand relations of these late Pleistocene assemblages. Pottery appeared later in Hokkaido than the human arrival in the Americas, raising questions about the spread of technology during this period. However, because pottery undergone freeze-thaw process, the interpretation requires caution.

lizuka, Fumie [292] see Davis, Loren

lizuka, Yoshiyuki [284] see Sakaguchi, Takashi

Ikehara Tsukayama, Hugo [273] see Koons, Michele

Immich, Jennifer [107] see McAlister, Victoria

Incio-del-Río, Cristina (Incipit-CSIC)

[168] *Things of Modernity: Changes and Continuities in Terra de Montes (NW Spain) through Rural Domestic Materiality*

Although peasant communities seem to have changed little from the Middle Ages to the twentieth century according to the prevailing historical narratives, the analysis of their materiality indicates the opposite. Thus, this presentation brings the case of Terra de Montes, a region in the interior of Galicia (NW Spain), whose history has been marked by a subsistence economy, which has generated an idea of isolation. However, the communities of Terra de Montes have experienced changes (gradual in some cases and sudden in others) that have to do with global processes. Thus, in this presentation we will analyze the architectures and materialities of three villages in Terra de Montes where we have carried out archaeological work, in order to, through their things and their houses, understand how the peasant communities that inhabited these spaces between the sixteenth and twentieth centuries experienced profound changes that have to do with global dynamics; as well as they remained unchanged in some aspects. Thus, through objects such as iron cauldrons, ceramic bowls, a broken watch, or medicine blister packs, we will propose a dense historical narrative that challenges the idea of immobility of these communities.

Ingalls, Victoria, James Karbula (Acacia Heritage Consulting), and Rachel Feit (Acacia Heritage Consulting)

[232] *The Shell (Tool) Game: Late Prehistoric Cultural Adaptations at the Margins of Settlement in Texas*

The use of marine shell tools and ornaments among Native North American peoples is well documented in coastal regions and along the Mississippi River Valley. However, rarely do we see archaeological evidence of comparable tool manufacture from freshwater mussel shell at inland sites away from these major marine areas. This talk discusses a rare collection of modified freshwater mussel shells from the Late Prehistoric component of Site 41DN580 in Denton County, Texas. Analysis of modified shells has identified polishing, cut edges, battering, notching, and scraping on at least 29 specimens that can be grouped into three distinct types of use: as pendant or adornment blanks, as expedient digging tools or hoes, and for scraping or smoothing (hides, pottery, arrow shafts, etc.). These modified freshwater shell artifacts have few comparisons

from inland Texas or elsewhere in the United States. This talk puts shell modification and tool use into context to elucidate Native American connections and adaptations during a period of cultural transition spanning roughly AD 1000–1200.

Ingram, Scott (Colorado College)

[385] *Social and Environmental Conditions Affecting Long-Term Human Vulnerability and Resilience to Drought*
Vulnerability assessments investigate the social, environmental, and economic characteristics of people and places to identify where people are expected to be the most vulnerable to a warming climate and its consequences. Identifying the sources of vulnerability to drought is an essential component of Intergovernmental Panel on Climate Change policies to aid adaptation and mitigation of climate change challenges, especially among smallholder farmers globally in arid to semiarid climates. The long-term demographic and paleoclimatic record of the North American Southwest can provide information on the characteristics that influenced both vulnerability and resilience to drought in the past. Specifically, who and where were people the most vulnerable and resilient to drought during the 1200–1450 CE period? The research presented will provide some answers to this question informed by a regional-scale, systematic, comparative correlation analysis of settlement locations, demographic characteristics, and environmental conditions, enabled by the cyberSW and SKOPE databases.

Inman, Cal [111] see Gillreath-Brown, Andrew

Inokuchi, Kinya (Saitama University)

[282] *Procesos sociales durante el Período Formativo a partir de las evidencias del sitio arqueológico de Kuntur Wasi del Perú*

El sitio Kuntur Wasi es un centro ceremonial que funcionó durante el Período Formativo Medio y Tardío de la sierra norte del Perú. Si bien Kuntur Wasi comparte similitudes y fenómenos paralelos con el sitio Pacopampa en términos de arquitectura, cerámica, tumbas especiales, cambios en los medios de subsistencia y los procesos sociales que representan, también existen diferencias notables. En el caso de Kuntur Wasi, es particularmente notable que se construyó un templo completamente nuevo tapando pasadas arquitectura anterior en el inicio de la fase Kuntur Wasi, del Período Formativo Tardío. Esta innovación de templo se logró con procesos rituales, como el enterramiento de personas especiales. Al mismo tiempo, las innovaciones del templo de Kuntur Wasi tenían una red amplia en su base, incluyendo la interacción con la costa norte de Perú. Además, puede decirse que la innovación del templo condujo al desarrollo de diversas actividades de la fase posterior, fase Copa, en el templo de Kuntur Wasi. Esta presentación se mostrará las implicaciones de Kuntur Wasi en el Período Formativo, haciendo referencia a datos detallados y estableciendo comparaciones con el sitio arqueológico de Pacopampa.

Inokuchi, Kinya [282] see Takigami, Mai

Inomata, Takeshi (University of Arizona)

[378] *Early Greenstone Objects from Aguada Fénix, Tabasco, Mexico*

Greenstone axes and ornaments were important objects deposited in caches at various Early and Middle Preclassic centers in southeastern Mesoamerica. Early examples come from the sites of El Manatí in the Gulf Olmec region and Cantón Corralito on the Chiapas Pacific coast dating to 1400–1000 BC. At Ceibal in the Maya lowlands, a series of caches containing greenstone objects were placed between 1000 and 700 BC. Recent investigations at Aguada Fénix add new data to this issue. Aguada Fénix is known for early monumental constructions dating to 1050–700 BC. Five caches containing greenstone objects were placed along the east-west axis of its E-Group plaza around 850–800 BC. An earlier deposit of Cache 10-11 dating to 900–850 BC, however, contained pseudo-axes made of clay and no greenstone objects. These findings provide significant insights into early greenstone exchange systems and the spread of lapidary techniques.

Iorga, Anastasia [86] see Drees, Svenya

Iovita, Radu (New York University), Carlos Cordova, Miriam Belmaker (University of Tulsa), Tobias Sprafke (University of Bern), and Zhaken Taimagambetov (National Museum of Kazakhstan)

[332] *A Preliminary Climate-Settlement Framework for the Last Glacial Cycle in Central Asia Based on Data from Kazakhstan*

Central Asia has emerged as a crucial locus for understanding recent human evolution in Eurasia. It is particularly important for understanding adaptation during dispersal, as it is both the locus of interaction among several archaic and modern human populations and, at the same time, a region that lies on the threshold of aridity. At times, it may have been a cold desert and could have presented a significant barrier to movement. In this paper, we summarize current possible correlations between settlement and climate in this region, based on sedimentological, vegetation, and faunal data, as well as the chronology of archaeological sites recently investigated during the PALAEOSILKROAD project. Contrary to expectations, it appears that modern humans, at least, were present in here even during relatively colder periods characterized by high wind intensity and low precipitation. Current data point to a relatively sparse human signal, however, which remains to be explained. In this context, we also discuss biases and gaps in the archaeological record and compare them with the record of neighboring countries, such as Kyrgyzstan and Uzbekistan. We conclude by outlining the necessary steps to a better understanding of the human-environmental framework of the Last Glacial cycle in Central Asia.

Iovita, Radu [332] see Borsodi, Sara

Iovita, Radu [332] see Coco, Emily

Iovita, Radu [332] see Namen, Abay

Iracondo, Emma [227] see Demyan, Marcela

Irmis, Randall [196] see Dunn, Auriana

Isakson, Natalia

[202] *Rain-Beings and Rock Art: An Analysis of Cultural Syncretism in the Uinta Basin*

Recent literature surrounding the Fremont of the Uinta Basin has focused heavily on the cultural connections formed in the region, including the impacts of the introduction of maize agriculture on the existing forager population. This confluence of peoples is reflected in the rock imagery present throughout the basin, which exhibits traits characteristic of both ancestral and descendant cultures. Among these are connections to Mesoamerican beliefs and mythology, as well as possible ties to later Hopi rain-making traditions. Aspects of the Classic Vernal style feature symbols linked to rain and agriculture at a time when the Fremont were changing their primary subsistence strategy. Referencing a database of over 450 drawn animorphs in the Uinta Basin, Utah SHPO's Northern Uinta Rock Imagery Project has set out to explore the influence of these different cultures in the rock imagery record.

Isaza, Ilean [56] see Carvajal Contreras, Diana

Ivan Daza Riquelme, Richard [199] see Sabo, Allison

Ives, John (University of Alberta)

[179] *Dene Ties across the Southern Rockies*

Divergence of the Pacific coast Dene languages from other Dene languages required both significant time and distance to intervene. Yet, there are several indications that there was some degree of contact between Dene speech communities across the Rockies—especially the oral traditions surrounding Changing Woman. She ultimately departed Dinétah for the Pacific coast, eventually sending Dene ancestors back in the Gathering of the Clans. Changing Woman was the subject of the first *Kinaaldá*, the vitally important female puberty ceremony. Dene populations more generally have a number of beliefs concerning female puberty, but ceremonies in the Southwest and Pacific regions are more elaborate than in the northern Dene homeland. Southwestern and Pacific coast Dene ceremonies became elaborate, Victor Golla suggested, as Navajo and

Apache ancestors encountered ancient southern beliefs involving female puberty ceremonies. Subarctic moccasin forms (and other artifacts) in the Promontory and Franktown Caves, Wyoming, sites, and Southwest sites likely track the presence of proto-Apachean groups reflected in Promontory phase and Dismal River assemblages, as Apachean ancestors infiltrated Plains margin and intermontane settings. These records provide additional artifactual evidence (e.g., deer hoof rattles, coastal shell) for Golla's hypothesis, and for contact between Apachean and Pacific coast Dene ancestors.

Iwanicki, Josef, and LouAnn Wurst (Michigan Technological University)

[70] *Labor, Capitalism, and the State at Camp Au Train*

Camp Au Train, located in Michigan's Hiawatha National Forest, was a Civilian Conservation Corp camp that was later reused to house German prisoners during World War II. Historians and archaeologists have produced an extensive literature on CCC and POW camps, but they are typically discussed in isolation and separated from larger capitalist economic structures. This stems from two problems: first, the Great Depression and World War II are perceived as exceptional moments in US history; and second, both the New Deal and World War II are understood as actions of the US government. Since the government is part of the political system, capitalism, as part of the economic system, is perceived as irrelevant to these types of sites. Our goal is to shift the vantage point, to see this camp as part of the larger capitalist system. Since these camps were, after all, primarily work camps, we think it is important to ask questions about the role of labor, capitalism, and the state. Rich material assemblages excavated from seven trash pits provides the evidence to interrogate how these men's everyday lives and material culture fit within larger capitalist productive relations.

Iwase, Akira [292] see Morisaki, Kazuki

Iwase, Akira [292] see Nakazawa, Yuichi

Izeta, Andres, and Roxana Cattaneo (IDACOR CONICET UNC)

[370] *The Revista del Museo de Antropología, from Local to Global: Fostering Open Science through Regional Diamond Open Access Journals*

Open science seeks to create a more transparent, accessible, and collaborative research environment. The *Revista del Museo de Antropología* contributes to this effort by offering a regional platform that moves from local relevance to broader recognition. Through its diamond open access model, the journal provides a space free for both authors and readers, promoting inclusivity and wider access to academic knowledge. This model supports a fair, open access ecosystem, allowing researchers from diverse backgrounds to share their work without financial barriers. All submissions undergo rigorous peer review by external experts, ensuring the quality and reliability of published research. The journal is indexed in databases and directories such as the Anthropological Index Online, ERIHPLUS, MIAR, ROAD, BECyT, CIRC, LatinREV, Malena, and REDIB. It is also part of evaluation systems like Scopus, DOAJ, LATINDEX, Núcleo Básico de Revistas Científicas Argentinas, and SciELO. The journal also addresses challenges like promoting multilingualism, aiming to make research accessible across languages to expand its reach. It engages in discussions on research assessment, advocating for the recognition of non-commercial open access publications. Through international indexing efforts, the *Revista del Museo de Antropología* seeks to enhance the visibility and credibility of regional research on a broader stage.

Izeta, Andres [66] see Cattaneo, Roxana

Izquierdo, Ana Luisa (Centro De Estudios Mayas, IIFL, UNAM), and Pablo Mumary Farto (Centro de Estudios Mayas, Instituto de Investigaciones Filológicas, UNAM)

[303] *La publicación del poder femenino entre los mayas: El caso de Calakmul*

En la cosmovisión maya y en general en el pensamiento mesoamericano las mujeres eran parte de un todo, como se observaba en la naturaleza. De ahí que las mujeres llegaran a ser supremas gobernantes K'uhul Ajaw, pero hay varias pruebas de que no solo se daba este hecho en ausencia de un sucesor masculino de linaje divino, pero también había mujeres favorecidas por la realeza para elevarse a la máxima magistratura, hecho probado en el caso de Calakmul. Argumentaremos esta idea con el estudio de la iconografía pública de

las cuatro estelas llamadas “pareadas”: Estelas 28 y 29 (S. VII), in situ; Estelas 23 y 24 (S. VIII), in situ; Estelas 52 y 54 (S.VIII), (se resguardan en CDMX y Campeche, respectivamente); y La E.62 (que se encuentra en el MNA en CDMX) posiblemente fuese pareada. Explicaremos su ubicación, desarrollo formal, capacidad de comunicación social, fechamientos y las lecturas posibles de sus erosionadas inscripciones. Con base en estas pruebas terminaremos postulando la hipótesis de que hubo una forma de cogobierno maya hombre-mujer, interpretación que abona a la concepción, de la variedad de regímenes políticos existentes entre los mayas.

Izraelvitz, Joseph [321] see Soukup, Ian

Izuho, Masami (Tokyo Metropolitan University)

[292] *Appearance of the Bifacial Stemmed Points in Paleo-Sakhalin Hokkaido Kurile Peninsula (PSHK)*

The precise locations and mechanisms of the emergence of ancient North American populations, which developed from a mix of East Eurasian and Ancient North Eurasian groups around 25,000 years ago, followed by a period of isolation and subsequent migration to the Americas after approximately 21,000 years ago, remain unclear. Recent archaeological studies have highlighted the Paleo-Sakhalin-Hokkaido-Kurile Peninsula (PSHK), situated in the mid-latitudes of the western Pacific Rim, as a potential area where this population may have emerged. This hypothesis is supported by similarities in cultural patterns, particularly the morphology of bifacial stemmed points found in both Asia and North America. Although the occupational ages of forager sites in the PSHK region, equipped with bifacial stemmed points, securely fall within the Late Upper Paleolithic, they require further refinement in order to understand the precise duration of the technology and the ecological background. Bifacial stemmed point type is often, but not always, discovered in association with various microblade assemblages during the Late Upper Paleolithic. In this paper, I discuss the age of the Tachikawa point, a bifacial stemmed point type predominantly found in the PSHK, based on evidence from the Shirataki sites in eastern Hokkaido.

Izuho, Masami [292] see Davis, Loren

Izuho, Masami [292] see Gala, Nicholas

Izuho, Masami [292] see Iizuka, Fumie

Izuho, Masami [292] see Nakazawa, Yuichi

Izuho, Masami [292] see Terry, Karisa

Jack, Joshua, and Megan Denis

[129] *From Field to Pithouse and Back Again: An Examination of Modern Vegetation and Paleoethnobotany of Housepit 54*

This poster compares observed species from the archaeobotanical record of Housepit 54 and a modern botanical survey conducted around the Bridge River Village. Archaeological data has been compiled from seed identification efforts from 15 floors in Housepit 54, completed 2013 to 2024. Seeds and other macrobotanical remains have been collected from sediment samples collected from across each floor during previous field seasons, have been processed by flotation, then separated using geological screens, and sorted by size. Seeds were identified and counted using microscopic and modern comparatives. The survey of modern vegetation was completed in late May 2024. Xwisten Elders and Band Members shared knowledge of where significant plants had grown in the past, and these areas received pedestrian survey. All plants were identified, and some were collected for comparative samples. This survey represents the most recent efforts to combine Traditional Knowledge the Xwisten Elders hold, with the current plant populations around the Mid-Fraser Canyon, and likely plant populations of the past over time as seen in the Housepit 54 archaeological record. Forty-five species have been observed in the archaeobotanical record, and 128 species have been identified in the area around the village—62 of which were significant plants.

Jackson, Lily [69] see Shang, Xiaozheng

Jacob, Jeremy [165] see Boeda, Eric

Jacobs, K. Michaela [364] see Howland, Matthew

Jacobs, Kaitlyn (Wichita State University), and Matthew Howland**[64] *Preliminary Study of Erosion Risks to Heritage Sites in Kansas***

Archaeological and cultural heritage sites continue to be threatened by natural and anthropogenic influences nationwide. This project discusses UAV and 3D modeling applications conducted as part of a larger preliminary study regarding approaches to erosion risk assessment and documentation of archaeological sites in Kansas. To quantify erosion risk at individual sites, we apply an approach involving UAV flights with an RTK GPS system to collect photogrammetric data on a time-series basis. Models are processed and georeferenced in Agisoft Metashape. After exporting these files to GIS, we subtract one DEM from another to track the rate of accretion and erosion at the site using a DEM-of-Difference approach. This enables us to more effectively quantify the rate of change at these sites and identify at-risk areas of degradation at archaeological sites in Kansas.

Jaffe, Yitzchak [99] see Womack, Andrew

Jalbert, Catherine, and Victoria Pagano**[232] *Urban Archaeology, Acequias, and Cultural Resources Management in San Antonio, Texas***

In San Antonio, city-led regulatory processes have played a critical role in balancing modern development with heritage preservation and management. In this context, the use of urban archaeology has been central to evaluating the presence and intactness of rich archaeological deposits and features beneath San Antonio's well-developed cityscape. One of the more ubiquitous features encountered by cultural resources professionals is the acequia: a gravity-fed open irrigation system that supplied water from the San Antonio River to established Spanish Colonial Missions and surrounding farm fields. Synthesized historic maps and other archival documents act as helpful guides to understand the projected paths of former acequias, particularly for archaeological planning purposes in the dense built environment. This presentation discusses recent archaeological investigations in downtown San Antonio, and in particular will focus on the discovery of portions of preserved, intact acequia features recorded beneath previously developed land parcels. Using the synthesized historical maps resources and new excavation data, we will discuss how these acequias were expressed in the project areas, how this compares to archival data, and the ways such information can be leveraged to foster a deeper understanding of the historical landscapes where many of our modern cities now exist.

James, Madisen [193] see Carmody, Stephen B.

James, Robin (University of Colorado, Boulder)**[276] *Climate of Health: Nineteenth-Century Conceptions of Insanity and the Connection to Colorado's Environment***

Nineteenth-century Coloradans had many beliefs about the ways that their environment influenced their health, both physical and mental. Most well-known, those suffering from tuberculosis came to Colorado seeking a cure via the clean, dry air. Less well-known is the connection between Colorado's climate and nineteenth-century conceptions of insanity. For some, institutionalization in the Colorado State Hospital is directly linked to their environments, such as those who have "exposure" listed as their "cause of insanity" in the admissions record. For others, the connection is less obvious, such as the environmental contamination that resulted in "lead poisoning" as a cause of insanity or those with nervous complaints suffering from bouts of melancholia and anxiety attributed to Colorado's high altitude. This paper explores the many ways that Colorado's environment influenced health. The Colorado State Hospital admissions record from 1879 to 1899 is explored and contextualized with other historical documents and with skeletal analysis of those individuals who were buried on the institution grounds. This paper does not contain images of skeletal remains.

James, Steven (California State University, Fullerton), and Colin Busby (Basin Research Associates Inc.)**[377] *Robert F. Heizer and His Contributions to American Archaeology: 1930s to 1970s***

With over 500 publications, Robert F. Heizer (1915–1979) made substantial scientific contributions to American archaeology and anthropology, particularly in California, but also in the Great Basin, Alaska,

Mesoamerica, and Egypt. In 1946, he became one of the first archaeologists hired as an anthropology professor at the University of California, Berkeley. The statewide California Archaeology Survey was established at Berkeley under Heizer in 1948. He and his students soon developed the first version of a field guide to archaeological methods, revised over the years and still used today. As some of his last anthropology students at Berkeley, we discuss Heizer's archaeological investigations spanning five decades and his impact on the discipline.

James, Sydney, Carolyn Dillian (Coastal Carolina University), Katie Stringer Clary (Coastal Carolina University), and Kathryn Ranhorn (Arizona State University)

[340] *Indigenous Knowledge and Public Lands: A Collaborative Approach to Indigenizing Education in Outdoor Recreational Spaces*

Early colonial violence in the eastern United States had a detrimental impact on Native nations, including population reduction, loss of cultural knowledge, and forced assimilation. As a result, very few Native communities on the East Coast have received federal recognition status from the US government. The lack of acknowledgment has created conditions that limit Native control over how cultural knowledge is shared and represented. On the other hand, academic and professional archaeologists play a major role in interpreting and disseminating cultural information. Without extensive collaboration and consultation, archaeological data can often be misinterpreted under a Western lens, leading to the spread of misinformation and/or limited educational resources in public spaces. This work is a collaboration between non-Native academic archaeologists, the Waccamaw Indian People, and the Waccamaw National Wildlife Refuge. A central goal is to co-develop and introduce new signage to the refuge that highlights Indigenous history, knowledge, and life in the ancestral lands of the Waccamaw people. This work highlights how Native communities, federal programs, and archaeological data can work together to improve access to educational opportunities for the general public about local history and ecology from an Indigenous perspective in coastal South Carolina.

Jankiewicz, Stephen, Kathy Couturier (Avon Park Air Force Range), Juan Fernandez Diaz (University of Houston), Konnie Wescott (Argonne National Laboratory), and Rebecca Smith (Department of the Air Force)

[92] *From the Sky to the Ground: Establishing a Multi-platform Lidar Approach for Monitoring and Managing Cultural Resources at Avon Park Air Force Range*

[WITHDRAWN]

Jankiewicz, Stephen [233] see Pestle, William

Jankowski, Maegan (George Mason University), Haagen Klaus (George Mason University), and Carlos Elera (Museo Nacional Sicán)

[45] *Windows on Middle Sicán Identity and Politics: Mortuary Patterns, Bioarchaeology, and Intersectional Identities at Huaca Las Ventanas (900–1050 CE, North Coast of Peru)*

Intersections between identity, politics, and the dead provide windows into otherwise unobservable dimensions of ancient societies. In the multiethnic Middle Sicán culture (Peru; 900–1050 CE), Sicán lords buried their dead around six monumental huacas at the Sicán capital (La Leche valley). These huacas were symbols of political identity, loci of elite ancestor interaction/worship, and powerful placemaking for perhaps six elite lineages. Elites were buried in deep shaft tombs with exquisite grave goods, and their skeletal remains reveal lives of great privilege—contrasting with the humble burials and high morbidity among the local non-elite Muchik peoples. Here, we present a synthesis of mortuary and bioarchaeological data of 50 funerary contexts from Huaca Las Ventanas (HLV), one of the six elite Sicán huacas. Findings reveal widespread practice of distinctive ethnic Muchik funerary rituals at HLV, though they contained high-status objects featuring the politically charged Middle Sicán deity. Most individuals were associated with high frequencies of biological stress and oral diseases, which were embodiments of their lower status. These individuals may represent Muchik peoples integrated into elite power structures. Mortuary and bioarchaeological data together suggest previously unknown Sicán power-sharing mechanisms with the local population and intersectional/hybrid identities between Muchik and Sicán worlds. *****This presentation will include images of human remains.**

Janz, Lisa (University of Toronto, Scarborough)**[278]** *Shifting Niches: Pleistocene and Holocene Human Landscapes in the Gobi and Gobi-Steppe*

The way that landscapes are used is indicative of many aspects of human culture. Data on human land use in the Gobi Desert maps millennia of adaptation, but the resulting picture shows that climate change is not the only factor that has played a decisive role. It is becoming increasingly clear that availability of key resources like raw material, changes in subsistence economies, and potentially even trade networks, are all contributing factors in the organization of space. Moreover, a lack of focused research on key periods has made it impossible to understand how notable economic changes—such as broad spectrum foraging and the adoption of pastoralism—became integrated into preexisting systems. Here, I provide an overview of what is currently known about Pleistocene and Holocene land use, present recent preliminary findings, and make suggestions about critical future research areas.

Janz, Lisa [278] see Akogun, Moses

Janz, Lisa [288] see Witt, Kelsey

Janzen, Anneke [63] see Grillo, Katherine

Jaouen, Klervia [281] see Moubtahij, Zineb

Jaramillo, Ana Teresa [242] see Quintanar-Isaías, Alejandra

Jaramillo Arango, Antonio [41] see Del Cairo Hurtado, Carlos

Jarquín Enríquez, Juan [347] see Badillo, Alex

Jastremski, Nicole [185] see Martinez, Valentina

Jayarajan, Aditi [88] see Wallis, Neill

Jenkins, Jessica (Flagler College), Martin Gallivan (William & Mary), John Henshaw (William & Mary), and Justine McKnight (Archeobotanical Consultant LLC)**[101]** *Managing the Worlds' Edge: Human-Environmental Relationships and Manitou in the Chesapeake*

The edges of forests and waterways in the Chesapeake region were spiritually potent places on the Woodland period landscape, serving as thresholds that opened pathways between worlds. Powhatan historical ethnography hints that these liminal spaces required people to perform ceremonies and offer gifts to maintain balance with other-than-human persons. In this paper, we examine how people and their landscapes/waterscapes were co-constitutive in the Chesapeake, as communities actively managed the edges of forests and waterways. Specifically, we consider evidence of commoning through controlled burning and mariculture to maintain and propagate cosmologically and socially significant edge species: berries, deer, and oysters. Our analysis draws on archaeological, paleoenvironmental, and ethnographic evidence to explore how these practices sustained the spiritual and material well-being of Woodland period communities in the region.

Jenkins, Jessica [50] see Gallivan, Martin

Jenkins, Kathleen**[367]** *Ceramic Manufacture: Indigenous and Colonial Wares in Mission Life*

The Mexican supply routes to the Texas missions were often unreliable and could not guarantee an inventory of daily necessities to the mission population. As a result, the Indigenous populations of the missions were required to become self-sufficient and provide their own key resources. This necessitated mission inhabitants to grow their own crops, process food, and manufacture ceramic storage, cooking, and food processing vessels. Because the population of the mission included members of several Indigenous pottery-making groups, the ceramic assemblages recovered from the missions consists of several ceramic manufacture traditions. The ceramic traditions identified in the mission assemblage showcase experimentation with both

Indigenous and Mexican-style ceramic production techniques. This paper examines the interaction between potters and pottery manufacturing traditions within the mission assemblage.

Jenks, Kelly (New Mexico State University), and Jocelyn Valadez (Cibola National Forest)

[380] *Interpreting Ritual Deposits at a Multiethnic Site in Spanish Colonial New Mexico*

Interpreting evidence of ritual practices can be especially challenging in colonial contexts, where people, plants, animals, and materials from various places are forced into direct, sustained contact. In eighteenth-century New Mexico, centuries of Spanish colonialism produced a multiethnic, socially stratified population of agropastoralists who regularly traded and fought with the mobile indigenous groups that surrounded them. San Miguel de Loredo was settled in 1763 by colonial families who sought to improve their lives through property ownership, agriculture, and trade, gambling that these opportunities would outweigh the risks of settling a dangerous frontier. They lost this gamble seven years later when their settlement was attacked and residents were killed, causing the survivors to flee. Recent excavations and the analysis of previous collections from this site have identified several intentional and highly unusual deposits of animal bones and an animal effigy in contexts associated with the construction and destruction of habitation rooms. This paper describes those findings, and draws on broad comparisons to offer some possible interpretations.

Jennings, Justin (Royal Ontario Museum)

[51] *The Complex Politics of Political Complexity, an Andean Example*

In recent years, archaeologists have noted an oscillation between more pluralistic and more autocratic forms of governance in the same societies. This paper argues that our understanding of these transitions has been hampered by oversimplified models of political complexity. Decision-making today is often confusing: ad-hoc and routinized, despotic and democratic, top-down, bottom-up, and sideways. Shifts in process can lead to shifts in power, sometimes in unexpected ways. Through the rules of the game would be different, past politics were also complicated. Understanding shifts in earlier forms of governance therefore requires a better feel for the many institutions at play in a society and the ways that these institutions were interconnected. As a case study, I look at the rise of the Inca Empire in the central Andes in relationships to house societies that for centuries inhibited political centralization. Inca politics worked not by dismantling these houses but by incorporating them into a spatially and temporally based ranking system that maintained autonomy. Then they pushed outward to conquer millions. The resulting organization, in a word, was “despotic,” but this easy labeling obscures the dynamic complexities of how an Inca emperor could arise from a long-standing system dead set against anyone seizing power.

Jennings, Madeline (Washington State University)

[287] *Applying the Theory of Heart-Centered Archaeology to Issues of Exclusion in Archaeology*

This paper will work to explore not only the basis and creation of the theory of Heart-Centered Archaeology, but the way that it can be used to overcome the various issues of exclusion in archaeology that persist to this day. It will be compared to other theoretical approaches and broken down into the merits and drawbacks of Archaeology of the Heart compared to the others. Exclusion will also be explored independently, as it exists within and between archaeologists and from archaeologists to other communities. Then each issue will be given a specific approach built out of the tenets of Heart-Centered Archaeology. As the theory is an Indigenous ontology, the paper will focus primarily on applications in Native and community spaces, but will venture beyond that, and into other spaces. The paper will conclude with the viability of emotive archaeology as a way to approach fixing long-standing exclusion, using an analysis of its success and results in various conditions across the world.

Jennings, Thomas [175] see Miller, D. Shane

Jensen, Anne (University of Alaska Fairbanks)

[99] *“Where your deep gladness and the world’s deep hunger meet”: Lessons from 40 Years in North Alaska*

Most of us probably went into archaeology because we were curious about humans in the past. Traditional archaeological education, from theoretical to practical (field schools), focused on answering our scientific questions. How best to employ that information in today’s modern world was rarely considered. Non-

archaeologists are also interested in sites, often for quite varied reasons. Archaeological sites are part of the tangible cultural heritage of descendant communities and of humanity writ large. The things we learn from such places informs our attempts to adapt to environmental change in a sustainable way. This adaptation is critically important to many communities. Fortunately, archaeologists do realize that it's possible and desirable to do both; answer scientific questions and provide services to various stakeholders. The question then is how to do this; how to find that "place where your deep gladness and the world's deep hunger meet," a project where you can pursue your research interests and use your expertise to provide service. This paper discusses ways and means to find that place and provide that service, also noting some challenges encountered.

Jensen, Matthew [91] see Freeman, Jacob

Jensen, Samuel (University of Oklahoma)

[85] *Casas Grandes Effigy Vessels after the Ontological Turn: A Case Study at Paquimé*

Various studies into the Medio period (approximately 1200–1450 CE) of the Casas Grandes archaeological culture have emphasized the importance of interpreting iconographic representations on ceramic artifacts to understand the cosmological and social organization of area. These studies have relied on a variety of theoretical approaches to interpret these representations. Since the Ontological Turn within the field of anthropology, however, the importance of Indigenous ontological frameworks has rightfully taken the spotlight in these discussions. In this poster, I critically evaluate how the theoretical developments of the Ontological Turn have been applied within the Casas Grandes region. I also suggest ways in which the central concepts of the Ontological Turn might be better applied within the region by providing a brief case study of hooded human effigy vessels from the site of Paquimé.

Jepsen, Anastasia (University of Wyoming)

[88] *Population Dynamics in Interior Alaska and Yukon: Demographic Reconstruction with a Regional Taphonomic Correction*

Northern Dene Athabascan areas of interior Alaska and Yukon Territory have some of the oldest evidence for human occupation in North America spanning up to 14,000 years ago. It is still unclear exactly what drives population fluctuation in this region as there were many environmental changes happening throughout time. This research uses radiocarbon dates from archaeological contexts from the Northern Dene Athabascan regions of Alaska and Yukon Territory as proxies for reconstructing past population estimates. The purpose is to interrogate how population changes in this region correlates with environmental changes and give insight into human-environment interaction throughout occupation. Additionally, global taphonomic corrections have been used to account for bias in taphonomy and loss in the archaeological record but not on a regional scale. A regional taphonomic correction using geologic radiocarbon dates in this area is employed to more accurately account for taphonomic loss in the archaeological record. In doing so, this research interrogates population fluctuations spanning from over 14,000 years ago, and what may have caused those changes.

Jerrems, William (Boise State University), and Sam Hugues (Boise State University)

[317] *A New Look at Old Collections: Pleistocene Horse Hunting on the Shores of Paleo-lake Lahontan in Northwest Nevada*

The first successful colonizers of the New World should exhibit a horse-based subsistence activity similar to that of their Old World antecedents. Horses were a primary food source for much of the Middle and Upper Paleolithic in Eurasia which may well have been the case in the relatively dry colder climates of the American west, specifically the northern Great Basin. Fishbone Cave sets on the northeast shore of Winnemucca Lake, a remnant of the huge Pleistocene pluvial Lake Lahontan. An assemblage of 215 horse osteological remains was recovered by Phil Orr in 1954 from the cave in association with human activity, which he referred to as the 'horse eaters' of the Ice Age. Going beyond a distributional study of horses in the North American archaeological record, as has been presented in the past, we have taken a zooarchaeological perspective of the assemblage of osteological horse remains at Fishbone Cave, which we believe will open a new understanding of the environment occupied by both humans and horses at the end of the North American Pleistocene.

Jiang, Luman (Chengdu Institute of Cultural Relics and Archaeology), Lin Xiao, Ning Wang, Lijuan Zhao, and Sifan Li

[279] *Study on the Protection of Water-saturated Ivory Unearthed in Sichuan, China*
[WITHDRAWN]

Jiang, Wenxiao [392] see Charlton, Michael

Jiao, Tianlong (Bowers Museum)

[44] *Bronzization and the Formation of Sanxingdui Culture*

The emergence and transformation of the Sanxingdui culture are closely connected with the social and cultural changes of Bronze Age China. The concept of bronzization provides a dynamic framework to understand the formation and transformation process of the Sanxingdui culture. The introduction of bronze metallurgy to the Sichuan Plain around 1800 BCE did not immediately shake up the techniques at Sanxingdui. The available archaeological date suggests that only by around 1200 BCE large quantity of bronzes started to appear at Sanxingdui. Although the Sanxingdui metallurgy originated from the Central Plain, it was mostly used to produce objects related to religious activities. Sanxingdui bronzes so far are not found at burials, suggesting they were not used as mortuary objects. The Sanxingdui artisans did not focus on delicate details of the bronze casting. Instead, their attentions were on shapes and sizes. Many large size sculptures are not seen in any other regions during the Bronze Age. Therefore, the bronzization process in the Chengdu Plain had a very strong localized characteristics, different from the Central Plain and other regions in Bronze Age China.

Jiménez Cano, Nayeli (University of California San Diego), and Rafael Cobos (Universidad Autónoma Yucatán)

[376] *Coastal Resource Management and Sustainable Subsistence: Stone Crab Harvesting at Isla Cerritos, Yucatán*

In Mesoamerican archaeology, animal management in coastal environments is often underexplored, particularly concerning the consumption of invertebrates beyond mollusks. This presentation addresses this gap by examining the exploitation of stone crabs (*Menippe mercenaria*) at Isla Cerritos, Yucatán, Mexico, during the Terminal Classic period. The site's substantial archaeozoological assemblage includes a high frequency of crab remains, predominantly claws. Detailed metric analysis of these claws reveals a marked preference for larger individuals, suggesting selective harvesting practices while morphological analyses suggest the presence of renewed claws. Ethnographic parallels from the Gulf of Mexico indicate that small prey, such as crabs, have historically been a reliable and predictable resource, with claw removal practiced as an economically sustainable method that is still being practiced today. This study argues that the dominance of *M. mercenaria* claws in the assemblage and the preference for larger specimens point to a renewable subsistence strategy, where crabs were harvested sustainably by removing claws, allowing for regrowth. The findings provide new insights into the management of marine resources in Mesoamerica, emphasizing the significance of invertebrates in the diet and economy of coastal communities.

Jodry, Pegi [179] see Andrews, Brian

Johannesson, Erik (Lifeways of Canada Ltd.), Brian Vivian (Lifeways of Canada Ltd.), and Janet Blakey (Lifeways of Canada Ltd.)

[364] *Revisiting and Reevaluating Bone Uprights on the Northern Plains: Two Case Studies from the Junction Site (DkPi-2) and Bodo (FaOm-1) in Alberta*

Since the early 1960s, features comprising vertically placed pieces of bone, commonly referred to as "bone uprights," have been identified archaeologically at several bison kills on the Northern Plains. These features have predominantly been associated with Besant and Sonota period sites and their interpretation has typically gravitated toward functional explanations such as tent pegs, post shims, or anvils to reduce lithics or bone, and in a handful of instances, as serving some heretofore unknown ceremonial purpose. Overall, the phenomenon remains under-theorized and has not received in-depth treatment in the available literature. In particular, the ceremonial or ritual dimensions of bone uprights stand out as particularly unexplored, especially as communal bison hunts are known to have had been infused with spiritual and cosmological

meaning that required observance. In this paper we describe a series of bone uprights from Old Women's phase occupations at the Junction Site (DkPi-2) and Bodo (FaOm-1) in Alberta to both challenge the spatiotemporal associations of these features and to propose a reassessment of the phenomenon to appropriately include the ceremonial dimensions and implication of bone uprights from Late Precontact period sites.

Johansson, Lindsay (Idaho State Historical Society)

[245] *Fremont Architecture: Examining Evidence for Regional Consistency in Structure Function Despite Variability in Structure Forms*

During the Fremont period (ca. AD 300–1400), individuals in the eastern Great Basin aggregated into larger and more permanent settlements, and these settlements clustered together across the landscape. Within many settlement clusters, sites exist containing structures that, on the surface, appear both architecturally and functionally distinct from typical residences. To date, analysis of these unusual structures has been conducted utilizing information from a small sample of sites that was not systematically collected; this project represents an opportunity to assess conclusions regarding Fremont architecture utilizing a wholistic and systematically collected database of information regarding Fremont architecture. I argue that while Fremont architectural characteristics vary, the use (or function) of Fremont structures is shared across the region. Within Fremont communities, activities taking place either in or in association with unusual structures (central structures and oversized pit structures) and the architecture of some homes (surface houses) suggest the presence of leaders, ritual practitioners, and other individuals of elevated importance within the community.

Johnakin, Anne

[67] *Starch and Phytolith Analysis of Drinking and Cooking Wares from Early Bronze Age IV Tell Qarqur, Syria*

This project investigates cooking and brewing techniques from Early Bronze Age IV Tell Qarqur using starch and phytolith residue analysis methods. The ceramic samples are from two contexts: Area A (a kitchen with stores of bitter vetch) and Area E (a suspected temple site). Both contexts were chosen for the likelihood of their associated pottery being used for cooking or serving starch-based products, such as bread, porridge, and beer. Microscopic analysis of residues revealed starch granules and phytoliths, which was compared to modern samples to determine plant taxa and biochemical changes. Results of this study show no evidence of bitter vetch processing within the vessels sampled. There is evidence of wheat and barley starch being modified from cooking and brewing. Interestingly, some sherds reveal a large number of flax fibers, which have evidence of being spun, suggesting some vessels may have been used for fiber processing or used textiles as cooking tools. One vessel also shows remains of starch spherulites, likely the result of cooking processing involving rapid boiling and then cooling or acid modification. This analysis provides valuable insights into the diet, craft production, and culinary practices of Orontes River Valley communities during a time of great transition.

Johnson, Anissa [322] see Razo, Mikaela

Johnson, Brad [184] see Kardulias, Drosos

Johnson, Eileen [112] see Allen, Myriah

Johnson, Eileen [284] see Hurst, Stance

Johnson, Eileen [302] see Jones, Lila

Johnson, Emily (UC-Santa Barbara), Amber VanDerwarker (University of California, Santa Barbara), and Christopher Pool (University of Kentucky)

[337] *Identifying Nixtamalization at Formative Period Tres Zapotes, Veracruz, Mexico*

Tres Zapotes, the largest epi-Olmec site in southern Veracruz, Mexico, has an occupation history spanning 2,000 years from the Early Formative (1500 BCE) to the Classic (300 CE) periods and saw the emergence of political complexity, agricultural economies, and monumental construction in the region (Pool and Loughlin 2017; Pool et al. 2010). Previous macrobotanical analysis at the site shows a statistically significant increase in

maize use over time (Peres et al. 2010), but no microbotanical studies have been performed to provide a complimentary view of maize use. Previous comparative analysis in the region (VanDerwarker and Kruger 2012) has suggested that intensity of maize use in the Early (1500–1000 BCE) and Middle (1000–400 BCE) Formative periods may be correlated to proximity to political power rather than ecological suitability, suggesting that Tres Zapotes is an ideal site at which to evaluate the impact of emerging staple maize foodways, such as nixtamalization. Nixtamalization, a cooking process that enhances maize's nutritional value, may have been key to the success of early polities increasingly reliant on maize agriculture. This research is the first attempt to identify the presence and ubiquity of maize nixtamalization over time at Tres Zapotes.

Johnson, Emily [118] see MacLellan, Jessica

Johnson, Hannah [226] see Johnston, Julia

Johnson, Jeremy (Confederated Tribes of Grand Ronde), Dustin Hawks (Confederated Tribes of Grand Ronde), Michael Lewis (Confed. Tribes of Grand Ronde), and Briece Edwards (Confederated Tribes of Grand Ronde)

[64] *Creating a Digital Twin of tumwata Village: Combining Historic Narratives and 3D Modeling*

Tumwata Village, located at Oregon City, Oregon, holds a complex archaeological record of thousands of years of Indigenous lifeways, overlain by nineteenth-century settler and commercial expansion, and twentieth-century industrial domination. The resulting complexity presents a challenge for archaeologists attempting to understand both this complicated intertwined mix of brick, steel, and oral tellings. In doing so it presents a unique opportunity to integrate historic documents with emerging technologies to untangle physical structures and better untangle the complex history of site. Prior to, and during demolition of the old Blue Heron Paper Mill, we used the 3D capabilities of ArcGIS, the digital modeling techniques of photogrammetry and lidar, and historic documents, to create a digital model of tumwata Village. This has allowed the Confederated Tribes of Grand Ronde-Historic Preservation Office to reach the dual goals of useful redevelopment and preservation of the site's heritage.

Johnson, Jeremy [206] see Lewis, Michael

Johnson, Lucas (Nellis Air Force Base CRM)

[166] *At the Confluence of Local and Regional: Domestic Lithic Use from Altar de Sacrificios and Its Surrounding Region*

Flaked and ground stone from ancient Maya domestic contexts continue to offer fundamental insights into domestic activities. Additionally, geological attributes of lithic materials generally afford the analysis of regional trade by contrasting local versus regionally accessible materials. Applying classification criteria used by the Peabody Museum project, the recent analysis of new materials excavated by the Proyecto Arqueológico Altar de Sacrificios catalogued more than 5,500 lithic artifacts, the bulk of which are made of locally available chert. This high-quality local chert was used to make large adzes and points, as well as small drills for crafting. Despite the high percentage of local chert, other locally available toolstone types are present suggesting a diversity of toolstone choices to enable innovative strategies for domestic work. Regional exchange is evident in the 1,500 obsidian artifacts recovered from domestic contexts and offer insights into local access and use of nonlocal materials. The flaked and ground stone assemblages from Altar are an impressive example of what we can recover from the investigation of household contexts. The data reinforces existing information gathered by previous studies and the area in general but allow the discussion to center on domestic spaces and practices.

Johnson, Lucas [223] see Freund, Kyle

Johnson, Peri

[237] *Under Alluvium: Development and the Protection of Buried Archaeological Sites in Turkish Cities*

Since 2012, the Turkish government has implemented regulations fostering the sustainable development of metropolitan cities as drivers of a globalizing economy. Coupled with these regulatory reforms are robust

policies on the preservation of historical heritage within cities and the identification and inventory of immovable heritage such as archaeological sites. In practice, however, the regulations set apart sites as manageable heritage polygons surrounded by extensive landscapes zoned for development and extraction. Whereas inventories are growing, often archaeological sites are not protected when, contrary to policy, sites are thought hindrances, and unhindered, unsustainable development has priority. Heritage destruction, however, requires plausible deniability and official amnesia that in this paper is argued to be often grounded on layers of alluvial deposition separating the surface from earlier periods. Many Turkish cities are located on alluvial plains and deltas that experienced episodes of alluvial aggradation, particularly in the medieval and modern periods. Urban transformation projects in 2023 in Konya Province and 2015 in Kastamonu Province indicate that layers of alluvial deposition enable the official deniability of heritage worth protecting under cities, despite deep local memories of seeking loot and quarrying for building materials under alluvial deposits.

Johnson, Rachel (Tulane University), and Sarah Paterno (Tulane University)

[46] *“A Connecting Link”: An Archaeometric Reinvestigation of Ceramic Artifacts from the Cave of the Owls and Their Relationship with Upper Amazonian Ceramic Assemblages*

Stylistic similarities between ceramics from the Central Andean Highlands and the Upper Amazon were central to Don Lathrap’s argument that Tropical Forest Culture contributed crucial components of Andean highland civilization. Artifacts from the Cave of the Owls provide “a possible connecting link” between distinct highland-lowland ecological and cultural zones, owing to the site’s unique position within the montane forests of the *ceja de selva*. Despite their importance to understanding highland-lowland social and economic interactions, these collections remained untouched for nearly 60 years, until Johnson conducted a paste study of the Ross Collection ($n = 41$; Hearst Museum, University of California, Berkeley) in 2019. This study identified four major paste groups dominated by (1) monzogranite, (2) limestone, (3) crushed quartz, and (4) metamorphic rock inclusions. The results of subsequent petrographic and geochemical analysis ($n = 11$) highlight subtle variations in raw material acquisition and production practices, as well as significant technological breaks between earlier Fine Ware and later Coarse Ware components. Altogether, these findings provide a more nuanced interpretation that generally supports Lathrap’s argument for a temporal break and a strong material connection to the Upper Amazon.

Johnson, Taryn (Chronicle Heritage), Lauren Jones (Texas A&M University), and Katie Custer Bojakowski (Texas A&M University)

[227] *What’s in That Vial? Collections Management Perspectives on Coprolite Collections*

Anthropological collections management professionals are increasingly challenged by the need to care for nonstandard materials suspended in liquids. With shrinking budgets and personnel, establishing standardized practices for managing these materials is essential for both resource preservation and operational efficiency. Coprolites, in particular, have seen a recent surge in research interest, yet standardized protocols for their management remain underdeveloped. Here, we present a management-focused case study of rehydrated coprolites from the Anthropology Research Collections at Texas A&M University (ARC-TAMU). We propose best practices for coprolite collections management, including the assessment of hydrated and dehydrated samples, optimal storage solutions, criteria for deaccessioning, and policies that can be adopted by other facilities. By addressing these needs, we aim to enhance the stewardship of these unique materials and contribute to the development of collections management practices that can adapt to evolving research demands and resource constraints.

Johnston, Chris (Paleocultural Research Group)

[179] *Windy Ridge: Quartzite Quarry Research in the Colorado High Country*

Indigenous people began using Windy Ridge during the Folsom period and continued mining this high-quality orthoquartzite for the next 11,000 years. The quarry, sitting at roughly 9,300 feet asl about 25 miles southeast of Steamboat Springs, spans nearly 1.5 ha and contains over 180 pits—which prior research has shown were more like trenches than pits. Several major workshop areas are associated with the site below the prominent Dakota Formation ridge. Archaeologists first documented Windy Ridge in the early 1980s, and follow-on work conducted by Douglas Bamforth and the University of Colorado at Boulder in 1993 represented the lone major research activity at one of the largest and most intensively used primary quarry

locales in northwest Colorado. In 2019, Paleocultural Research Group (PCRG) researchers and citizen-science volunteers, with the support of the Medicine Bow-Routt National Forests, began a multiyear research program at the site to better define the quarry and workshop boundaries, collect additional data on lithic reduction strategies and chronology, and create a National Register District nomination and public interpretation materials for the property. This paper will summarize these findings and will examine mobility, occupation intensity, and chronology of the quarry.

Johnston, Julia, Hannah Derouen, and Hannah Johnson

[226] *The Positive Impact of Bioarchaeology on NAGPRA Efforts in Louisiana*

Thirty-five years after the Native American Graves Protection and Repatriation Act's (NAGPRA) formation, federal organizations are still working through backlogs of inventory to comply with the legislature. This poster presents a realistic case study of how bioarchaeology can be a productive part of the NAGPRA process by detailing the steps that were taken by the Louisiana Division of Archaeology with the assistance of Louisiana State University to organize and inventory a small skeletal collection to be repatriated to local indigenous groups. The site, referred to as 16JA21, was excavated in the early 1970s by pothunters. Associated artifacts and skeletal remains were later donated to the state along with some detail of the excavation process, leading to confusion about context. This poster presents how bioarchaeology can inform on mislabeled skeletal remains. A summary of the analysis of all human and faunal skeletal remains including descriptions, weights, and MNI is provided. I will reflect on how such techniques can provide new insights into the presentation of human skeletal remains to descendant communities, therefore moving the NAGPRA efforts forward. *****This presentation will include images of human remains.**

Jokela, Amanda (California State University, Los Angeles), James Brady (California State University, Los Angeles), and Michele Bleuze (California State University, Los Angeles)

[104] *Rituals and Remains: A Bioarchaeological Analysis of a Deflocculation Unit from the Cueva de Sangre*

Dos Pilas, Petén, Guatemala, a significant political and economic lowland Maya capital during the Late Classic period (600–900 CE), saw intensive investigation of architectural surface features by the Vanderbilt University Petexbatun Regional Archaeological Project directed by Arthur Demarest in the early 1990s. Operating as a subproject, the Petexbatun Regional Cave Survey studied the associated subterranean features between 1990 and 1993. Investigations at the Cueva de Sangre, a large and complex cave 2.5 km southeast of the central plaza of Dos Pilas, recovered a large commingled human osteological assemblage during surface collection. These investigations also involved an experimental recovery project using chemical deflocculants to retrieve waterlogged artifacts from a 10 cm thick layer of highly plastic cave mud in Operation I. The deflocculation efforts resulted in a substantial human osteological assemblage from an area that produced no human bone during the surface collection. This paper presents an in-depth analysis of the human remains recovered from the deflocculation project and discusses the implications for the interpretation of ritual behavior of the ancient Maya that utilized the Cueva de Sangre. *****Esta presentación incluirá imágenes de restos humanos.**

Jolie, Edward (Arizona State Museum; University of Arizona), and Jennifer Pappalardo (Department of Surgery, University of Arizona)

[211] *Implications of Ancient Footwear Variability for Inferring Behavior from Artifacts, Impressions, and Ichnology*

The ichnological (trace fossil) record and negative impressions of perishable technologies left in plastic media comprise two underutilized lines of evidence for reconstructing ancient perishable material culture. Technological and morphological variability in archaeological and ethnographic Indigenous American footwear provide a starting point for generating expectations about what trace records may reveal about ancient footwear use. Insights from podiatry and analyses of perishable artifacts and their negative impressions can inform evaluation of footwear traces and highlights areas for interpretive caution. Compared to tracks left by woven sandals and slippers, which may reveal details of weave structure and texture, those of hide-based footwear such as moccasins are less likely to yield technological information but may be better for drawing inferences about foot pathologies and biomechanics as they relate to behavioral variability.

Jolie, Edward [179] see Gilmore, Kevin

Jonassen, Alexandra (California State Parks Inland Empire District), and Edward Knell (California State University, Fullerton)

[218] *The Conveyance of Paleoindian Toolstone to Pluvial Lake Mojave, California*

This study uses pXRF technology to delineate the conveyance of terminal Pleistocene–Early Holocene obsidian and fine-grained volcanic (FGV) toolstone and artifacts to pluvial Lake Mojave, California. Prior preliminary research indicates Paleoindians conveyed nonlocal Coso Volcanic Field (CVF) obsidian and Goldstone dacite to Lake Mojave from the northwest as well as nonlocal Shoshone Mountain obsidian from the north. Our study uses a substantially larger database of geochemically sourced artifacts ($n = 722$) than the prior study, and includes tools, projectile points, and debitage from field and lab-based collections. Results support the prior conclusion that CVF and Shoshone Mountain obsidian and Goldstone dacite are most common nonlocal sources; however, the larger sample now reveals that artifacts from several additional nonlocal obsidian and FGV sources were conveyed to Lake Mojave from source areas in California and Nevada. Nonlocal toolstone was thus conveyed south through the Owens Valley and southwest across Fort Irwin to Lake Mojave, as well as south along a likely corridor east of Death Valley. The local Soda Mountains felsite was also substantially used. Ultimately, this study reveals that the Paleoindian lithic conveyance, land use, and technological strategies employed at Lake Mojave were considerably more complex than previously recognized.

Jonassen, Alexandra [382] see Knell, Edward

Jones, Averi, and Caitlyn Streseman

[230] *Rattlesnake Jake and Longhaired Owens: Uncovering the Truth of Lewistown, Montana's, Infamous Fourth of July Shoot-Out*

On July 4, 1884, two outlaws known as Rattlesnake Jake and Longhaired Owens came to Lewistown, Montana, and caused a shoot-out that forever changed the town's history. Immediately following the shoot-out, folklore surrounding the Independence Day event rapidly developed, inspiring ghost tours, reenactments, and parades. With only 17 eyewitness accounts to lead the narrative, this project seeks to uncover what really happened that Fourth of July afternoon through ethnohistorical and ethnographic methods, osteological and aDNA analysis of two human crania, and a digital reconstruction of the two outlaws themselves. *****This presentation will include images of human remains.**

Jones, Eric

[238] *A Tale of Three Towns: Landscapes of Inequality in Madison County, NY, during and after the Transition to Commercial Farming, 1850–1920*

In this research, I use agricultural and household census data from 1850 to 1880 and USDA data from the early twentieth century in conjunction with historical maps to compare the types of farms and surplus production across three towns in Madison County, NY: Fenner, Nelson, and Cazenovia. I determine types through k-means analysis of the agricultural data. I calculate surplus from the same data and look for trends using simple descriptive statistics as well as discriminant function analysis. These three towns have been socially tied to one another since their establishment in the early 1800s. However, they have had considerably different economic trajectories and outcomes. This makes for an interesting case study in which to scale up our previous town-focused research to understand variability between interacting rural communities . . . something we rarely discuss in the United States. The results suggest that the wealthiest of the towns, Cazenovia, began that way, but the establishment of local dairy processing facilities, like cheese factories, leveled the economic playing field between the towns. Only in the early twentieth century, when those facilities moved farther and farther away with the establishment of an extractive agricultural production system, did the towns once again have more economic disparity between them.

Jones, Eric [238] see DeWitte, Sharon

Jones, Eric [238] see Perry, Gabrielle

Jones, Joe [125] see Vogt, Cassie

Jones, Kara (University of Nevada, Las Vegas), and Barbara Roth**[245]** *Space and Place: Patterned and Persistent Land Use at Stump Springs, NV*

Stump Springs is a persistently utilized spring site located along the western border of southern Nevada within the Mojave Desert. Stump Springs is located adjacent to two notable trails, nestled within a dune field of spring mounds. Archaeological investigations were done at the site as part of a field school through the University of Nevada, Las Vegas to examine the nature and extent of site use over time as part of our ongoing research on past land use in the Mojave Desert. We recorded over 100 thermal features along with an extensive lithic and ground stone scatter. Evidence of patterned and persistent use emerged as the site was mapped and features were recorded. Use of Stump Springs spans from the Archaic through the Late Prehistoric, when the spring dried. Archaic and Late Prehistoric use are discrete and suggest a shift in desired resources over time. The site is located along the Southern Fox Song Trail, a pilgrimage trail which extends into the nearby Spring Mountains. These factors have made Stump Springs a space of cultural memory and a persistent place in the past.

Jones, Lauren (Texas A&M University), and Katie Custer Bojakowski (Texas A&M University)**[227]** *The Art of Soil Reduction: Practical Approaches for Collections Managers*

Managing excess soil, sediment, and geological (SG) samples is a challenge faced by many collections management professionals. These types of samples are often overrepresented and relatively disorganized in collections facilities, leading to issues of sample preservation and space allocation. Here, we address the challenge of managing excess SG samples within archaeological collections by presenting a case study from the Anthropology Research Collections at Texas A&M University (ARC-TAMU). Faced with limited storage space and redundant sample concerns, ARC-TAMU undertook a strategic reduction of SG samples to improve the efficiency of its collections management practices. By reducing and deaccessioning large quantities of minimally useful and redundant SG samples, we successfully optimized storage space and resource allocation while improving the standard of care for existing SG samples. This solution not only enhanced the management, preservation, and accessibility of archaeological materials at ARC-TAMU but also allowed for the acceptance of new materials into the collections. This scalable approach demonstrates how targeted reductions in sample volume and use of novel storage solutions can lead to significant gains in efficiency, making it a valuable reference for the broader archaeological and museum communities.

Jones, Lauren [227] see Johnson, Taryn

Jones, Lila (Museum of Texas Tech University), and Eileen Johnson (Museum of Texas Tech University)**[302]** *Taphonomic Analysis of a Faunal Assemblage Recovered from a Multi-occupation Locality in Mustang Draw, Southern High Plains of Texas*

Whiskey Flats (41MD50), located in Midland County, Texas, was situated around Mustang Pond in Mustang Draw. Two separate bone concentrations (Area 1 and Area 2) were recovered within a ~40 m distance of each other. Area 1, a now dry pond, consisted of a modern bison and modern horse bonebed radiocarbon dated to ~AD 1750. Area 2, a terrace north of the pond, also yielded bison and horse bone along with cultural objects. The collection, nevertheless, primarily consisted of a vertebrate assemblage. Taxonomic assessment and taphonomic analysis used to interpret the paleoecological conditions at the time of deposition indicated differential modifications in each Area reflecting varying environments despite proximity. Area 1 was identified as a lacustrine deposit and Area 2 represented a drier environment with further evidence of weathering. Historic objects aided in dating the Area 2 occupations within the eighteenth–nineteenth centuries. Cultural objects and historic records allowed for determining the occupants of the site. In general, the analysis provided a greater understanding of the people, landscape, and fauna of the Southern High Plains from the past three centuries.

Jones, Lila [198] see Westfall, Madison

Jones, Naomi (George Washington University)**[347]** *Defining the Nochixtlan Miniature: An Analysis of “Ollitas” from Etlatongo, Oaxaca, Mexico*

While archaeologists across Mesoamerica have long excavated miniaturized ceramic vessels, they receive

little attention. Recent shifts in theoretical thinking toward materiality and craft production, however, allow us to better understand miniatures. Previous interpretations of Oaxacan miniatures range from associations with childhood to suggestions of ritual use, but neither perspective incorporates local ontological frameworks. This study focuses on 115 miniature ceramic vessels excavated from two households at Etlatongo, in Oaxaca, Mexico's Nochixtlan Valley. One was occupied between the late Formative and early Classic periods (CE 150–400 cal; $n = 20$), the other during the Postclassic (CE 1250–1520 cal; $n = 95$). Analysis shows that miniatures are a more diverse category of artifact than expected in proportional and stylistic terms; there is both consistency and variability across the assemblage. Miniatures from the Nochixtlan Valley and the nearby Central Valleys of Oaxaca demonstrate similarities in scale and proportion but significant differences in form and style, suggesting the existence of related-but-distinct communities of practice involved in the production of miniature ceramics. This project challenges assumed notions of miniatures as children's toys; their association with termination events at Etlatongo and an engagement with Ñudzahui ontologies suggest possible connections with concepts of reciprocity, memory, and placemaking.

Jones, Olivia (West Virginia University), and Basil Stewart

[227] *A Case Study of Inadvertent Discovery: Misidentification of Human Infant Remains in a Faunal Assemblage*

Previous bioarchaeological literature has reported that infant and perinatal human remains have been misidentified in the past, either in the field during excavation or during laboratory analysis. The misidentification of these individuals is due to a variety of reasons, including their small size, their fragility often resulting in postmortem fragmentation, their morphology is often confused with small mammals and bird bones, and the overall lack of training for field and laboratory technicians in perinatal and infant human osteology. This poster presents a case study that was prompted by the inadvertent discovery of neonatal remains while processing a large faunal assemblage from a Fort Ancient settlement site in West Virginia. The collection was initially sorted by archaeologists after excavation in the 1970s and again by a master's student in the 1980s; however, during the current project, the authors identified perinatal and infant human remains. Misidentification creates two major problems. First, it results in inaccurate archaeological reconstructions of variation in mortuary practices. Secondly, if individuals are not identified during inventorying, it creates an obstacle for repatriation of the smallest and most vulnerable Ancestors. Laboratory technicians working with faunal assemblages should be trained in identifying adult and subadult human remains.

Jones, Olivia [185] see Leight, Megan

Jones, Scott (Eastern New Mexico University)

[127] *Does It Measure Up? An Experimental Study of Hell Gap Ground Stone*

The Hell Gap National Historic Landmark (NHL) has yielded many ground stone artifacts that have yet to be analyzed. Ground stone artifacts can expand our understanding of Folsom lithic technologies. Ground stone tool collections are cumbersome and difficult to access. Many researchers are solving this problem by creating 3D models of these artifacts. But this leads to the question; can these 3D models be trusted as a substitute for measuring the artifact itself? Using artifact HGI UI-8250 found at the Hell Gap site this study examines the differences in measurements made on the artifact and on the 3D models of the artifact. The 3D models were created via photogrammetry and assembled on Metashape. We will be measuring landmarks from the actual artifact and comparing the results to measurements made on chunks of the 3D model and measurements made on a complete render of the artifact. Results will contribute to our understanding of 3D model methodology and ground stone analysis.

Jones, Terry, and Brian Coddling

[60] *Evaluating the Ecological Implications of Red Abalone (*Haliotis rufescens*) Deposits on the California Coast*

The largest abalone in the world, red abalone (*Haliotis rufescens*) today are found in the intertidal between Point Conception, California and Oregon. Long-studied archaeological "red abalone middens" on the Northern Channel Islands, suggest intervals when extremely large red abalones were abundant and regularly exploited by Indigenous people. Red abalone shells and features with many large individuals are also known from the central California mainland. Here we summarize the temporal and spatial distribution of red abalones on the southern and central California Island and mainland coasts based on 554 radiocarbon dates

from 211 archaeological sites. Patterning in the dates suggests diachronic variation in conditions favorable to red abalone populations and their exploitation by humans. Archaeological patterns also vary spatially. As recognized in many previous studies, changes in sea surface temperatures seem to explain most but not all of the variation in the presence/absence of this mollusk. Here we evaluate other likely contributors to these patterns including the effects of sea otter predation, changes in settlement/subsistence, and north-south variation in sea temperatures, among others.

Jones, Tristen (University of Sydney)

[174] *Beyond Age Determinations: Building Theoretically Informed Contextualized Understandings of Deep-Time Rock Art in Sunda and Sahul*

Innovations in methods that target datable materials using radiocarbon (Finch et al. 2019; Green et al. 2021) has enhanced the capacity of rock art researchers to date rock art in Australia, producing a range age determinations for a diversity of rock art motifs (Finch et al. 2020, 2021; Jones et al. 2017). Similarly, age determinations generated by uranium series dating from rock art motifs from across ISEA (Aubert et al. 2014, 2018, 2019; Brumm et al. 2021; Oktaviana et al. 2024) have drastically revised our understanding of the evolution of ancient symbolic behaviors globally. Despite groundbreaking novelty, the impact and benefit of these ages in enhancing our understanding of the sociocultural function of symbolic behaviors remains limited due to the lack of research that demonstrates the chronological and stylistic relationships between the dated motifs and the broader motif assemblage and their archaeological and environmental contexts (though see Jones and May 2017; Norman et al. 2024; Kowlessar et al. 2024; Veth et al. 2021, 2024) hampering the ability to undertake interregional analysis. In this paper we identify the current gaps in knowledges and suggest research pathways forward in order to build more theoretically and contextually informed interpretations of rock art.

Jonsson, Emily (University of Arizona), and Jeffrey Blythe (Jicarilla Apache Nation THPO)

[302] *In a Box or in the Ground: A Case Study on Legacy Collections Excavated from Tribal Lands*

Archaeology is conducted with the hope that the artifacts unearthed through excavation will have enduring value as archaeological collections housed in institutions. However, this perceived value has been called into question as the field increasingly engages with descendant communities who often do not value Western-style museums and with the archaeological curation crisis at institutions across the country. This paper shares how the legacy collections of the La Jara site on the Jicarilla Apache Reservation were evaluated through multiple methodologies to provide the Nation with an understanding of the potential research value of its excavated artifacts. This research was undertaken as the Nation considered whether to house the collections in an institution or reinter them. The case study of the La Jara collections demonstrates how the combination of ethnographic interviews and preliminary artifact analysis can support holistic management recommendations and decision-making regarding legacy collections within Tribal cultural resource management settings.

Jordan, Keith

[97] *Women in the Monumental Sculpture of Tula: Are They Deities or Rulers? Is the Answer “Yes”?*

The study of Tula's Early Postclassic sculpture historically focused on the numerous male figures depicted, consistent with the alleged preoccupation with warfare of the site's art. This has led to scholarly neglect of images of women on relief panels, stelae, and statues. When discussed, these are usually identified as goddesses, with parallels to Late Postclassic iconography. While this approach appears sound in some instances, in others the evidence is ambiguous: are the subjects deities or elite women? I review female depictions in Tula's art tradition, focusing on two stelae, one from Tula Grande (Stela 6) and one from Xico in the Basin of Mexico. On these two monuments, costume elements may be associated with deities or serve as markers of elite status, but the stela format at Tula is employed for ruler portraits. The evidence suggests that like images of Tula's male rulers with attributes of Tlaloc, these stelae may represent female rulers or nobles in the guise of goddesses, in the case of Stela 6 possibly an Early Postclassic antecedent of Xochiquetzal.

Jorgenson, Gina [183] see Joyce, Judith

Jorgeson, Ian (Southern Methodist University), and Matthew Boulanger (Southern Methodist University)**[223]** *Geochemical Sourcing of Obsidian Artifacts from the Northern Rio Grande*

This poster presents the results of a large-scale geochemical sourcing study of over 4,000 obsidian artifacts from Coalition and Classic period sites in the northern Rio Grande region. These obsidian artifacts, held in legacy collections at the Maxwell Museum, the Museum of Indian Arts and Culture, SMU-Fort Burgwin, and the SMU Archaeology Research Collection, were excavated from eight Coalition and Classic period sites in the Rio Chama Basin, from the Coalition period site of Pot Creek Pueblo on the Taos Plateau, and from Picuris Pueblo. Using pXRF, we obtained geochemical data on these artifacts and identified the geological source for each artifact. We explore how the arrival of Tewa-speaking migrants in the Rio Chama Basin may have impacted the accessibility of certain obsidian sources to Northern Tiwa residents of the Taos Plateau, and we investigate patterns of obsidian source procurement among large towns in the Rio Chama Basin.

Joy, Shawn [379] see Feltz, William

Joyce, Arthur (University of Colorado, Boulder)**[290]** *An Overview of Interdisciplinary Research on the Classic-Postclassic Transition in Oaxaca*

This paper provides an overview of ongoing interdisciplinary research on the Classic-Postclassic transition in Oaxaca. The research focuses on two interrelated but contrasting ecological regions: the lower Río Verde Valley in the semitropical lowlands and the Nochixtlán Valley in the temperate highlands. Preliminary paleoecological research in Oaxaca and beyond suggests a period of climatic drying at this time, which may have negatively impacted agriculture. The interregional comparison contributes to evaluating the impact of climate change because in Nochixtlán agriculture is susceptible to drought, while in the lower Verde higher rainfall and nonagricultural resources likely buffered domestic economies. In the lower Verde, archaeological research has shown that at approximately 900 CE the polity seat of Río Viejo collapsed, and people began to gradually leave the city. Archaeological excavations in four low status residential areas of Río Viejo in 2022 and 2024 indicate that at this time people performed termination ceremonies and may have dismantled a modest public building. During the Early Postclassic, Río Viejo was abandoned, and the evidence indicates a reduced sociopolitical hierarchy. In Nochixtlán, excavations have examined Early Postclassic residential terraces at Cerro Jazmín. Ongoing analyses in both regions are examining changes in human health, diet, and domestic economy.

Joyce, Arthur [290] see Aguayo Ortiz, Elaine

Joyce, Arthur [290] see Ayala, Abilene

Joyce, Arthur [290] see Clow, Zachery

Joyce, Arthur [290] see Cruz Sosa, Ivonne

Joyce, Arthur [290] see Ichikawa, Akira

Joyce, Arthur [290] see Mayes, Arion

Joyce, Judith (Impact7G), Gina Jorgenson (Eocene Environmental Group), Jade Finch (Eocene Environmental Group), Joe Artz (Retired Geoarchaeologist), and Art Bettis (University of Iowa)**[183]** *Geomorphological Approaches in CRM: Enhancing Site Identification and Interdisciplinary Collaboration along the Missouri River*

In the Midwest, the integration of geomorphological methods to characterize relative age, lithostratigraphy and depositional environments is foundational to cultural resource management (CRM) best practices. This is due to the geologic history in the region and the significant movement of soils since the introduction of modern agriculture, factors that have resulted in the inability for surface survey to identify many significant prehistoric archaeological sites. Previous works have provided a valuable framework for understanding preservation in the region and improving site identification and stakeholder engagement. These works emphasize the need for interdisciplinary collaboration, clear communication with stakeholders, and robust public engagement strategies, all underpinned by comprehensive training programs for CRM practitioners. Training programs that focus on interdisciplinary communication are essential for creating a shared language

around site formation processes, stratigraphy, and landscape evolution. Building research designs around this interdisciplinary approach ensures that each team member can contribute their expertise effectively and work toward common goals. Based on lessons learned from our geoarchaeological investigations along the Missouri River in the Dakotas, we offer recommendations that might greatly streamline the time- and labor-intensive process of subsurface prospection for sites deeply buried in Holocene alluvium.

Joyce, Rosemary (University California, Berkeley), and Rus Sheptak (University of California, Berkeley)

[201] *Multiple Perspectives on African Diaspora Histories: Archaeology of Black Communities in Latin America*

For much of its history, the archaeology of Latin America has been framed as concerned primarily with the period before European colonization. Even as archaeological research on the colonial period expanded, a focus on a dichotomy of Indigenous peoples and colonizers continued, an expression of the original framing of archaeology here as the study of indigenous populations. It is only in relatively recent years that archaeologists here have begun to grapple with the presence of African diaspora populations: people who do not fit easily within the colonizer/colonized dichotomy, and yet in many parts of the region, may form a large proportion, even the majority, of the historical population. On the one hand, the late turn to archaeologies of African diaspora populations in this region means some earlier work is in urgent need of reconsideration. Yet at the same time, the relative recency of these studies means they have been undertaken with more sophisticated frameworks, honed throughout the Americas. This presentation introduces some of the cultural philosophy that is specific to Latin American racialization, and the broader contexts within which the studies presented took place.

Juarez, Isis, and Patricia Viridiana Sánchez Ramírez (INAH)

[83] *Conservación de relieves estucados en Dzibanche*

La presente ponencia tiene como objetivo ofrecer un panorama general de los trabajos de conservación realizados en el área central de la Zona arqueológica de Dzibanché, durante la temporada 2023/2024. Específicamente se platicará sobre las intervenciones en los estucos modelados y en relieve presentes en las fachadas de diversos edificios, así como de los resultados obtenidos. Para ello, primero se dedica un apartado a los criterios y metodología aplicada durante las labores de conservación de los fragmentos de estuco hallados in situ. Asimismo, se expondrá y profundizará en la importancia del trabajo vinculante y colaborativo entre las actividades de conservación y las arqueológicas realizadas en campo. Posteriormente, se presentará una descripción puntual de las áreas intervenidas, así como de los muros que soportan estos modelados o relieves de estuco y sus características principales, como técnica de manufactura y materiales utilizados. Con la finalidad de presentar nuevos datos para su futura interpretación.

Juengst, Sara [297] see Duke, Guy

Juptner, Derick (University of Iowa)

[364] *Provenance Analysis of Ground Stone Tools from the Lovitt (25CH1) Site in Southwestern Nebraska*

The Lovitt (25CH1) site in southwestern Nebraska is an ancestral Ndee (Apache) peri-colonial village site. Often regarded as the type-site for the Dismal River Aspect of the Central Plains and Colorado Front Range, Lovitt has a large assemblage of lithic artifacts. Of these are approximately 152 pieces of ground. Ground stone tools can indicate patterns of food production, weapon creation, and craft activities. Additionally, the sources of ground stone raw material can add another dimension to our understanding of regional movement and procurement strategies. In this paper, we identify the raw material types used for the ground stone at Lovitt and perform macro and micro use-wear analysis on the collection. We aim to establish patterns of raw material and artifact use for the collection, and explore the use of such tools for food processing at Lovitt and thus potentially for the Dismal River aspect more broadly.

Jurado, Alexander (Tulane University)

[48] *The Middle Formative Lithic Economy of Tlalancaleca, Puebla: Recent Findings from Obsidian Technological Analysis and pXRF Sourcing*

Tlalancaleca was a major urban center in Puebla-Tlaxcala during the Middle to Terminal Formative periods

(1000 BC–AD 250). To better understand its formation, it is necessary to study the economic activities and provisioning networks of inhabitants during the onset of urbanization in the Texoloc phase (650–500 BC). To this end, I share new data on Tlalancaleca's Texoloc phase blade industry based on the technological analysis of obsidian recovered from a residence and community structure. Additionally, I present the results of pXRF obsidian sourcing of this assemblage. Finally, I compare Tlalancaleca's lithic economy and provisioning networks to those of Tetel, Las Mesitas, Xochitecatl, and La Laguna, contemporaneous villages and urban centers of Puebla-Tlaxcala. This comparison elucidates similarities and differences in the lifeways of rural and urbanizing settlements and the urban processes of the region.

Jurado, Erik (University of Colorado, Boulder)

[296] *Rethinking the Classic through Postclassic Occupations of San Ignacio, the Regional Center of the Amatzinac Valley, Morelos: Excavation Results from 2024*

San Ignacio is located in the Amatzinac Valley of Morelos, approximately 10 km south of the Formative center of Chalcatzingo, where it was the largest site in Eastern Morelos during the Classic period (300–600 CE). Previous studies argued based on regional settlement data that San Ignacio might have been a Teotihuacan administrative center. In 2019 I initiated the Proyecto Arqueológico Mapeo y Prospección de San Ignacio (PAMPSI) to investigate this hypothesis and the nature of San Ignacio's relationship with Teotihuacan. In this paper, I present key findings from the 2024 excavations, which targeted the site's ballcourt, main pyramid, and second largest civic-ceremonial complex. Preliminary results suggest that not all visible architecture dates to the Classic period and shed new light on the site's Epiclassic and Postclassic occupations. Work undertaken by PAMPSI is significant as it is contributing to our understanding of Classic period societies outside of the Basin of Mexico, as well as the local dynamics of understudied time periods in Eastern Morelos.

Kadowaki, Seiji, Toru Tamura (Geological Survey of Japan), Taiji Kurozumi (Kanazawa University), Masato Hirose (Nagoya University Museum), and Risako Kida (Nagoya University)

[82] *Introducing Aswad Terrace in the Hisma Basin: New Discovery of Initial Upper Paleolithic Remains in Southern Jordan*

The Initial Upper Paleolithic (IUP) is a chrono-cultural concept that is widely used in the Levant, Central–Southeastern Europe, and Central–North Asia to characterize unique cultural changes at the beginning of the Upper Paleolithic. The IUP remains have been recognized as key cultural records that can be related to paleoanthropological and genetic evidence to examine the dispersal processes of *Homo sapiens* in Eurasia. This presentation introduces a site, Aswad Terrace, with IUP cultural remains in southern Jordan. The site is located a few kilometers south of the Jebel Qalkha area, where Middle and Upper Paleolithic sites are concentrated. Aswad Terrace was discovered in 2022 during the survey by Nagoya University, and the excavations in the 2023 and 2024 seasons resulted in the collection of lithic artifacts that show technological characteristics of the Initial Upper Paleolithic, such as robust and sometimes pointed blades with large (often faceted) striking platforms as well as several blade cores. Stratigraphic and chronological records will also be presented. Aswad Terrace adds to the two IUP sites, Wadi Aghar and Tor Fawaz, in the Jebel Qalkha area. The presentation also shows preliminary comparisons of cultural remains and site settings among the three sites.

Kadowaki, Seiji [191] see Yin, Jianjie

Kahn, Jennifer (College of William and Mary)

[173] *Morphological Variability and Temporal Patterning in Rurutuan Domestic Architecture: Rectangular and Oval-Ended Stone Structures of the Austral Islands*

In complex societies like chiefdoms, understanding microscale social contexts of settlement systems is required if we are to mesh top-down and bottom-up perspectives to understand diachronic social change. Here, I examine new survey and archival survey data, and available excavation data and radiocarbon dates for precontact Rurutuan house sites and house-like structures. My goal is to explore how house form, size, architectural elaboration, artifacts, and subsurface features can be used to understand house function or house type, notably whether a structure was used as a residential house or a specialized house. I also use such data, along with site proxemics, to explore house types and their association with social status. Finally,

my Bayesian analysis of radiocarbon dates allows for a consideration of how residential and specialized house structures articulated with other social transformations on Rurutu island, like the rise of endemic warfare and the construction of monumental religious structures. This Austral Island house-based study, while preliminary, offers insights into how diversity at the microscale is linked to social status and occupational specialization and their relationship to chiefly ritual power.

Kahouadji, Nabil [288] see Kennedy, Ryan

Kaib, Mark [375] see Roos, Christopher

Kaliba, Potiphar [69] see Shang, Xiaozheng

Kalodner, Jacob (Harvard University), Christina Carolus (Yale University), Jessica Hendy (University of York), Tamsin O'Connell (University of Cambridge), and Rinat Zhumatayev (Al-Farabi Kazakh National University)

[167] *New Biomolecular Insights into Ancient Steppe Subsistence Economies: Transitions in Eastern Kazakhstan from the Early Bronze Age (ca. 3000 BCE) through the Saka Period (900 BCE–500 CE)*

Bronze and Iron Age Eastern Kazakhstan, bordered in the northeast by the Altai-Sayan Mountains and the southeast by the Saur-Tarbagatai Mountains, lay along not only the Inner Asian Mountain Corridor (IAMC) but also within an open steppe corridor linking the eastern Eurasian steppe, western Eurasian steppe, and China. Given its geographic significance, the region has received renewed and significant archaeological attention in the last five years. We further this recent work through the application of a promising new combination of biomolecular methods that has produced high-resolution dietary data in other parts of the Eurasian steppe. In this study, we examine human and faunal bulk stable isotopic ($\delta^{13}\text{C}$, $\delta^{15}\text{N}$) data and paleoproteomic data from human dental calculus together in order to assess long-term variability in diet and subsistence economy in eastern Kazakhstan starting from the Early Bronze Age and through the Iron Age (ca. 3000 BCE–500 CE), a period spanning the introduction of domesticates to the intensification of subsistence strategies. These multiproxy dietary data are put into dialogue with current perspectives on the development of social and economic complexity in Bronze and Iron Ages in order to expand our understanding of this transformative period of Kazakh prehistory. *****This presentation will include images of human remains.**

Kamenov, George [288] see Boileau, Arianne

Kamenov, George [288] see Giovas, Christina

Kamp-Whittaker, April (California State University, Chico), Bonnie Clark (University of Denver), and Annie Danis (Cal Poly Pomona)

[322] *In-Field Analysis as a Community Archaeology Measure*

Communities are increasingly interested in noninvasive archaeological methods, especially in relation to the collection, analysis, and curation of surface artifacts. This poster explores a long-term case study which uses a combination of infield analysis and the temporary collection of artifacts for detailed analysis (called “catch and release”), to effectively document artifacts recorded during survey. Since 2008 the Amache Community Archaeology Project has been using a mixture of infield and field lab analysis to help document and preserve archaeology at the Amache National Historic Site, a World War II Japanese American Incarceration Camp. This process was inspired by work at other active heritage sites and developed in consultation with community members as a way to retain the archaeological integrity of the site while appropriately documenting resources. “Catch and release” artifact analysis mitigates the burden of long-term curation and increases community access.

Kanezaki, Yuko (University Museum, University of Tokyo), Carlos Viviano, Hironori Otani, José Onofre Mayta (Dirección Desconcentrada de Cultura de Huánuco), and Daniel Morales Chocano (Universidad Nacional Mayor de San Marcos)

[46] *Cueva de las Pirámides: New Evidence of Early Occupation in the Upper Amazon*

This presentation outlines the findings from archaeological research conducted in the Upper Amazon region of the Upper Huallaga Basin. Interregional exchanges between the Andes and the Amazon are widely recognized as pivotal in shaping Andean civilization. In the mountainous regions of the Upper Huallaga Basin, these interactions are evident as early as the Initial period, particularly through ceramics exhibiting significant Amazonian influence. However, since the pioneering work at the Cueva de las Lechuzas site (Tingo María) by Donald Lathrap and his colleagues, archaeological investigations on the rainforest side of the region have largely been inactive. Our recent excavation at Cueva de las Pirámides, located approximately 6 km from Cueva de las Lechuzas, uncovered evidence of ancient occupations spanning a long period. The 2022–2023 excavations revealed thick, coarse pottery in the upper layers, likely from the Late Prehispanic period, while the lower layers yielded finely crafted ceramics from the Initial period or Early Horizon. Beneath these, a preceramic cultural layer was identified. These findings not only contribute to refining the chronological framework of the Upper Amazon but also offer valuable insights into the historical relationships between the Andes and the Amazon.

Kansa, Eric [298] see Wells, Joshua

Kansa, Sarah Whitcher [298] see Wells, Joshua

Kaplan, Jonathan (PACTES), Carlos Flores Manzano (Yale University), Francisco Alvarado (PACTES), Marlon Escamilla (Morgan Community College), and Hugo Diaz (PACTES)

[335] *Tapalshucut: A Large, Newly Investigated Archaeological Site in Western El Salvador*

The Proyecto Comunitario Tapalshucut de El Salvador (PACTES) is documenting complex social and cultural transformations in Middle to Late Preclassic times in Western El Salvador, focusing on the hitherto almost completely uninvestigated, significantly large (core at least 1–2 k²) archaeological site of Tapalshucut, Department of Sonsonate. Lidar survey suggests similarities to the architectural plan at El Trapiche, one of several sites once probably part of a single very large site at Chalchuapa, Department of Santa Ana. Tapalshucut is also where, in 2002, the largest deposit of stone monuments known thus far in El Salvador was discovered, consisting of seven sculptures of the “Cabezas de Jaguar” (JH) sculptural complex. The late Federico Paredes Umaña proposed that a strategy of foreign elites sought to integrate ca. 3,000 k² of western El Salvador into an early state system partly through exhibitions of a triadic group of monuments, JHs, “potbellies,” and Maya-style stelae, including only the fourth known stele of Cycle 7, discovered in 2019 at El Trapiche. Guided by models of “social” or “community archaeology,” a central goal of the project is to work closely with the Indigenous community of Izalco, acknowledging their primary cultural links to the remains.

***This presentation will include images of human remains.

Karbula, James [232] see Ingalls, Victoria

Kardulias, Drosos (University of Michigan), Paul Nick Kardulias (College of Wooster), Brad Johnson (Davidson College), Neve Rauscher (Davidson College), and Noah Landau (Davidson College)

[184] *Martial Landscapes and Contextualizing the Archaeology of War with a Case Study from Kalymnos, Greece*

The Greek island of Kalymnos was an anomaly in a region devastated by the Roman-Caliphate warfare of the initial Middle Ages. Amid regional depopulation and passive resistance by flight, Kalymnos uniquely displayed active, military resistance, its population renucleating into fortified *kastra* that remained economically and politically connected with the broader Roman state for centuries. These facts play out not in formulaically assessed mortality profiles or inventories of type-such-and-such arrowheads but in the landscape of Kalymnos itself, from cliffs and ravines to indigenously designed fortifications. Archaeological interpretations of conflict often cling to analogical rubrics of unambiguous typology, presupposing violence is an aberration. A comparative archaeology of conflict must instead be based in the context of its occurrence, the titular martial landscape: a situational constellation of a given space’s traits and relations that define its effect on conflict. To demonstrate this concept, Kalymnos’s unconventional sites will be examined through repurposing landscape-archaeological methods such as catchment and viewshed, according to principles of warfare and evidence from preliminary fieldwork. Ultimately, this paper intends to demonstrate that, even lacking popular “smoking

guns,” one can develop and test precise hypotheses that define the utmost extremes of cultural activity; as archaeologists, we just need to give war a chance.

Kardulias, Drosos [184] see Bossio, Laura

Kardulias, Paul Nick [184] see Kardulias, Drosos

Karmowski, Jacek [321] see Ramsier, Marissa

Kassabaum, Megan (University of Pennsylvania)

[380] *Linking Communities in Time and Space: Mound-Building Practices in the Lower Mississippi Valley and Beyond*
Beginning around 5500 BCE and continuing through today, groups throughout the American South created their communities in part through mound building. Recent large-scale reviews of data from excavations at precontact earthen mound sites have allowed for a number of repeated practices of construction, use, modification, and abandonment to be identified and their meanings to be considered. The Mississippi Mound Trail Project (and the follow-up excavations it spawned) has provided a particularly rich dataset for the Lower Mississippi Valley. In this paper, I bring together the reports of investigations from these recent excavations in the Lower Valley with a broad review of the literature on other mound-building societies in the American South to enumerate common forms of foundation and termination deposits, as well as widespread techniques of construction and use. Looking both through time and across space, I then explore how these variable practices created and maintained different types of relationships between the human subjects that undertook them, as well as between the human actors and the structured deposits and landscapes that were being created.

Kassabaum, Megan [216] see Linn, Sarah

Kassadjikova, Kalina [297] see Beauchemin, Patience

Kassadjikova, Kalina [297] see Black, Valda

Kassebaum, Theo (University of North Carolina, Chapel Hill)

[333] *Creatures of Care: Assembling Livestock Worlds within Archaeofaunal Datasets*

This paper builds on the work of Duclos and Criado to dive into the speculative potential of a framework of care by considering how archaeological worlds are constructed through multispecies relationships in diverse and multiple ways. Speculating about care requires acknowledging relationalities across categories. This has significant implications for how multispecies relationships can be theorized in archaeofaunal datasets through the (re)interpretation of animal remains across age, sex, and species categorizations. In this paper, I will interpret faunal assemblages through a lens of “ecologies of divergence” in order to speculate on how nonhuman animals navigate pre- and postmortem pathways of care. Applying this approach to the interpretation of taxonomic frequencies and demographic profiles of livestock, this framework is used to map disparate ecologies of care across the spatiotemporal assemblages of an archaeological site in Southwest Asia, Tel Abel Beth Maacah. In this way, care will be used to consider how livestock construct vibrant more-than-human communities, while contesting an anthropocentric view of ancient urban sites.

Kater, Thiago, Fernando Ozorio De Almeida (Universidade Federal de Sergipe), and Eduardo Neves (University of São Paulo)

[172] *Emplacement and the Dynamics of Placemaking in the Teotônio Waterfall, Madeira River Basin, Amazon*

The Madeira River Basin, southwestern Amazonia, provides a unique lens to examine how places, particularly waterfalls, function as historical agents in the emplacement and transformation of human dynamics. This study utilizes the concept of “emplacement” to investigate the role of the Teotônio waterfall in shaping human activities over long periods of time. The Teotônio waterfall is surrounded by several archaeological sites, and it has historically served as a critical landmark influencing placemaking processes. The waterfall’s monumental presence appears to have exerted a significant influence on settlement patterns, ceremonial practices, and intergroup interactions. Archaeological evidence from the Teotônio site, with continuous occupation dating

back at least 7000 years cal BP, reveals a complex interplay between human activities, the waterfall, animals, and plants. While data suggest broader cultural changes in the Indigenous societies, the Teotônio waterfall seems to be an active participant in all historical processes. The falls not only served as a geographical landmark but also as a symbolic and practical focal point in the formation of Indigenous identities and regional interactions. By emphasizing the dynamic role of such geographical agents, we aim to enrich the understanding of places recontextualization and the continuous interplay between human societies and their environments.

Kaufmann, Cristian [88] see Gutierrez, Maria

Kearns, Aisling [383] see Kollmann, Dana

Keegan, Barry [391] see Kitchel, Nathaniel

Keenan Early, Erin (University of Texas, Austin), Adam Rabinowitz (University of Texas, Austin), and Timothy Shanahan (University of Texas, Austin)

[160] *Novel Application of Paleotemperature Proxy to Archaeological Context*

Isoprenoidal glycerol dialkyl glycerol tetraethers (iso-GDGTs) and branched GDGTs (brGDGTs) are lipid biomarkers that serve as paleotemperature proxies reflective of mean annual average temperature (MAAT) commonly used in paleoclimate reconstructions. GDGTs are found in marine and lacustrine sediments, soils, peats, speleothems, and bone. In general, isoGDGTs are used in marine analyses and brGDGTs are used in terrestrial analyses, but neither has been meaningfully applied to archaeological contexts and the value of such an application is unknown. In an effort to explore the applicability of GDGT analysis to archaeology, we extracted GDGTs from soil and bone samples from a necropolis spanning several centuries during the Roman period at the site of Histria in Romania. Soil samples were taken from within cist tombs and were representative of various depositional and decomposition environments. Bones were sampled from different individuals recovered from both cist tombs and earthen graves to determine whether burial type impacts the production of the GDGT signal. Analysis indicates that while isoGDGT-derived temperatures provide a stable MAAT record, brGDGT-derived temperatures exhibit fluctuations that may reflect the intrusion of soil resulting from successive reopenings of the tomb to inter new individuals.

Keenan Early, Erin [215] see Fleming, Elijah

Keene, Josh [369] see Kibler, Karl

Kehoe, Alice

[377] *The 1950s, Postwar Resumption and Reconsiderations*

World War II disrupted archaeology, with SAA members in uniform and travel restricted. Members resuming their careers in the late 1940s faced a more egalitarian America as thousands of men from uneducated families entered colleges on the GI Bill. Radiocarbon dating superseded stratigraphy as the standard dating method, with 1950 set as “the Present.” “Science,” touted as means toward safe and prosperous lives, became more prominent academically, to the detriment of humanities (the “two cultures” debates). SAA leaders responded with four formal seminars in 1955, funded by the Carnegie Corporation, where 27 invited archaeologists discussed terminologies and also how American archaeology related with anthropology. These marked a break in the older concept that archaeology reveals culture histories; they also marked, as the convener wrote, an innovation for theory conferences rather than simply “more money to dig.” The 1950s were also the decade that the River Basin Surveys became prominent, employing a considerable number of archaeologists and student crews. Overall, the 1950s was a decade of adjustments during which theory became more accepted for discussion, while much more money was available to dig.

Keller, Hannah (Yale University), Ellery Frahm (Yale University), and Jessica Thompson (Yale University)

[235] *The Outcomes of Repeated Hearth Use on Ostrich Eggshell*

Human activities can postdepositionally modify accumulations of material, including ostrich eggshell (OES).

While research has demonstrated that heat modifies OES appearances and surfaces, it is unclear how multiple ignition events and the repeated heating/cooling cycle may have a cumulative effect. Identifying how repeated use of hearths or sites produces an exaggerated burning effect on the ostrich eggshell offers insight to site formation processes, human behavior, and intentionality. We used both a laboratory furnace and ground fire to test this hypothesis. We repeatedly heated fragments to equivalent or higher temperatures between 200°C and 500°C in the furnace and exposed four sets of fragments in a firepit to 5–20 combustion events. We found a cumulative effect on OES fragments exposed to similar temperatures when the temperature is around 350°C. Moreover, exposure to more intense heat overwrote the initial heating signature. This suggests that the appearance of the OES is not only consistent with the highest temperature to which it was exposed but may be a product of multiple heating events.

Kelley, Alice [123] see Hoover, Kelly

Kellner, Corina [159] see Poirier, Marcela

Kelly, Cannon [128] see Graham, Caroline

Kelly, Cannon [128] see Sathiakumar, Abhishek

Kelly, Lucretia [314] see Henry, Edward

Kelly, Mary Kate

[64] *Maya History in 3D*

The ancient Maya recorded their history on carved and painted hieroglyphic inscriptions, many of which are preserved in the archaeological record. While recent decipherments have made much of this history known to the scholarly community, modern Maya peoples are often excluded from rewriting this history from their invaluable perspective. This project initiates collaborative efforts with a Maya heritage community to co-create a history of Waka', an archaeological site in northern Guatemala. At the close of this project's first year, 3D prints of two carved artifacts will be given to the heritage community: a jade pectoral depicting the face of a king and a stela detailing history from the early fifth century AD. These prints will be integrated with a website housing information about the artifacts. Long-term possibilities for collaboration to be discussed with the community include creating more 3D prints and incorporating them into the website, audio and video interviews to discuss the monuments and archaeology with heritage community members, and a possible future site museum. This project aims to bridge academic and Indigenous knowledge systems, focusing on decolonizing our relationship to Maya history and opening a dialogue with the living Maya to enrich our understanding of the past.

Kelly, Robert (University of Wyoming), and Lawrence Todd (GRSLE Inc.)

[280] *Coming into the Country, 37 Years Later: Did We Get It Right? (Maybe not entirely.) Did We Do Something Useful? (Probably.)*

The timing and nature of terminal Pleistocene colonization of the Western Hemisphere is central to the career of David Meltzer. In 1988, as young, wet-behind-the-ears professionals, we presented a narrative model to explain several facets of early Paleoindian archaeology: the nature of faunal processing, the association with megafauna, the stone tool technology, the lack of use of caves/rockshelters, the lack of plants in the diet, the small site phenomena, and the apparent rapidity of movement across the North American continent. Meltzer has critiqued this model several times. Considering those critiques, did we get it right? And, if we didn't, did we do anything useful?

Kelly, Robert [57] see Mackie, Madeline

Kemp, Leonard [300] see Wigley, Sarah

Kemp, Olivia [336] see Coble, Shawn

Kenia Chacón, Cesia Isamar H. Flores [26] see Miller Wolf, Katie

Kennedy, John [179] see Kinneer, Christopher

Kennedy, Ryan (Indiana University), Eric Guiry (Trent University), Nabil Kahouadji (Northeastern Illinois University), Hayden Bernard (Indiana University, Bloomington), and Amelia Fahl (Indiana University, Bloomington)

[288] *Biomolecular and Zooarchaeological Insights into Human-Turtle Interactions in Historical New Orleans, Louisiana*

Turtle soup is a dish synonymous with New Orleans' cuisine, and its deep history is enshrined in historical cookbooks, newspapers, and restaurant menus. However, despite its cultural and historical importance in New Orleans and other areas of the United States, turtle soup, and the turtles from which it is made, remain largely unstudied by archaeologists. In this paper, we present a comprehensive analysis of turtle remains from over 10 eighteenth- and nineteenth-century archaeological sites in New Orleans, with an eye toward identifying trends in historical taste preferences, turtle harvesting strategies, and human impacts to historical turtle populations. To this end, we present taxonomic identifications from zooarchaeology and Zooarchaeology by Mass Spectrometry (ZooMS); carbon, nitrogen, and sulfur stable isotope compositions; and turtle size estimations produced via linear regression models to trace long-term continuity and change in turtle use and turtle historical ecology over 200 years of New Orleans' history. Ultimately, we aim to demonstrate how biomolecular approaches are critical to teasing out past human-turtle relationships, including by revealing long-term trends in turtle ecology that are not detectable with zooarchaeological data alone.

Kennedy, Ryan [87] see Bernard, Hayden

Kennedy, Sarah, Karen Durand Caceres (UYWA ZooLab), Sarah Baitzel (Washington University, St. Louis), and Arturo Rivera I. (Washington University, St. Louis)

[182] *Changing Food Practices of Post-Tiwanaku Agropastoral Communities at Los Batanes (Sama Valley, Peru)*

Following the collapse of the Tiwanaku state in the eleventh century CE, some Tiwanaku-affiliated communities moved to the coastal valleys of southern Peru to establish new settlements. While not much is known about this period immediately following political collapse, coastal migrants adapted to the temperate climate and hyperarid environment by adopting a mixed subsistence of maize-based farming, gathering marine resources, and pasturing their llamas and alpacas. To understand more about how diasporic communities respond to crisis and collapse, especially in agropastoral societies, we conducted zooarchaeological analysis of animal remains recovered from multiple domestic archaeological contexts from the site of Los Batanes in the Sama Valley. The site, situated at the boundary between the Andean cordillera and coastal plain, is located in a desert oasis that offers seasonal and perennial sustenance for humans and camelids. Our zooarchaeological analysis sheds light on changing diet, subsistence, and economic pursuits of Tiwanaku-descendant migrants on the coast, as well as elucidates information on shifting identities and daily routines of people living post-collapse. Specifically, we explore how a diasporic agropastoral community negotiated its highland practices and identities within new environments and a rapidly changing sociopolitical landscape.

Kennedy, Sarah [226] see Kucur, Ezra

Kennett, Douglas [235] see Domic, Alejandra

Kennett, Douglas [387] see George, Richard

Kennett, Douglas [301] see Kracht, Emily

Kent, Jonathan [336] see Cook, Paris

Kepka, Jessica (Burns & McDonnell), Victoria Shaw (Burns & McDonnell), and Shelby Stahlhood (Burns & McDonnell)

[94] *Lost My Dentures! Material Culture of the Urban Poor in Kansas City's Northwest Neighborhood at the Turn of the Twentieth Century*

Data recovery excavations for Missouri Department of Transportation's Broadway / Buck O'Neil Bridge Replacement Project, situated in downtown Kansas City, provided a rare glimpse into the material culture of marginalized populations in the city during the late 1800s and early 1900s. Site 23JA1856 was the location of a boarding house in a low-income portion of the city. Site 23JA1857 was a residence at the edge of the red-light district. The artifacts recovered from the excavations provide an exciting opportunity to better understand the consumer behaviors and preferences of the urban poor in Kansas City at the time.

Kerns, Christopher (TMHC)

[350] *Building a Portal to the Past: Practicing Archaeology in the Present for the Future*
[WITHDRAWN]

Kessler, Nicholas (University of Arizona)

[110] *Challenging Colonial Biases in Archaeological Site Chronologies with Tree-Ring Radiocarbon Dating*
American archaeologists have frequently relied on Euro-American documents, accounts, and material goods to construct timelines for Indigenous sites in the colonial and contact eras. While the temporal precision of manufactured goods and written accounts are attractive to archaeologists, these sources may flatten the complexity of occupations and introduce bias in our reconstructions. We use case studies to highlight problems with inherited site chronologies based solely on non-Native records and illustrate how independent dating of archaeological structures can support the construction of hybrid and inclusive narratives. This paper argues that high-precision independent archaeological chronometry helps move past top-down colonial perspectives on the archaeological record.

Kessler, Nicholas [50] see Holland-Lulewicz, Jacob

Kessler, Nicholas [375] see Larrick, Dakota

Kestle, Caleb (UIC), Kendall Hills, David Reid (University of Illinois, Chicago), Elizabeth Goodman (University of Illinois, Chicago), and John Monaghan (University of Illinois, Chicago)

[379] *Looting and Salvage: A Typological Distinction*

Here we take the position that the systematic destruction of archaeological sites, often referred to as looting, should be understood not only as a site formation process that obscures the object of archaeological analysis but also as an archaeological behavior that can elucidate the social conditions of past peoples. Here we propose a modest typology that centers the goals of looters and demonstrates that the strategies each of these goals entail produce distinct archaeological signatures. Within our typology, we propose the following distinction: *Looting*, the destruction of the site for objects that derive value from historicity; *Salvage*, the destruction of a site for raw materials; *Scavenging*, opportunistic removal of already disturbed materials; and *Destruction*, the intentional erasure of a site. Here we hope to demonstrate how the intentions of the looter can be reconstructed in part by the clear material signatures of the different types of looting, and through this discussion, provide tools for any who are interested in reframing the recent depositional history of archaeological sites as an object of analysis.

Keyes, Cassandra (US Forest Service)

[98] *Stemmed Points of the Southwest*

Recent research into the Archaic period in the North American Southwest (8000–1500 BP) has expanded our knowledge of the preceramic period, yet the origins and technological implications of long-tapering stemmed points of the Early Archaic remain enigmatic across the region. Historically, the debate in the Southwest has revolved around whether these points represent groups adopting a subsistence economy focused on a big game hunting strategy closely tied to the Late Paleoindian groups of the Plains, or alternatively, that these points represent the earliest manifestation of a “broad-spectrum” Archaic adaptation in the region with affiliations to the Western Stemmed Tradition (WST). Through a morphometric comparison of a large assemblage of tapering stemmed points from the Tularosa Basin of New Mexico with Hell Gap points from the Great Plains and WST points from the eastern Great Basin, it is suggested that the New Mexico assemblage more closely resembles WST points and may represent the arrival of a “broad spectrum” subsistence adaptation during this period. This work has important implications for the

understanding of stemmed points in the Southwest, particularly Jay points of the Oshara Tradition, and the rarely considered interaction between the Great Basin and Southwest.

Keyser, James (Oregon Archaeological Society)

[334] *Montana's Early Hunters: Two Types of Atlatls in the Vissotzky Petroglyphs*

The Vissotzky petroglyphs are located in the northern Rocky Mountains of western Montana. During our 2023 recording project we documented more than 300 representational petroglyphs at the site, but the most unexpected finds were a dozen atlatls, demonstrating that the petroglyphs are at least 2,000 years old. The weapons occur as two types, one identifiable as the Quiltanton Lake type atlatl, named after the type site in British Columbia, and the other a variant of the Basketmaker type atlatl, commonly found throughout the Great Basin and Southwest from Oregon to New Mexico. Projectile point images associated with the Quiltanton Lake atlatls are basally notched dart points typical of the northwestern Plains Pelican Lake type, while one associated with a Basketmaker type atlatl is an earlier lanceolate type point.

Khaksar, Somaye, Jennifer French (University of Liverpool), and Marc Kissel

[42] *Exploring the Intersection of Ethnography and Technology: Understanding the Evolution of Human Technologies through Ethnographic Research: An Introduction*

Ethnographic research has profoundly enriched our understanding of the evolution of human material culture and technology. This symposium assembles a series of studies that delve into the intricate interplay between ethnography and the archaeological study of human technology, underscoring the potential of ethnographic insights to reveal the invisible characteristics of the archaeological record. These studies illustrate how ethnography can be instrumental in formulating hypotheses about past technologies and the less tangible aspects of technological development. Furthermore, this symposium seeks to emphasize the critical role of ethnography in employing an integrative evolutionary approach to human culture. We delve into ethnographic cases that demonstrate how this line of research can either guide or challenge our interpretations of various technologies, spanning from the Paleolithic era to the Maya civilization and North American Indigenous cultures, as well as our broader understanding of past human behavior.

Khan, Faizan (Lipscomb University)

[324] *Neighborhood Patterns in Maya Lowlands: A Comparison of Structures and Resource Areas*

This study examines the intricate suburban landscape of the Maya civilization, focusing on neighborhood patterns by comparing structures and resource areas. The research takes place around the ancient Maya city of La Milpa in Belize and relies on a lidar survey for identifying features (such as structures and resource areas) and subsequent analysis through GIS. The aim is to investigate whether there is sufficient evidence to support the idea that Maya settlements in the lowlands were intentionally organized as distinct neighborhoods. This is done by finding correlations between structures and resource areas that may have served multiple purposes, including water storage.

Kharbush, Jenan [288] see Tomazic, Iride

Khatsenovich, Arina (Siberian Branch of Russian Academy of Science), Evgeny Rybin (Siberian Branch of Russian Academy of Science), Junyi Ge (Chinese Academy of Science), Byambaa Gunchinsuren (Mongolian Academy of Sciences), and John Olsen (University of Arizona, Tucson)

[332] *Middle Paleolithic Industries of Mongolia: Chronology and Technological Variability*

The Middle Paleolithic is represented mainly by its final stage in Mongolia, and chronologically overlaps with the appearance of Initial Upper Paleolithic large blade technology in the region. Although human fossils associated with archaeological remains have not yet been found in Mongolia, presumably several human populations bearing different cultural traditions occupied this area between 50 and 40 ka cal BP. In 2018–2020 we generated new OSL and radiocarbon dates for Middle-Upper Paleolithic sequences at open-air and cave sites in central and southern Mongolia. These dates and associated archaeological material revealed the relatively late existence of Middle Paleolithic industries there. Earlier Middle Paleolithic stages are known from Tsagaan Agui Cave in the Gobi Desert. Here, we present a chronological model and outline

technological variability in Middle Paleolithic industries that indicate increasing cultural heterogeneity in Mongolia. These industries exhibit persistent conservative traits, including use of Levallois technology and expedient flaking throughout the Middle Paleolithic, and they reflect fewer technological innovations than contemporary complexes in the neighboring Altai Mountains of southern Siberia. This study was supported by RSF grant #24-48-03020.

Khemka, Aadya (Carnegie Mellon University)

[241] *Constructing Local Identity through the Lens of Archaeological Knowledge: A Case Study on the Black Sea, Sozopol, Bulgaria*

This part of the presentation explores the dynamic relationship between the ancient Greek colonial site of Apollonia Pontica, founded in the seventh century BCE on the Black Sea, and the modern town of Sozopol, Bulgaria. Apollonia Pontica was a significant trading and cultural hub in the ancient world, renowned for its large bronze statue of Apollo and strategic maritime location. Today, its archaeological remnants are deeply ingrained into Sozopol's identity, as local heritage sites and museum collections preserve and present its legacy. This research project will further examine how archaeological knowledge from Apollonia Pontica has been incorporated into local lore, contributing to modern Bulgarian identity. By exploring local interactions with the ongoing excavation, this project not only highlights the role of archaeological knowledge but how it shapes contemporary narratives of modern identity. This study is part of the broader discussion on community-based research, advocating for a slow science approach to archaeology that emphasizes ethical collaboration with local communities. The case of Apollonia Pontica exemplifies the importance of involving local stakeholders, like the museum in Sozopol, ensuring that archaeological knowledge is not only preserved but also accessible and relevant to those who live alongside the remnants of ancient civilizations.

Khune, Steve [281] see Ziani, Ismail

Kibler, Karl (Cross Timbers Geoarcheological Services), Ken Lawrence (SWCA), Ashley Eyeington (SWCA), and Josh Keene (SWCA)

[369] *Late Quaternary Alluvial Stratigraphy, Soils, Paleoenvironments, and the Archaeological Record of the North Sulphur River Floodplain, Fannin County, Texas, USA*

Ongoing geoarchaeological investigations of the North Sulphur River floodplain, in association with the construction of the Lake Ralph Hall reservoir in Fannin County, Texas, USA, have revealed a 20,000-year-plus record of alluvial aggradation punctuated by periods of floodplain stability and pedogenesis. In this paper we present our findings to date on the alluvial stratigraphy, soils, paleoenvironments, and the associated multicomponent cultural sequence of the North Sulphur River floodplain.

Kida, Risako [82] see Kadowaki, Seiji

Kidwell, Jasmine (Baylor University), Julie Hoggarth (Baylor University), William Hockaday (Baylor University), Bryon Schroeder (Center for Big Bend Studies, Sul Ross State University), and Erika Blecha (University of Kansas)

[128] *Molecular Geoarchaeology and the Sedimentary Archives of Far West Texas: Human Demographics, Hydroclimate, and Paleoecology from the Late Pleistocene through Holocene*

The region of far west Texas remains understudied in terms of its cultural, climatic, and environmental past. Current paleoclimatological and environmental proxy datasets are few and inconsistent in time, resolution, and scope. Using sedimentary archives from cave, playa, and ciénega deposits, we use molecular geoarchaeological techniques paired with radiocarbon summed probability distributions to reconstruct human demographics, hydroclimate, and paleoecology of this region while generating new proxy datasets. This work focuses on recovery of molecular fossil lipids, or biomarkers, preserved in sediments. These biomarkers help to contextualize the environment and record information that may not be preserved in pollen or other records. From the sediments, the preserved lipids were extracted and their n-alkanes quantified and characterized using GC-MS for ecological reconstruction. Ongoing work will use compound specific isotopic analysis of the $\delta^{13}\text{C}$ and δD of targeted n-alkanes identified during GC-MS analysis. Together, these dataset the stage for contextualizing human behavior and demographic variability from the Late

Pleistocene through the Holocene with the goal to better understand how the earliest occupants of far west Texas responded to long-term climatological and ecological change. This poster describes the progress made, lessons learned, and direction of ongoing work.

Kienon-Kabore, Timpoko Hélène (University of Félix Houphouët-Boigny of Cocody), and Brou Edivet Senen Blédou (Université Félix Houphouët-Boigny; Ecole Doctorale SCALL)

[229] *Preventive Archaeology in Côte d'Ivoire: A Shield for Cultural Heritage Preservation in the Face of Development Challenges*

Land-use activities, notably mining and major construction projects such as the building of road infrastructure, have multiplied in recent decades in Côte d'Ivoire. Most of these activities have significantly impacted the environment as a whole, leading to soil disturbances that have resulted in the destruction of buried archaeological sites and remains. The appointment in 2016 of a technical advisor responsible for archaeological heritage at the Ministry of Culture and Francophonie in Côte d'Ivoire provided a significant boost to the governance of archaeological heritage. Several advances have been made, particularly in the application of preventive archaeology. In 2019, during an archaeological impact assessment, the Ministry of Culture and Francophonie secured the signing of the first public-private partnership agreement for the study and protection of archaeological heritage affected by the Singrobo-Ahouaty hydroelectric dam project. This led to several archaeological missions in this area, which played an important role in the protection of the region's archaeological heritage. The enactment of the June 7, 2023, law on the protection of national cultural heritage offers new hope for the preservation of archaeological heritage in Côte d'Ivoire. It indeed places significant emphasis on the governance of archaeological heritage, particularly on preventive archaeology.

Kiernicki, Lydia (University of Central Florida), and Neil Duncan (University of Central Florida)

[58] *A Temporal and Spatial Analysis of the Preservation of Macrobotanical Remains at the Penny Site in Cape Canaveral, Florida*

The Cape Canaveral Archaeological Mitigation Project (CCAMP) is an ongoing collaboration between archaeology faculty and students at the University of Central Florida and personnel at Space Launch Delta 45 at the Cape Canaveral Space Force Station. Phase II excavations at the Penny Site (8BR158) of late precolonial contexts provides the opportunity for advances within paleoethnobotanical analysis along the east-central Florida coast. Previous paleoethnobotanical analysis of micro remains, starches, and phytoliths at the Penny Site has identified a variety of food plants, including greenbrier (*Smilax* sp.), maize (*Zea mays*), bean (*Phaseolus vulgaris*), and acorn (*Quercus* sp.). This study focuses on macro botanical remains collected through soil flotation of features and stratigraphic column samples to investigate further plant use at this site. Through statistical analyses, spatial and temporal patterns of plant remains will be uncovered and will be used to assess the distribution, preservation, and cultural use of plants at the site. This study will enhance our understanding of preservation of plant remains in coastal Florida contexts and better our understanding of footways that made up the subsistence practices of Indigenous populations that occupied Cape Canaveral.

Kievman, Hayley (University of Utah), Gregory Burns (University of Utah; National Park Service), and Alexandra Greenwald (University of Utah)

[126] *Reevaluating the Dietary Significance of Gambel Oak Acorns (*Quercus gambelii*) in the Great Basin, Colorado Plateau, and Southwest: Evidence from Experimental Foraging, Direct Bomb Calorimetry, and Tannin Extraction*

Ethnographic evidence documents the exploitation of Gambel oak (*Quercus gambelii*) acorns as a food resource in the Great Basin, Southwest, and Colorado Plateau. However, a paucity of identified macro- and microbotanical acorn remains in the archaeological record has resulted in a critical underestimation of the significance of the resource for Indigenous groups in these regions. This poster reports data from 18 hours of experimental Gambel oak acorn foraging, direct bomb calorimetry, and tannin extraction, to evaluate whether Gambel oak acorns would have been profitable for Holocene foragers and incipient maize agriculturalists. Results show that Gambel oak acorns have a low tannin concentration and return a substantial amount of calories at 5,711.12 kcal per hour foraging. The high caloric returns combined with potentially low handling costs associated with decreased tannin content suggest that Gambel oak acorns were likely a significant resource for early and middle Holocene hunter-gatherers and an important fallback resource for late Holocene maize agriculturalists in the region.

Kievman, Hayley [126] see Dodge, Sophia
 Kievman, Hayley [126] see Greenwald, Alexandra

Kiker, Summer

[225] *Applying Digital Archaeology to Education and Heritage Management at Cahal Pech, Belize*

Since the early 2000s, the Belize Institute of Archaeology has been expending considerable effort to enhance the tourism potential of its archaeological sites, to contribute to heritage education in rural areas of the country, and to provide information that can be used by tourism stakeholders. To assist these Belizean initiatives, archaeologists from Northern Arizona University have been collaborating with Belize Institute of Archaeology personnel to develop programs and materials that contribute to heritage education and the preservation of archaeological sites. In this poster, we demonstrate some of the results of our educational outreach programs, cultural heritage management initiatives, and efforts to increase public access to archaeological information. By using photogrammetry, spatial data, and images of cultural remains from the ancient Maya site of Cahal Pech, Belize, this poster showcases educational materials such as story maps, 3-Dimensional models/ photographs, and a site guide for use by schools, tourism institutions, and other Belizean stakeholders.

Kilby, David (Texas State University), Briggs Buchanan (University of Tulsa), Marcus Hamilton (University of Texas, San Antonio), Christopher Merriman (Adams State University), and Susan Ruth (Central New Mexico Community College)

[57] *Bruce Huckell and the Paleoindian Record of the West Mesa, New Mexico*

The West Mesa is an expansive eolian plain atop a basalt-capped terrace of the Rio Grande in central New Mexico. Seminal work carried out in the 1960s–1970s led to the identification of an abundant Paleoindian record, and the Rio Rancho site became the first Folsom camp to be excavated in the Middle Rio Grande Valley. The West Mesa received little further attention until Bruce Huckell of the University of New Mexico initiated a program of renewed investigation. Dr. Huckell undertook new excavations at Rio Rancho in the late 1990s. In the years that followed he enlisted students and volunteers to carry out archaeological survey as well as excavations at newly discovered Folsom sites such as Boca Negra Wash, Deann's site, and others. A collaborative relationship with Vance Holliday of the University of Arizona focused on the geoarchaeological context of these sites. In addition to training a generation of future archaeologists, Bruce's approach to the archaeology of the West Mesa demonstrated the information and interpretative potential of these relatively shallow and poorly preserved sites. This paper reviews the history of Bruce's work on the West Mesa and what we have learned from the investigation of this important Southwest Paleoindian record.

Kilby, David [57] see Hamilton, Marcus
 Kilby, David [98] see Smallwood, Ashley

Killick, David (University of Arizona)

[49] *Fifty Years of North America Archaeometallurgy in 15 Minutes*

From about 1973 through the early 1990s the University of Pennsylvania group of Maddin, Muhly, Pigott, and Stech were among the world leaders in archaeometallurgy. In this presentation I try to situate their work within a brief history of his topic in North America. With two notable exceptions (the consultant William Rostoker and the archaeologist Izumi Shimada), archaeometallurgy in North America nucleated around a few interested faculty in materials science departments. Two distinctive features of North American archaeometallurgy have been (1) a productive alliance between materials science and anthropology and (2) pioneering work in regions like Latin America, sub-Saharan Africa, and South-East Asia that were then ignored by European archaeometallurgists. Unfortunately, academic anthropology departments in North America never showed much interest, a neglect that I attribute largely to the scarcity of metals in the North American archaeological record before AD 1500. Very few of the authors of the many excellent PhD dissertations in archaeometallurgy ever found academic jobs, and the materials scientists who did such stellar work were almost never replaced with like-minded scientists. Archaeometallurgy is now almost extinct in North America, in sharp contrast to Europe.

Killick, David [374] see Rizzuto, Branden

Kim, Nam [184] see Kissel, Marc

Kimbell, Bennett [125] see Kimbell, Jennifer

Kimbell, Jennifer (Terracon), and Bennett Kimbell (Stantec)

[125] *Presidios of the 1772 Line and Lafora's 1771 Model: A Case Study in Combining Historical Documents, Archaeological Data, and Digital 3D Mapping*

The rediscovery of a 1771 model plan by the Spanish military engineer Nicolás de Lafora for the building of presidio fortifications provides an important link between the Regulations of 1772 and presidios built after that date. The plan is the only known document that presents a visual representation of the new Spanish design for fortifications in the region and was issued to presidio captains with the regulations, providing the first attempt to standardize presidio architecture in the Interior Provinces of New Spain. This poster will present a GIS model that combines the historical document, digital mapping techniques such as lidar and 3D modeling, and the mapping from archaeological investigations at Presidio de Santa Cruz de Terrenate in the present state of Arizona, USA; Presidio de San Carlos, in the present state of Chihuahua, Mexico; and Presidio de San Sabá (Presidio de San Vicente), in the present state of Coahuila, Mexico, to understand how Lafora's plan was modified to fit these specific locations. The poster will also showcase how these mapping techniques can assist in the archaeological interpretation of post-1772 presidios.

King, Adam (SCIAA), Terry Powis (Kennesaw State University), and Claire Lanaud (CIRAD, AGAP Institut)

[58] *How Did Chocolate Get to Etowah?*

The history of chocolate consumption in South and Central America is well known and is captured nicely in archaeological data, Indigenous imagery and text, and European historical accounts. The possibility that it was consumed in what is now the United States has long seemed remote because cacao trees only grow in tropical settings. That changed with Crown et al.'s discovery of chocolate residues in distinct beaker vessels recovered from Chaco Canyon. There is ample archaeological evidence for connections between Ancestral Pueblo people, including those living in Chaco Canyon, and regions of Central America, so the discovery of chocolate is supported by other data. Recently, Lanaud and colleagues recovered ancient chocolate DNA from pottery recovered from the Mississippian period Etowah site located in the modern state of Georgia. The reality that Etowah's inhabitants consumed chocolate is supported by an absorbed residue study conducted on the same sherds sampled by Lanaud et al. where key compounds found in chocolate were detected using mass spectrometry. In this paper we explore the possible sources of the chocolate consumed at Etowah, which range from independent contacts with Central America, to connections with Ancestral Pueblo people, and even interactions with people in the Caribbean.

King, Eleanor (Howard University)

[52] *Criss-Crossing Paths with Fred: Settlement and Subsistence from Colha to Maax Na*

Despite working in large prehispanic Maya city centers such as Rio Azul, Fred Valdez to this day maintains that his strongest interest lies in small Maya communities and households. He is happiest when exploring how the average Maya lived, away from the pomp and circumstance of the ruling classes. My interests parallel his and our research has often dovetailed and intersected, from Colha, where we first worked together, to the Programme for Belize (Pfb), where I now direct a project under his aegis. This paper explores settlement and subsistence practices in both locations, with a special focus in the Pfb on Maax Na, a large city, and Bolsa Verde, its much smaller neighbor. It will compare and contrast the different ways people inhabited and used their landscape and their different methods of making a living at those sites. It will revisit past discoveries and present them in the light of current knowledge about the Maya. Both Colha and the sites in the Pfb, including the two named, have contributed significantly to our twenty-first-century view of the Maya. The paper will therefore also review past theories and the contributions work in these places, notably Fred's, made to our current models.

King, Farina [346] see Pitblado, Bonnie

King, Marissa

[372] *Bison Leap Lore: Layered Landscapes and Legacies—A GIS Investigation of the Owl Cave Early Holocene Bison Jump in Southern Idaho*

Although the evidence suggests bison were consistently taken by indigenous hunters on the eastern Snake River Plain throughout the Holocene, quantitative faunal analyses indicate that bison were taken in modest numbers. Contrasting this pattern, the Owl Cave assemblage, dated at 9020 cal BP, represents a concentrated bison bone bed. This accumulation is indicative of a highly organized, communal procurement event, positioning the site among the earliest known instances of mass bison kill via a bison jump in North America. A detailed reevaluation of the original research at Owl Cave, juxtaposed with ethnographic and regional archaeological evidence and integration of GIS technology, suggests a systematic approach to a communal hunt. Using tools available in GIS, least-cost pathways are calculated to identify potential natural drive lanes and viewshed analyses are conducted to simulate the bison's point of view. Paleoenvironmental conditions during the early Holocene (including the presence of a pluvial lake complex), unique topographic features, and high bison population densities, likely prompted hunters to communally hunt. The implications of a mass kill event using a bison jump is significant, informing on the adaptive strategies of early Holocene hunter-gatherers, bison herd dynamics, and biogeographical distribution, as well as paleoenvironmental reconstructions of the region.

King, Roslynn [292] see Gusick, Amy

Kingery, Adam (Trinity University), Jennifer Mathews (Trinity University), Joseph Lambert (Trinity University), and Kristy Trevino (Trinity University)

[223] *Treasure from Trash: XRF Analysis of Nineteenth- and Early Twentieth-Century Metal Artifacts from San Antonio, Texas*

Before Trinity University, a small liberal arts campus of approximately 2,700 students, moved to its present location in San Antonio, Texas, the land was used as a limestone quarry, a low-income informal housing site, and a municipal trash dump site in the late nineteenth and early twentieth centuries. When the university purchased the land in the 1940s and subsequently built its present campus, it prohibited dumping and capped the site with soil. However, materials from this site have been unearthed through erosion, and are being studied by an ongoing undergraduate archaeology research project. This poster will present research on metal artifacts recovered from the site. Using X-ray fluorescence (XRF), a nondestructive analytical technique, a large sample of the recovered metal artifacts was analyzed to determine their elemental composition. In addition, electrolysis was used to remove rust and preserve artifacts for better visual analysis, including manufacturing labels. This information was then cross-referenced with archive materials, historical newspaper articles and advertisements, and patents to determine the uses and histories of the metal artifacts. In doing so, this analysis reveals information about the infrastructure, manufacturing, development, and sanitation of San Antonio in the late nineteenth and early twentieth centuries.

Kinkella, Andrew (Moorpark College)

[41] *Recording the Cave of the Black Mirror: Underwater Cenote Research at the Cara Blanca Pools, Belize*

This research focuses on ancient Maya settlement at the Cara Blanca Pools, a string of 25 freshwater cenotes and lakes located in west-central Belize. Pool I has been the most extensively explored, with a depth of 235 feet and a geological makeup where the pool extends deep underneath the surrounding cliffs, becoming an underwater cave. The underwater cave component is named "Actun Ek Nen," which translates to "Black Mirror Cave" in the Mayan language. Underwater exploration, methodology, and archaeological finds will be discussed, including Maya ceramic sherds and the remains of a giant sloth. Maya settlement immediately surrounding the pool will also be discussed, as these structures indicate the pool was used as a pilgrimage center and sacred location for water ritual during the Late and Terminal Classic period of ancient Maya society (AD 600–925).

Kinkopf, Katherine, and Laurie Wilkie (University of California, Berkeley)

[343] *Taking Specimens and Giving "Care": The Curative Violence of Army Medicine and Anatomical Collecting in Nineteenth-Century West Texas*

Bioarchaeologists have framed care as a largely positive, altruistic, and compassionate act of service given to chronically ill and disabled people. Medical interventions, especially surgical ones, often have lifelong consequences for people who survive them. This paper draws on critical disability studies' concept of "curative violence" to understand how medicine, eugenics, and racial science in the nineteenth-century United States became entwined and materialized in the creation of anatomical collections. US Army medical officers exploited the *curative violence* of surgical procedures such as amputation as an opportunity to strategically collect skeletal remains to enhance their own authority on the body. Examining case studies of men whose bodies and lives were shaped by the curative violence of Army medicine in the 1870s, through museum acquisition and archival records, we find that disabled and chronically ill infantrymen and cavalrymen were both vulnerable to and targeted by US Army medical officers for the collection and creation of "pathological specimens." Documenting pathology in anatomical collections served as a justification for eugenic and racial science projects. Through this critical examination of care and its necropolitics, we suggest alternative ways bioarchaeologists may engage with notions of care and healthcare in the past. *****This presentation will include images of human remains.**

Kinneer, Christopher (Centennial Archaeology), Benjamin Perlmutter (Centennial Archaeology), Travis Bugg (Centennial Archaeology), Kristin Gensmer (Centennial Archaeology), and John Kennedy (Centennial Archaeology)

[179] *Are We There Yet? Travel Corridors, Prehistoric Rest Stops, and the Twin Tunnels Site (5CC389)*

In 2023 Centennial Archaeology conducted data recovery excavation at the Twin Tunnels Site (5CC389) on the north side of I-70 overlooking Clear Creek. The site occupies a transitional environmental zone between the plains to the east and the high country to the west. The excavation produced a diverse assemblage of lithics, projectile points, ceramics, thermal features, and faunal remains. Radiocarbon dates and diagnostic artifacts reflect repeated occupations from the Early Archaic through the Late Prehistoric periods. However, the archaeological signature of the site is less robust than other residential sites excavated along the Front Range and in the high country. This relatively low artifact density, along with the location of the site in a narrow section of the Clear Creek valley, which forms a natural travel corridor from the Plains to the Mountains, suggests that 5CC389 primarily functioned as a prehistoric "rest stop" for groups traveling between low and high elevation environments. This pattern, which persisted for millennia, is reflective of larger systems of regional settlement and landscape use.

Kinsinger, Emma (Indiana University of Pennsylvania)

[128] *From Quarry to Village: Lithic Resource Exploitation in Monongahela Cultural Tradition Johnston Phase Sites*

The Monongahela Cultural Tradition (MCT) is a Late Prehistoric cultural manifestation represented by over 400 sites occupying present-day western Pennsylvania, eastern Ohio, and northern West Virginia from approximately AD 1050 to 1650. Despite the widespread regional and temporal scope, much remains to be understood about this cultural tradition, including village organization and growth through time, regional trade networks, and cultural amalgamation and interaction with other cultural traditions. The purpose of this research is to investigate lithic resource utilization in Middle Monongahela (AD 1250–1590) Johnston phase sites. Previous investigations conducted on lithic assemblages from two Johnston phase sites, Squirrel Hill and Johnston, revealed a much higher than predicted amount of a nonlocal material at Squirrel Hill when compared to the expected percentages of local material from the Johnston assemblage. This research will analyze the lithic assemblages of two additional sites in the Johnston phase core area. The objectives of this analysis include (1) identifying raw materials within the additional site assemblages; (2) comparing these two site assemblages to the lithic assemblages from Squirrel Hill and Johnston; and (3) determining implications of the analyzed lithic sources related to mobility, trade, and social stratification.

Kintigh, Keith [385] see Bocinsky, Kyle

Kirch, Patrick [121] see Hogg, Nicholas

Kirk, Scott (Auxilio Management Services; University of New Mexico), William Balco Jr. (University of Wisconsin, Milwaukee), and Andrew Saleh (UWM-CRM)

[122] *All along the Watchtower: A Spatial Analysis of the Defensive Network of Coastal Towers in Early Modern Sicily*

Sicily holds a strategic position between the eastern and western Mediterranean. Fortified coastal towers have served as a component of coastal defenses since the establishment of the earliest Greek colonies on the island. During the Late Medieval period (fourteenth–sixteenth centuries), fortified coastal towers took on an intensified role as the Spanish defended the island as part of their effort to establish a western Mediterranean hegemony. At the onset of the Early Modern Era (sixteenth–nineteenth centuries), the frequency and function of these towers transformed concomitant to sociopolitical stabilization and improved modes of communication. This poster explores the temporal and spatial distribution of the fortified coastal towers from the sixteenth through the nineteenth centuries along two different Sicilian coastlines; one between the cities of Palermo and Trapani in the west, and the other between Catania and Siracusa in the east. Drawing from data derived from historic maps, satellite imagery, and ground truthing, a sample of more than 85% of the towers built or used during the Early Modern Era were plotted into a GIS environment. Viewshed and least-cost-path analyses were used to compare and contextualize strategies for communication and defense in relation to a rapidly changing social order.

Kirkwood, Damian [340] see Kristy, Gwendolyn

Kislan, Erin

[234] *Living Historic Sites: Byproduct of Archaeological Reconstruction?*

Living history is sometimes considered a non-archaeological form of experimental archaeology. One form of experimental archaeology is the manufacture of replicas or reproductions of an object or structure using historically accurate technologies and methods of a given time period in the reconstruction. Living historic sites have certain methods that are utilized to ensure historical accuracy of an interactive site or perhaps a demonstration of a historic craft. To interpret a living historic site, archaeological documents including but not limited to historic maps, books, architectural blueprints, structural foundations, trash pits, and even artifacts from an archaeological excavation are used to authenticate any claims of period correctness. Results from the experimental archaeology are used for public outreach programs, and demonstrations of historical handicrafts. Living history would not have been able to portray historical facts accurately without replicating the results of the experiment(s) in the form of interactive demonstrations for the public. Using archaeological evidence, historic sites have been updated to more authentic recreations based on research at that time. Demonstrations of historical handicrafts are added into the current program(s), portraying the experimental results for public education.

Kissel, Marc, and Nam Kim (UW-Madison)

[184] *Peacefare and Warfare in Human Evolution*

The role of warfare has been at the center of debate about human origins. Related hypotheses are often influenced by implicit assumptions about human nature, with many suggesting that humans are either innately violent or innately peaceful. In this talk we discuss the history of the study of the role of violence and warfare in human origins, asking how warfare studies coevolved with our understanding of how we became human, paying attention to how scholars have talked about fortification We further ask how research since the early 1900s intersects with the history of science itself, paying attention to the social conditions in which both the anthropology and archaeology of warfare emerged and examining the sociological background to theories such as killer apes or ideas that we are living in the most peaceful era ever. We also discuss how the very same capacities for war also set the stage for emergent forms of peacemaking, conflict resolution, defensive structures, and the avoidance of direct violence. This is important since the data generated by scholars of human evolution are often used in problematic ways by researchers and writers both within and outside of anthropology.

Kissel, Marc [42] see French, Jennifer

Kissel, Marc [42] see Khaksar, Somaye

Kitch, Katelyn (Texas Archeological Research Laboratory), and Lauren Bussiere**[275]** *Archaeological Collections as Education for Multiple Audiences: The Moore-Hancock Farmstead*

The Moore-Hancock Farmstead, a historic-age, mid-nineteenth-century log cabin structure and associated buildings located in central Austin, Texas, has been the subject of archaeological investigations since the early 1990s. Though the collections produced by this work sat on repository shelves for decades, they have recently been used to supplement educational efforts at several levels. The artifact collections were rehabilitated and re-inventoried by UT Austin undergraduate students in spring of 2024 as part of a curation course. Students then delved deeper into the site's history as they designed and built an exhibit for display at the site during a summer 2024 internship. Finally, the exhibit itself informs visitors from many communities, including descendants and new archaeologists working at the site. This multilevel approach to educational outreach showcases the potential of archaeological collections to help build knowledge across a wide range of audiences, topics, and perspectives.

Kitchel, Nathaniel, Brandi MacDonald (Archaeometry Laboratory, University of Missouri Research Reactor), Jonathan Lothrop (New York State Museum), and Barry Keegan (New York Archaeological Society)**[391]** *Characterizing Red Chert from the Munsungun Lake and Normanskill Formations: Toolstone Acquisition and Transport during the Fluted Point Period in Northeastern North America*

In northeastern North America (New England, southern Quebec, and the Canadian Maritime Provinces) red and mottled red and green chert from the Munsungun Lake formation northern Maine is associated with fluted-point period occupations in the region. Various characterization methods including visual (macro- and microscopic) inspection, X-ray diffraction, and X-ray fluorescence have supported this inference. These efforts were hindered, however, by a lack of a known quarry location for mottled red and green chert outcrops within the Munsungun Lake formation. The identification of one such quarry in 2016 presented an opportunity to address this shortfall and better understand the internal visual and geochemical variability of this material though by some to be unique in the region. While these analyses are ongoing the (re)identification of red chert outcrops exhibiting evidence of quarrying activities within the Normanskill formation of eastern New York complicated conclusions drawn from the Munsungun Lake formation alone. Here we report the results of ongoing work to characterize visually similar red and mottled red and green cherts from both the Munsungun Lake and Normanskill formations using neutron activation analysis and the implications of these analyses for understanding toolstone acquisition and transport during the fluted-point period of the Northeast.

Kitchel, Nathaniel [365] see Alperstein, Jonathan

Kitchel, Nathaniel [217] see Rockwell, Heather

Kitchel, Nathaniel [317] see Trischman, Kaleigh

Kitteringham, Lia [128] see Graham, Caroline

Kitteringham, Lia [128] see Sathiakumar, Abhishek

Kitterman, Anya (Hill AFB)**[340]** *Restricted Archaeology: Collaboration from Behind the Fence***[WITHDRAWN]**

Kiyasbek, Galymzhan [332] see Dupuy, Paula

Klaput, Jan (University of Warsaw), Jason Yaeger (UTSA), and Alexei Vranich**[182]** *Feasting at Pumapunku: Analysis of Animal Remains from Tiwanaku, Bolivia*

The presentation covers the results of the zooarchaeological analysis of faunal material collected during the excavations of the Proyecto Arqueológico Pumapunku-Akapana carried out in 1999–2002 in Tiwanaku, Bolivia. The project focused on the architectural complex immediately north of the monumental Pumapunku platform, an area developed by the Tiwanaku culture and later settled by the Incas, who erected royal palatial structures at the site. The analysis—covering various animal taxa, most notably Andean camelids—aims to

reconstruct the past use of animals at Pumapunku, based on species composition, mortality patterns, and observation of anthropogenic modification on bones. In the presentation, we discuss the past function of the various analyzed contexts as logistical facilities for the Inca palace, as well as their likely connection to the ritual activity around Pumapunku, such as ceremonial feasts and animal sacrifice. Based on finds of faunal remains spanning from the Tiwanaku culture heyday to the early colonial period, we also address the question of the changing character of this unique site over time.

Klaus, Haagen [45] see Jankowski, Maegan

Kleeschulte, Megan (University of Tennessee, Knoxville)

[186] *NAGPRA in the Medicolegal System: An Exploration of the Interaction of State and Federal Legislation for the Recovery and Handling of Human Skeletal Remains*

The Native American Graves Protection and Repatriation Act (NAGPRA) is a federal law that was passed in 1990. In the 30 years since the law was passed it has faced resistance and scrutiny from the museums, universities, and scientists who are meant to comply with the law. The medicolegal system (Medical Examiners and Coroners) is an institution that has not traditionally been considered to be subject to NAGPRA's regulations and therefore has operated outside of the law's sphere. However, Kleeschulte (2018) identified that as the medicolegal system both receives federal funding and has control over Native American human remains, they fall under the law's definition of museum and therefore must comply with its regulations. Using ethnographic research constructed using Community-Based Research Principles, this paper examines how medicolegal practitioners respond to discoveries of human remains, a process dictated by state law, and how these remains, if determined to be non-forensically significant and Native American, are subsequently handled and dispositioned. This paper also examines the relationship between state legislation for the recovery and handling of human remains and NAGPRA and provides recommendations for a path forward.

Klembara, Nathan (Binghamton University)

[287] *Yapping about Yesterdays: Archaeological Politics and Theoretical Development from the Mouths of Archaeologists*

There have numerous discussions about the role of social values and politics in archaeological method, theory, and interpretation, especially regarding the so-called "critical theories" of feminism, queer theory, indigeneity, critical race theory, and disability theory (among many others). What remains under-researched in this literature is a more nuanced look at the ways in which these theories, and the political implications they interrogate, are understood and used by practicing archaeologists. In other words, how does the epistemic combine with the practical, the ideological with the phenomenal? Based off ethnographic interviews with emerging, practicing, and former archaeologists, this study combines archaeological theory with the methods of linguistic anthropology to investigate the nuanced ways in which archaeologists epistemologically construct archaeological pasts and presents by talking about archaeological theory and their place in it. While ongoing, preliminary data suggests that archaeological politics and theory are "more slippery" than purported, in this paper I will further elucidate the various trajectories of theoretical and sociopolitical development within the field of archaeology.

Klemmer, Amy (UW-Milwaukee), Valentina Martinez (Florida Atlantic University), and Michael Harris (Florida Atlantic University)

[56] *An Ethnoarchaeological Approach to Fishing Technology on the Central Coast of Ecuador*

Fishing has been an intrinsic element to life on the central coast of Ecuador for at least 5,000 years and remains vital at the household, community, and commercial level in the modern day. Direct evidence of fishing technology is not always visible in the archaeological record, requiring analysis of indirect evidence to provide insight into fishing strategies over time. Archaeological fish remains combined with ethnographic data can provide a more integrative understanding of fishing practices than archaeological data alone. This paper draws on archaeological evidence in the form of fish remains from Rio Chico (N4C3-170), a site occupied almost continuously for some 5,000 years, existing data from other sites in the region, and ethnographic evidence from interviews with local Salango fishermen to provide an overview of fishing technology in Salango (Manabí province) and the surrounding region.

Klessig, Barbara (Cal Poly Humboldt), and Jessica Bedell (Cal Poly Humboldt, Cultural Resources Facility)

[39] *Tools of the Trade: Investigating Textile Production on the Macedonian/Roman Site of Crnobuki, Macedonia*
Globally, textiles are one of the most common threads we have with other human beings. Humans have developed an intricate and amazing process in textile production that includes a variety of tools, materials, and technologies. The tools used in ancient textile production may seem simplistic and crude but in actuality are feats of ingenuity and creativity. As ancient textiles themselves do not survive as frequently as other forms of artifactual evidence, the tools used and the technologies behind them are a critical resource for understanding the processes involved in textile production. This presentation takes a preliminary look at the evidence of textile production at the site of Crnobuki, located near Bitola, Macedonia, by examining the tools found and their distribution in the excavations from two seasons, 2023 and 2024. The data collected includes lidar and GPR imaging, collected data on the tools and analysis of their distribution, and the materials and forms used in creating the tools. The aim of this research is to support the proposition that textile production was a large contributor to the economy of the Crnobuki site.

Klessig, Barbara [90] see Bedell, Jessica

Klessig, Barbara [90] see Hawkins, Nyah

Kliejunas, Mary [299] see Fetterhoff, Alex

Knapp, Gregory (University of Texas, Austin)

[105] *Patricia Mothes's Research Trajectories: Ethnogeography of Ancient Landscapes, Volcanoes, and Adaptive Dynamics*

Patricia Mothes and Peter Hall's research careers span decades. I first collaborated with Patty when she undertook a pioneering study of an ancient canal in the northern Ecuadorian highlands for her thesis at the University of Texas. Since then her work has spanned multiple disciplines and time periods, but always evidenced a love for Ecuador's peoples, landscapes, and adaptive possibilities.

Knell, Edward (California State University, Fullerton), and Alexandra Jonassen (California State Parks Inland Empire District)

[382] *The Lithic Technology of a Wetland Transient Land-Use Strategy: The View from Pluvial Lake Mojave, California*

Knell et al. (2023) developed a biotic resource structure and optimal foraging theory inspired land-use model for Silver Lake, one of two playa lakes that once formed pluvial Lake Mojave in California's central Mojave Desert. The land-use model predicted that Paleoindians remained longer around productive, high-rank wetland habitat resource patches as part of a wetland stable strategy (WSS) but more frequently moved between basins as part of a wetland transient strategy (WTS) when patch rank was low. A simplified test of the land-use model confirmed that Silver Lake was a low-rank wetlands resource patch during the terminal Pleistocene–Early Holocene (TP-EH) and inhabited by Paleoindians who employed a WTS. This study uses geochemical source data and a technological analysis of chipped stone artifacts from 13 TP-EH sites to more fully understand the strategies Paleoindians employed around Silver Lake and, by extension, Lake Mojave. Technological strategies identified at Silver Lake are then compared to those from other Great Basin and South American arid environment pluvial/playa lakes. Establishing relationships between technology and land use in disparate arid environments reveals how Paleoindians expanded into and adapted to the myriad of ecosystems they encountered.

Knell, Edward [218] see Jonassen, Alexandra

Knierim, Rebekka [65] see Calistri, Hannah

Knight, Vernon

[371] *Archaeology of Sixteenth-Century Spanish Colonial Expeditions in the North American Southeast: Countering the Popular Narrative*

During the middle of the sixteenth century, the North American Southeast witnessed several large, well-funded Spanish colonial incursions. Recent archaeological research in the Black Prairie of Alabama is within the zone of convergence of two such expeditions, those of Hernando de Soto (1540–1541) and Tristán de Luna (1560). This research tends to dispel several bits of received wisdom, much of which is firmly embedded in popular historical narratives. First, rather than interacting with a series of hierarchical Mississippian chiefdoms, in this region the Spaniards encountered an assortment of small and large warring chieftaincies. These had emerged in the wake of the political collapse of the large Mississippian chiefdom of Moundville. Second, rather than producing a wake of demographic devastation due to introduced disease epidemics and military losses, such impacts on the local populations were temporary and slight. Native populations were, in fact, remarkably resilient in the decades following contact. Third, regarding the adoption of Spanish objects obtained by Native peoples, in this region such objects were seldom treated as prized, exotic rarities imbued with the sacred. Instead, such objects were treated as more commonplace articles, only sometimes used in any observable way, and often discarded abundantly in ordinary surface contexts.

Knipper, Corina [284] see Fisher, Lynn

Knudson, Kelly [339] see Stone, Anne

Knutson, Teagan, Olivia Navarro-Farr (College of Wooster), and Sara Mirza (College of Wooster)

[85] *The Future and War at Play: Contextual Analyses of a Royal Funerary Polychrome Platter from Ancient Waka'* Among the numerous funerary offerings associated with the interment of Lady K'abel, the Kaanul queen who ruled at the midsized Classic Maya city of Waka', was a particularly large polychrome platter. Keith Eppich identified the platter as a Late Classic Palmar Orange polychrome and it features an array of motifs, including cormorants and circular objects adorning the vessel's outer and inner borders. The platter features a large, punctured hole in the center, likely representing a "kill" hole and it was placed face down over the left arm of the interred. We employ contextual and iconographic analyses to argue this platter was used as a gaming and a divinatory board/tablet. Its positioning in the tomb also mimicked its representation as a shield, which is directly comparable to other representations of this ruler (Navarro-Farr et al. 2020). In this analysis, we employ Indigenous ontological frameworks to interrogate the relationships between game boards, divination, and warfare from a Classic Maya perspective. We also consider how this object, as a possession of the interred, underscores the authority of the royal woman who wielded it.

Koch, Timothy, Helen Haines (Trent University Durham GTA), and Alec McLellan

[296] *Cities of the Future or a Relic of the Past? The Universality of Low-Density Urbanism among the Ancient Maya* Low-density urbanism is ubiquitous in the industrialized world, with suburbs and sprawling urban zones like the American northeastern seaboard being classified as such. Due to outsized environmental impacts and perceived unsustainability, this settlement pattern is often maligned. As one of the few prominent examples of agrarian-based, low-density urbanism, the ancient Maya can provide a much-needed case study on the sustainability of low-density urbanism. Therefore, a thorough assessment of the universality of low-density urbanism among the ancient Maya is warranted. Maps of 11 Maya sites were collected from published sources, digitized, and used to calculate household group densities. No significant difference was observed between Classic and Postclassic sites, but sites in the northern Lowlands were significantly denser than those in the southern Lowlands. Additionally, no significant inverse correlation was found between site density and area, which would be expected if low-density urbanism was ubiquitous among the ancient Maya. This study is intended to serve as proof of concept for a more thorough assessment of the applicability of the low-density urban model to the ancient Maya.

Koh, Andrew [299] see Tu, Ruoyang

Kohanski, Neil (ERM)

[381] *Understanding the Subterranean: An Examination of the Effects of Analogy in Maya Cave Studies*

This paper explores the pivotal role of ethnographic analogy in archaeological research, with a focus on Maya

cave ritual. While ethnographic analogy remains indispensable to the field, it faced heavy resistance from Processualists during the latter half of the twentieth century. This resistance led to the misapplication of Western models of religion to non-Western societies, highlighting the need for reevaluation through the integration of ethnographic methods. This paper discusses the rise of analogic models of Maya cave use derived from ethnography. Further, it addresses the need for analogy to study the subterranean, the effects of analogy in the interpretation of cultural material, and a greater understanding of Maya religion. Lastly, this paper will examine the ways ethnographic analogy is employed today and if this methodology is still relevant to Maya cave studies.

Kohl, Madeleine (University of Notre Dame), Charlotte Cardarella (University of Notre Dame), Meredith Chesson (University of Notre Dame), and Nancy Lapp (Pittsburgh Theological Seminary)

[65] *Dead Sea Tea Party: An Analysis of Variation in Early Bronze Age IV Mortuary Practices in Bâb adh-Dhra', Jordan*

This poster explores mortuary practices in the Early Bronze Age IV (EB IV; 2400–2000 BCE) post-urban settlement of Bâb adh-Dhra', Jordan through the analysis of legacy collections from 1970s excavations by the Expedition to the Dead Sea Plain led by R. Thomas Schaub and Walter E. Rast. Bâb adh-Dhra''s cemetery offers EBA researchers an exceptional opportunity to compare EB IV mortuary practices with the remains from an associated unwallled village settlement to assess the nature of socioeconomic differentiation within a post-urban community. We analyzed EB IV tombs RTT (Road Trench Tomb), A52, and A54 to examine variation in how EB IV people in the village treated their dead, including primary and secondary mortuary practices and the inclusion of different types of grave goods. We argue that the range of practices, particularly the presence and absence of teapots and lamps, indicates participation in rituals designed to preserve a sense of community and personhood.

Kohler, Paige (Chronicle Heritage)

[298] *The Motivating Factors of Different Stakeholders for Preserving Archaeological Heritage in Jordan*

The value of archaeological heritage varies from country to country. This poster provides results from a project that used methods from sociocultural anthropology to investigate the significance of archaeological heritage in Jordan and current preservation efforts there. Interviews were conducted with study participants at four distinct locations across Jordan to examine whether tourism and its contribution to Jordanian economic stability is the most significant motivator for protecting and preserving archaeological heritage in Jordan. Data from these interviews were used to examine the role local communities play in archaeological research and cultural resource management. In particular, this work focused on what community benefits are derived from these collaborations and how involving local communities in archaeology can promote a greater understanding of the past by nonexperts. An additional component of this research examined how perceptions of cultural heritage in Jordan shape preservation and whether institutions, ideologies, or resources should be maintained, altered, or improved to further the effectiveness of cultural resource management and cultural heritage preservation. A key finding was that tourism is the most widely shared motivating factor of different stakeholders for preserving Jordanian archaeological heritage rather than a sense of connection to archaeological heritage itself.

Kohut, Lauren (Winthrop University), BrieAnna Langlie (Binghamton University), Matthew Velasco (Cornell University), Antonella Rivera Tames, and Kelly Moss (University of California, San Diego)

[184] *Fortification and Infrastructures of Security in the Late Prehispanic Colca Valley, Arequipa, Peru*

Fortifications are among the most enduring material records of warfare in the archaeological past. Studies of fortification often emphasize the importance of defensive walls, not only in preventing enemy intrusion but also in controlling movement and delineating insiders and outsiders. This focus on enclosure draws our attention to the space within the walls, conveying an image of fortification as a static locus of control and refuge. The process of fortification, however, involves a defense of space that extends beyond defensive walls through lines of sight, surveillance, and the channeling of movement. This paper reconceptualizes fortification as infrastructures of security: dynamic networks of built features that facilitated the flow of people, plants,

animals, and goods under conditions of insecurity. We apply this perspective to a cluster of defensive settlements, outposts, and landscape features in the Colca Valley (Arequipa, Peru) dating to the Late Intermediate period (AD 1000–1450), a period of Andean prehistory marked by warfare. Taking a microregional and multisite perspective, we argue that fortification here formed an infrastructure centered on food security. This expanded view situates fortification as a generative process of securing the landscape that transforms and produces the spaces of daily life.

Kohut, Lauren [192] see Langlie, BrieAnna

Kohut, Lauren [182] see Moss, Kelly

Kolb, Michael F. [369] see Aiuvalasit, Michael

Kolb, Michael J. (Metropolitan State University of Denver), and Gene Wheaton (Community College of Denver)

[336] *The Water Supply Infrastructure of Early Denver*

The City of Denver originated as a gold-mining town. Its geographic location and semiarid environment posed unique challenges to the development of its water supply infrastructure. Multiscalar historical and archaeological analyses, reveal how the city coped with the challenges of water scarcity and distribution over time, illustrating the evolution of water management practices, and the ways in which infrastructure and governance systems evolved to meet changing needs and priorities. Historical analysis maps the changes in urban water infrastructure (cisterns, ditches, sewers, artesian wells, and reservoirs) using a systematic documentation review of the Denver newspaper citations between 1860 and 1929. This is corroborated through contextual investigation and archaeological excavations. Taken together, the research demonstrates how the residents of early Denver were forced to continually seek new water sources for distribution even after other provisional priorities such as sewage management and flood control were initiated.

Kolb, Michael J. [336] see Coble, Shawn

Kolb, Michael J. [336] see McConnell, Ryun

Kolb, Michael J. [336] see Wheaton, Gene

Kollmann, Dana (Towson University), David Reich (Harvard University), Aisling Kearns (Harvard University), Jakob Sedig (Harvard University), and Richard Hansen (Idaho State University; FARES Foundation)

[383] *Archaeological and Genetic Investigations of Human Remains from the Mirador Basin, Guatemala*

Archaeological excavations over the span of several decades within the Mirador-Calakmul Karst Basin have recovered human remains from a variety of chronological periods, ranging from the Middle Preclassic to the Late Classic periods. However, of the 98 samples submitted to the Harvard DNA laboratory, few petrous bones were available for extraction, but usable data was recovered from 24 distinct individuals, and very good data of at least 100,000 positions was recovered on seven individuals. One of the most interesting discoveries was the identification of a series of nine individuals who had been dismembered and placed in a lime kiln in the Late Preclassic period. DNA analyses of these remains and others from the basin provide a new and fascinating insight in the human dynamics at play in a confined geographical area of northern Guatemala. *****This presentation will include images of human remains.**

Kolpan, Katharine

[45] *A Return to Polysemy and the Political Lives of Dead Bodies: Agency and Ideology in Modern and Ancient Bodies in Place*

The agency of the dead, particularly the dead body, has been hotly debated in biological anthropology and archaeology. Can the dead influence the living? Or are dead bodies purely at the mercy of the cosmological and political whims of the extant world? This presentation examines multiple aspects of the emplaced dead body to argue that specific places bound up inside the bodies of the dead can be layered over each other, influencing how they are perceived and employed by the living and their potential use to those with specific political and/or ideological goals. Utilizing the bodies of the more recently deceased from the Western

Balkans and the ancient dead from coastal Bulgaria, this presentation examines how the bodies of World War II soldiers can be employed toward opposed ideological purposes, while the skeletal remains of ancient migrants may provide information about continued strife and belonging on the Bulgarian Black Sea Coast.

Kolvet, Renee [60] see Simmons, Alan

Konzak, Michael [45] see Boutin, Alexis

Kooiman, Susan (Southern Illinois University, Edwardsville), Matthew Boyd (Lakehead University), and Sean Dunham (US Forest Service)

[37] *Detecting Ancient Wild Rice (Zizania spp.) across the Upper Great Lakes of North America*

Wild rice (manoomin; *Zizania* spp.) is closely linked to past and present Indigenous cultures in the North American Great Lakes region. However, wild rice is difficult to detect in lake sediments and archaeological contexts using traditional methods, such as pollen and macroremains, so both the ecological and cultural histories of this plant are poorly understood. Modern plant distribution data can be useful for understanding possible past wild rice stands but are also problematic due to recent environmental changes, landscape modifications, and deliberate seed dispersal. Phytoliths have become a useful proxy for identifying the presence of wild rice in lacustrine sediments, soil samples from archaeological contexts, and carbonized food residues. Examples from studies in Michigan and Ontario highlight the potential and limitations of these methods for chronicling both the recent and ancient history of wild rice and its role in local Indigenous economies, diets, and cuisines. In addition to enhancing archaeological interpretations of past human-environmental interactions in this region, information gleaned from these and future studies have the potential to contribute to Indigenous food reclamation and food sovereignty efforts, wetland restoration projects, and other contemporary issues.

Koons, Michele (Denver Museum of Nature and Science), Alicia Boswell (UC Santa Barbara), and Hugo Ikehara Tsukayama

[273] *Advancing the Study of Alto Piura's Past: New Perspectives on the Archaeology of the Cerro Vicus Region*

In the late 1950s and early 1960s, the Piura region in far northern Peru burst into the spotlight with the looting of sites that produced a dazzling new ceramic style and intricate metalwork that set the art market abuzz. These artifacts, later dubbed Vicus and Frías, were named after the regions they were believed to originate from. A geographical and cultural frontier zone, initial archaeological efforts in the Upper/Alto Piura valley around Cerro Vicus were limited, yet they uncovered tantalizing evidence of at least 2,000 years of continuous occupation. Excitingly, these discoveries suggest a temporal overlap in Vicus and Moche material culture in the area in the first millennium. Embarking on new fieldwork in the area, we quickly encountered complex challenges in documenting and describing these sites. This paper dives into our journey of crafting a research program that builds on collecting histories, looting histories, and previous archaeological studies while tackling the intricate issues of terminology and chronology that have long confounded the region.

Koons, Michele [336] see Gillaspie, Amy

Koontz, Rex (University of Houston)

[344] *The Case of Cuyuxquihui: A Postclassic Site near El Tajín*

Cuyuxquihui sits high above the Tecolutla Valley, about 20 km southeast of the site of El Tajín. The site may be dated generally to the Postclassic and is one of the larger and more complex sites from that period in the region. The relationship of Cuyuxquihui to the decline and abandonment of El Tajín has been a subject of some conjecture. This presentation will focus on patterns in the construction of urban space (especially ballcourts) and types of elite material culture found at the site and how they differ from what went before in the Tajín region, in hopes of better defining the relationship of the local Epiclassic and Postclassic elite culture in the Tecolutla valley and nearby El Tajín.

Kornfeld, Marcel (University of Wyoming)

[57] *Renewed Studies of the Hell Gap Paleoindian Site, Wyoming, with Special Emphasis on the Folsom Component*

First excavated in the 1960s, the Hell Gap site provided the backbone of North American Paleoindian chronology. Paleoindian complexes defined over the previous 30 years lacked solid evidence of temporal relationships. The new science of radiocarbon dating preceded the investigations of Hell Gap, but the solid carbon assaying and the requirement for large samples proved incapable of enhancing our understanding of cultural sequencing of this early period. The 10 cultural complexes found superimposed on each other at Hell Gap demonstrated the cultural succession of the complexes found at the site, several of which were newly defined. Sixty years later, renewed site investigations show the reliability of the original results and contribute to current debates of Paleoindian lifeways. The focus of this presentation is on one of the earliest components at Hell Gap, the Folsom occupation. Although recent reinvestigations suggest that the Hell Gap valley represents palimpsests of small recurring occupations, the Folsom component appears to be a single longer term episode of site occupation. Evidence for a more substantial Folsom occupation is discussed as is the nature of on-site activities.

Kornfeld, Marcel [300] see Houghton, Briana

Kornfeld, Marcel [223] see Rapson, David

Kornfeld, Marcel [300] see White, Clifford

Korpershoek, Mirte (Bournemouth University), Philip Riris (Bournemouth University), Marcin Budka (Bournemouth University), and Sally Reynolds (Bournemouth University)

[334] *Rock Art as a Paleoenvironmental Proxy: Using Animal Depictions to Determine Differences in Environmental History between Two Colombian Regions*

Rock art research has traditionally focused on the identification and interpretation of motifs, both representative and nonrepresentative. In recent times, scholars have increasingly started to investigate how rock art can inform on the environmental history of the region it has been created in. Depictions of animals, plants and technologies may shed light on natural and sociocultural changes to the living environment of rock art practitioners. Animal motifs are especially suitable for analysis if the goal is to compare any conclusions on environmental change documented by rock art between regions, as this type of motif is the most widespread on a global scale. We present preliminary results of such a large-scale comparison by recording animal depictions in rock art from the Serranía La Lindosa in the Colombian Amazon, to depictions from near the Orinoco river. Here we present results on site similarity based on animal motifs, which demonstrates that each region displays preferences in the depiction of animal motifs, and thus potentially a distinct socioenvironmental history distinct from the other. Future comparison to rock art from other countries with similar climates may provide further insight into potential patterns in species distribution in rock art.

Kosiba, Steve (University of Texas, San Antonio)

[331] *Seasonality and Intermittent Occupation of High-Altitude Towns in the Cusco Region during the Late Intermediate Period*

With this exploratory paper, I present and interpret the results of laboratory analyses of excavated materials from the Formative (ca. 2200 BCE–200 CE) and Late Intermediate period (ca. 1000–1350 CE) towns of Matagua and Wat'a, located in and near the Cusco Valley of Peru. The goal of the paper is to gauge whether these settlements were occupied and inhabited year-round, or whether they were used on a seasonal or intermittent basis during these time frames. Empirically, I draw on taphonomic data from faunal remains and pottery samples, as well as precisely dated sequences of building and deposition events. In more general terms, I discuss the archaeological evidence for seasonality, and its implications for anthropological understandings of social organization in the ancient south-central Andes, relative to Southern Quechua understandings of spatial frames of reference and scalarity, and in contrast to archaeological theories that equate a people, a culture, and a landscape. Centering on these issues can foster a more fluid understanding of cultural temporalities and ecologies that challenges conventional archaeological attempts to economically model the past in terms of static “polities” and “periods.”

Kosman, Sean, and Silvia Pettem

[276] *Set in Stone: How Historical Photographs and Maps Reinvigorated the Long-Neglected Caribou Cemetery*

Nestled in the mountains west of Nederland, Colorado, lies the site of the former town of Caribou. At the

time of the 1880 federal census, Caribou was home to 556 people, many of whom were immigrants from Cornwall, England. Harsh winters, fires, and outbreaks of diphtheria eventually decimated the once prosperous silver mining community. Today, little remains of the town site except for the crumbling foundations of one building and the town cemetery. Tragically, during the 1960s and 1970s, many of the cemetery's headstones were stolen, rendering the occupants of each grave unknown. Fortunately, a group of local residents, along with members of the Nederland Area Historical Society, have rallied the Nederland community in support of bringing dignity and respect to the deceased. Utilizing historical photographs, state-of-the-art GIS software, and community outreach, a dozen (to date) of these unknown gravesites have been identified. This presentation delves into the logistics behind the identification of graves at the Caribou cemetery along with the challenges and breakthroughs made during the ongoing effort to preserve the final resting places of these hardy men, women, and children of Colorado's mining past.

Kosman, Sean [276] see Califano, Matthew

Kot, Malgorzata (University of Warsaw), Gayratkhon Mukhtarov (Uzbek Academy of Sciences), Marcin Przybyła (Jagiellonian University), Michał Leloch (University of Warsaw), and Jan Ledwoń (Jagiellonian University)

[332] *Tracing Modern Human Migration to Central Asia through Studying High Mountain Caves in Western Tian Shan*

The Initial Upper Paleolithic (IUP) is a term describing lithic assemblages dated roughly to 50–40 ka, showing traits of the emergence of blade technology, traditionally associated with the expansion of modern human groups. Several sites with IUP traits have been recently recognized in West Central Asia (Uzbekistan and Tajikistan), but astonishingly they date to a period between 77 and 43 ka (Obi-Rakhmat, Khudji, Katta Sai 2, Khodjakent, Kuksaray 2, Ertash Sai 2). The recently started Polish-Uzbek project aims at answering whether there were indeed modern human groups who lived in western Central Asia at this time. This would make them the earliest known modern human migration waves into Eurasia. Alternatively, these assemblages were produced by Neanderthals or Denisovans. To answer the question, we search for new cave sites in the region using developed protocol. To localize the sites we use diverse source of information including speleological reports and Indigenous knowledge of local shepherds and hunters but also geolocation of social media pictures. The geolocated caves are further surveyed and tested during high mountain fieldwork campaigns. Here we present the preliminary data from several tested high mountain cave sites to show what is the potential in studying high mountain archaeology in Central Asia.

Kotegawa, Hirokazu (Universidad Nacional Autónoma de Honduras)

[118] *Hematita: Dentro y fuera del sitio arqueológico Estero Rabón*

El color rojo fue muy importante en distintas civilizaciones antiguas a lo largo del tiempo y espacio para los seres humanos. En la costa sur del Golfo de México se encuentran la sociedad Olmeca y la otra posterior llamada Villa Alta por su fase cronológica de la región. Desde la sociedad Olmeca, el uso de pigmento rojo, hematita, es común como la construcción de "Palacio Rojo" en San Lorenzo, las estatuas de madera en El Manatí, y varias cerámicas decoradas, etc. También en la sociedad de la fase Villa Alta se utiliza comúnmente en la cerámica como uno de los desgrasantes. El sitio Estero Rabón fue uno de los sitios más importantes en ambas épocas en la región. Según los estudios previos, alrededor del sitio se encuentran yacimientos de este mineral, hematita. En este estudio, mostraremos algunos yacimientos de hematita alrededor del sitio pensando la importancia del uso de hematita dentro y fuera del sitio.

Kovacevich, Brigitte (University of Central Florida), Griffon Binkowski (University of Central Florida), and Dawn Crawford (AR Consultants Inc.; Southern Methodist University)

[378] *HHRXF Analysis for Preliminary Identification of Greenstones in Mesoamerica*

Identification of greenstones in the field and lab can be challenging. This paper will discuss the possibility of preliminarily distinguishing greenstones elementally with the use of a handheld X-ray fluorescence spectrometer (HHRXF). While HHXRF data has some limitations and produces only semi-quantitative data without a calibration dataset, results can be compared and verified with other quantitative techniques. We argue that even without a calibration dataset, the gross photon counts from an HHXRF with a helium flow

meter can be utilized to generally distinguish between jadeite, omphacite, and serpentine for at least a preliminary field or laboratory identification. The current study will present results of the HHXRF analysis of greenstone beads from the site of Holtun, Guatemala (a Maya site occupied from the Preclassic through the Postclassic periods) and compare those to findings from museum collections. The paper will also discuss the feasibility and limitations of such studies.

Kovacevich, Brigitte [65] see Batres, Kimberly

Kowalewski, Stephen (University of Georgia), Amanda Roberts Thompson (University of Georgia, Laboratory of Archaeology), Victor Thompson (University of Georgia), Kristine Schenk (University of Georgia, Laboratory of Archaeology), and Kathleen Mulchrone (University of Georgia, Laboratory of Archaeology)

[188] *Archiving and Using the Oaxaca Survey Data Part I: The Physical and Online Records*

This project integrates, curates, and makes widely accessible the raw data from eight systematic regional surveys (1971–2011) covering 5,775 km², including 6,000 sites and over 10,000 components, in Oaxaca, Mexico. Materials consist of field notes, site and artifact forms, coded data, sketches, maps, air photos, photographs, and project records. University of Georgia Laboratory of Archaeology (UGAL) staff and volunteers rehabilitated the physical records to current standards and scanned and digitized all documents and photographs, in accord with UGAL procedures. As described in Part II, the project georeferenced all components recorded before accurate topographic maps existed. The digital files meet modern curation standards and have documentation in English and Spanish. We are creating policies and procedures for free access to the digital archive. Our project offers lessons for curation and digital archiving, including (1) making data accessible is costly in time and labor; (2) compiling large datasets allows researchers to recognize larger patterns and ask new questions; and (3) digital curation and access is another level of reporting and an expense that should be budgeted at the beginning of every archaeological project.

Kowalewski, Stephen [188] see Parbus, Brett

Koyiyumptewa, Stewart [274] see Sinensky, R. J.

Koyiyumptewa, Stewart [298] see Solometo, Julie

Kraan, Claudia [288] see Conlan, Christine

Kracht, Emily (University of California, Santa Barbara), Richard George II (University of California, Santa Barbara), Roger Colten (Yale Peabody Museum), and Douglas Kennett (University of California, Santa Barbara)

[301] *AMS Radiocarbon Dates Establish Ballcourt Site Chronologies for Toita and Llanos Tuna in Precolonial Puerto Rico*

This study addresses the relative paucity of dated archaeological sites in Puerto Rico and expands the islands' existing database of radiocarbon dates. Our project focuses on developing AMS radiocarbon chronologies from two ballcourt sites: Toita, located in central-eastern Puerto Rico, and Llanos Tuna, located in southwestern Puerto Rico. Current evidence, based on ceramic sequences established by Rouse (1952), suggests that Llanos Tuna was occupied from roughly AD 600 to 1200, and Toita was occupied from roughly AD 600 to 1500. AMS radiocarbon dates were taken from hutia bones, a non-native rodent that was introduced to the island by early Hispaniolan communities. This project also directly dates the management and consumption of hutia on the island for the first time. Bayesian modeling and summed probability distributions (SPDs) of dates allow for greater resolution of island chronology and reveal potential demographic trends. Determined dates are also compared to existing dates within each region and across the island.

Kracinski, Andrew

[379] *Material Manifestations of Identity in Prisoner of War Camps*

While archaeological questions pertaining to the study of identity have been asked about groups living in

historic times to the neolithic, archaeological studies have looked at the material manifestations of identity in locations of confinement from contemporary sites. In doing so, the question becomes not “how do these individuals identify” but instead “how do these individuals use the materials around them to assert their identity.” The materiality of contemporary sites of confinement (like Prisoner of War [POW] Camps or like places of incarceration), combined with the historical record, allows for the study of how individuals and communities maintained their identity in spaces meant to erase, suppress, or change it. This paper lays out a theoretical argument demonstrating the roles of places of confinement in the archaeological study of identity, with comparative analysis on select locations that demonstrate how the materiality (either hidden or not allowed, tolerated, and permitted) allows for the expression of community or individual identity in such locations, thus allowing for a discussion on resistance and identity in periods of stress and/or confinement.

Kratimenos, Panos (UCL, Institute of Archaeology)

[283] *No (Holy) Lords, No Masters: Trade as Resistance at Marco Gonzalez, Belize*

The Precolumbian Maya site of Marco Gonzalez, located at the southern tip of Ambergris Caye, is significant in appearing to have weathered the storm of the so-called Terminal Classic “Collapse.” While transformations abounded, unlike many other inland sites, Marco Gonzalez persisted into the “Postclassic,” arguably reaching its zenith. Recent research further draws into focus the centrality of the site’s position as an important node in long-distance circum-peninsular maritime trade networks as a bulwark against the ructions seen inland. Moreover, the conspicuous absence of both fixed hierarchical social dynamics or evidence of domination by larger, inland, *k’uhul ajaw*-ruled sites are significant. Drawing on recent excavations during the 2023–2024 field seasons, this paper explores the intersection of these phenomena, proposing that it was precisely the site’s inhabitants’ preoccupation with long-distance maritime trade which was leveraged into relative autonomy from the domineering ambitions of proximate *k’uhul ajawob*. Building on recent perspectives on archaeologies of resistance, as well as the role of storytelling, counternarratives, and prefiguration in archaeology, this paper seeks to reconfigure interpretations of Marco Gonzalez as peripheral or anomalous but, rather, as exemplary of the potential provided by the “fiery pool” to facilitate nonhierarchical social dynamics and resist outside domination. *****This presentation will include images of human remains.**

Krause, Mary [101] see Mehta, Jayur

Krause, Maya (Vanderbilt University), and Tiffany Tung (Vanderbilt University)

[343] *Infant Feeding Practices within a Bioarchaeology of Care Framework: Investigating Isotopic and Paleopathological Data from a Wari Community (600–1000 CE) in the Peruvian Andes*

Breastfeeding is a dynamic, embodied process and powerful mediator of maternal and childhood health. Accordingly, this study builds a preliminary understanding of breastfeeding and weaning as an intervention of care. Stuart-Macadam (1995:27) describes breast milk as a “vital, dynamic substance” that can transmit both beneficial (immunoglobulins, nutrients) and harmful (nicotine, alcohol) substances to the infant. We use an anthropological bioarchaeological approach to examine breastfeeding and weaning practices through stable isotope data ($\delta^{15}\text{N}$ from bone collagen and $\delta^{13}\text{C}$ and $\delta^{18}\text{O}$ from dental enamel carbonates) and paleopathological evidence. Skeletal remains from Auquimarca ($N = 104$), a Wari-affiliated site (600–1000 CE) in the Andes, indicate that breastfeeding continued until around ages four to five. Elevated $\delta^{18}\text{O}$ values in enamel suggest reliance on breast milk, while changes in $\delta^{13}\text{C}$ levels imply maize as a weaning food. The lower prevalence of developmental lesions at Auquimarca compared to other Middle Horizon sites suggests that prolonged breastfeeding might have protected infants from the risks of weaning. These findings emphasize breastfeeding as an adaptive, cooperative effort during a critical period, providing nutrition and immunity that shields infants from environmental stress and growth-impairing challenges.

Krause, Samantha (Texas State University), Luisa Aebersold (University of Texas), and Debora Trein

[109] *“The School of No Whining”: How the Pedagogy of Fred Valdez Informs Multidisciplinary Research in Northwestern Belize*

Northwestern Belize and the greater Maya Lowlands is a complex landscape with a unique environmental and

cultural heritage. Multidisciplinary and collaborative studies are necessary to better understand and reconstruct the history of humans on the landscape. Throughout his distinguished career, Dr. Fred Valdez Jr.'s research and pedagogy informs and supports dozens of students and trainees, providing the support necessary to conduct such multidisciplinary studies. This paper brings together multiple aspects of Fred's pedagogy through three distinct case studies, each of which demonstrates his ongoing contributions to the field. Here we explore and review three distinct but interrelated research projects in northwestern Belize, all of which have been informed by Fred's knowledge and guidance. These three projects focus on three different subdisciplines of research conducted in the region: landscape studies focused on geomorphology/geoarchaeology, paleoecology, and paleobotany, as well as Maya urbanism and monumental spaces.

Krause, Samantha [387] see Harrison-Buck, Eleanor

Krause, Samantha [96] see Smith, Heather

Kreimer, Benjamin [123] see Wandsnider, LuAnn

Kriebel, Elizabeth (Denver Museum of Nature and Science)

[293] *Processing Legacy: Caring for and Learning from the WS Ranch Archaeological Collection*

The WS Ranch site (800–1300 CE) is an Upper Mogollon archaeological site near Alma, New Mexico, excavated by a field school program at the University of Texas, Austin, from 1977 to 1993. The collection remained unprocessed and unpublished in its original field bags at the university until 2018 when the Denver Museum of Nature and Science (DMNS) acquired the collection. After pandemic delays, the WS Ranch collection came to DMNS in the fall of 2021, and work began in earnest in 2022. The collection contains approximately 500,000 diverse artifacts, and over the last two years, collections staff at DMNS have been processing and documenting the WS Ranch collection. The day-to-day logistical challenges and ethical questions presented by this large legacy collection makes it an ideal case study for reckoning with outdated collecting practices, archaeological documentation, and ethical standards in a current museum setting. In this paper, I (a DMNS anthropology collections assistant) will discuss the process of rehousing, cataloguing, and digitizing the WS Ranch collection, ongoing NAGPRA efforts (including the new Duty of Care provisions), and future ideas for ethical and collaborative research.

Krigbaum, John [288] see Boileau, Arianne

Krigbaum, John [308] see Caraballo-Santiago, Angelica

Krigbaum, John [213] see Liu, Chin-hsin

Kristy, Gwendolyn, and Damian Kirkwood (Wyoming SHPO)

[340] *Statewide Preservation Planning in the Cowboy State: A Community-Based Approach*

The Wyoming State Historic Preservation Office (WY SHPO) is currently developing their next 10-year statewide preservation plan. Over the course of 2024, numerous community-based efforts were conducted by the Wyoming SHPO, in conjunction with our preservation partners. The purpose of these efforts is to gain insight from the community; in this case, the community is the state of Wyoming. Five in-person workshops were held around Wyoming during the summer of 2024 where data was collected from members of the public through hands-on exercises. Additionally, a statewide survey was created and opened up to all members of the public for over three months. This paper discusses the strategies of those collaborative and community-based outreach efforts as well as their preliminary results and how those results will inform the 2027–2037 statewide preservation plan.

Kroot, Matthew, and Matt Peeples (Arizona State University)

[302] *A New Non-collection Methodology for Assessment of Twentieth-Century Sites: Results from S'edav Va'aki in Phoenix, Arizona*

Archaeologists have long recognized the curation crisis within the discipline and its drivers, including economic constraints, research practices, and even ethical principles. This paper presents a new non-collection field methodology for site assessment of twentieth-century settlements as a means of reducing the

volume of materials gathered and, therefore, necessarily curated. We discuss our field project at the S'edav Va'aki Museum property in Phoenix, Arizona, which combined archival research, pre-fieldwork crew training, initial site assessment, fieldwork tactics, internet-based crowdsourcing, and extensive in-field recording forms, photography, and hand drawing of artifacts. This non-collection methodology allowed us to reconstruct in an efficient manner novel information about the chronology of site habitation and the use of the project area, as well as some of the experiences of the people who lived in the project area and their structural position within the broader community of the post-World War II boom town of Phoenix. Such a method, while needing to be tailored to the specifics of individual projects, provides a means of reducing pressures on repositories while rapidly producing sufficient information to both meet legal reporting standards and rehumanize the past.

Kroot, Matthew [346] see Ruth, Alissa

Kruchten, Jeff [102] see Butler, Amanda

Krug, Andrew (University of Oklahoma), John Carpenter (INAH-Sonora), Guadalupe Sanchez Miranda (INAH-Sonora), and Matthew Pailles (University of Oklahoma)

[189] *Casas Grandes Vecindarios: Assessing Settlement Patterns in the Carretas Valley, Chihuahua, Mexico*

Recent archaeological surveys and excavations recorded numerous Medio period (1200–1450 CE) mounds and settlements in the Carretas Valley, Chihuahua, Mexico. This study employed geospatial measures and rank-size analysis to characterize unexcavated mounds and excavated settlements. These results were compared to previously published settlement data from other subregions in the Casas Grandes world. Our results suggest a fair degree of cultural heterogeneity within the Carretas Valley, and a similar degree of heterogeneity between Carretas communities and other vecindarios in the Casas Grandes world. This study offers a valuable addition to case studies on the organizational character of “hinterland” communities.

Krus, Anthony (University of South Dakota), Charles Cobb (University of Florida), Brad Lieb (Department of Culture and Humanities, Chickasaw Nation), and Tony Boudreaux (Mississippi State University)

[50] *Time and Temporality in Tombigbee River Drainage during the AD 1300s–1600s*

Advances in radiocarbon dating and the widespread use of Bayesian modeling are providing increased resolution to our dating of archaeological sites and assemblages. This trend has been important for achieving greater refinements in calendrical time, but it does not inherently lead to a greater understanding of experiential time. We explore these distinctions with our research in the Tombigbee drainage of Mississippi and Alabama, which has focused on the interval of AD 1000–1600. This work is part of a larger study of the Vacant Quarter depopulation phenomenon in mid-continental North America during the AD 1300s–1500s. Our Bayesian analyses of 85 dates from a number of sites provide estimates of key events in the Tombigbee's settlement history and contribute to an understanding of how the occupation and abandonment of these agricultural communities unfolded. From a calendrical perspective, these results reflect the dynamism and volatility of settlement histories, stirred to a large degree by ongoing migrations. From an experiential perspective, the temporality of these communities was established through citational practices and memory-work mediated through the built environment and landscape. We close our presentation with reflections on the middle-range research required to bridge calendrical and experiential frameworks.

Krus, Anthony [125] see Ranney, William

Kuboyama, Waka

[378] *Perforation Techniques of Greenstone Adornments in Precolumbian Costa Rica: Tools, Traces, and Social Meanings*

Celtiform pendants from precolumbian Costa Rica (500 BCE–900 CE) are characterized by skillfully decorated carvings on celtiform semiprecious rocks and minerals. A human or animal face is carved on the poll of an axe, while the bit is not decorated, leaving the edge of the axe clear. Celtiform pendants show variability in working costs and the complexity of the manufacturing process, which indicates that lapidary

artisans with diverse skills and economic status were involved in their workshops. Perforation is one of the most important techniques for production of celtiform pendants. For instance, drilling is very useful for multipurpose decoration, reworking, and intentional breakage in ritual activity. Some celtiform pendants represent craftspeople utilizing possible pump-drills, suggesting that drilling is not just a means for production but also a part of social actions or ritually meaningful activities. In order to approach the perforation techniques, a jadeite block was experimentally drilled with various types of drill-bits (wood, born, deer horn, agate, and shell), and traceological analyses were conducted. Through the results of microscopic analyses of experimental replicas and artifacts, possible tools and techniques for perforation are discussed.

Kucur, Ezra, Sarah Kennedy, and Kylie Quave (George Washington University)

[226] *Ethics in the Classroom: How Prevalent Are Ethics-Focused Course Offerings in US Anthropology Undergraduate Programs?*

Archaeology is a discipline highly concerned with ethics. On March 7, 2024, the SAA adopted a new set of ethics principles prompting a critical question: Are higher-education anthropology programs in the United States effectively teaching the diverse range of ethical facets described in these newest principles? In this student-faculty co-creative poster, we present our results from an ethics course survey aimed at understanding the impact of teaching choices in anthropology programs across collegiate academic institutions in the United States. Data was collected from over 181 institutions offering anthropology programs as of 2020, and only 5% of these institutions required an ethics course for their majors and/or minors. Our results indicate most institutions sampled do not offer dedicated ethics courses in anthropology or archaeology. If they do, these courses are usually not required. This gap raises concerns about the preparedness of students to navigate ethical challenges in the field and to be able to live up to the principles of archaeological ethics including stewardship, accountability, commercialization, public education and outreach, intellectual property, public reporting and publication, records and preservation, training and resources, and safe educational and workplace environments.

Kuhn, Steven (University of Arizona), Ismael Sánchez-Morales (Arizona Museum of Natural History), and Abdeljalil Bouzouggar (National Institute of Archaeological Science and Heritage)

[281] *The Appearance of Bifacial Technology in the Middle Stone Age of Bizmoune Cave, Morocco*

The Middle Stone Age Aterian of North Africa shows a high level of continuity in artifact forms and modes of reduction. This continuity probably reflects stable environments in near-coastal parts of North Africa, combined with the notable adaptability of *Homo sapiens*. However, one long-term trend involves the appearance of bifacial foliates in Aterian assemblages. Based on inter-site comparisons, it has appeared that bifacial foliates became a regular part of the Aterian tool kit relatively late, possibly during MIS 4 or early MIS 3. Results from recent excavation at Bizmoune cave in Morocco provide a more localized perspective on this change. Bifacial foliates are effectively absent from the earliest archaeological deposits at the site (Layer 4c), dating to MIS 5e-5c, and possibly earlier. Bifaces first appear in the transition between layers 4a/b and 4c, and they became relatively more common in layers 3 and 4a, dating to after 100 ka. There was continuity in other aspects of lithic manufacture across this interval, and tanged pieces, including points, continued to be deposited alongside the bifaces. The appearance of bifacial technology at Bizmoune appears to represent the addition of a novel procedure to an existing corpus of technological knowledge, rather than a cultural turnover.

Kuijt, Ian (University of Notre Dame)

[237] *Targeting Beauty: A First-Hand Account of the Destruction of Ukrainian Cultural Heritage*

Cultural heritage has few friends in times of war. Working as part of a collaborative international team of archaeologists and filmmakers over three 10-day visits in 2023 and 2024, we traveled through central and northeastern Ukraine filming and documenting the destruction of cultural heritage. This presentation provides a first-hand account of travels around Kyiv and Chernihiv, illustrates the destruction on the ground, and discusses the complexity of understanding and assessing the destruction of Ukrainian cultural heritage, both material and immaterial. We argue that cultural heritage management during the ongoing war in Ukraine presents three major challenges: protecting the known, securing the displayed, and identifying newly revealed cultural heritage.

Kuijt, Ian [350] see Berikashvili, David

Kullen, Douglas (Burns & McDonnell)

[94] *Tracking the Enslaved and the Emancipated at Glen Fount Plantation, Meade County, Kentucky*

Archival data on specific enslaved persons in the Antebellum South is notoriously elusive, and archaeological data usually does not provide much supporting information. Historical research conducted as part of the mitigation effort at the Glen Fount Plantation in northern Kentucky found the process of linking individual enslaved persons with post-emancipation residents to be fraught with uncertainty. Archaeological findings, however, provided insights that, coupled with census records, cemetery data, and historical accounts, allowed for the reconstruction of plausible scenarios for the life histories of certain Black plantation residents from the mid through late nineteenth century.

Kumari, Parinita [175] see Haas, Randy

Kuna, Martin (Institute of Archaeology of the CAS, Prague)

[380] *Burying Houses as a Ritual of Closure and Renewal. Two Cases from Bohemia*

Archaeology in Central Europe is increasingly aware that finds from prehistoric sites may reflect not only the original functions of settlement features but also the human activities that followed after their practical use ceased. Deposits resulting from the abandonment and/or destruction of settlement features often contain indications of ritual (structured) behavior. However, their identification is not easy, as all phases of the life cycle of settlement features may have been partly ritualized and produced some kind of “structured deposits.” The starting point of our approach to the rituals of closure is a detailed depositional analysis of pottery combined with other analyses of the settlement layers. For example, enigmatic long pits from the Late Bronze Age in Bohemia (Březnice site, eleventh century BC) have been interpreted using this methodology. In our opinion, these features represent the final phase of the abandonment (burial) of houses, which were ascribed the ontological status of living beings. The second example is the early medieval houses on a large settlement site from the seventh century AD (Roztoky). In this case, the ritual closure and renewal of houses also had a social meaning confirming (creating) the identity and mutual relationships of individual user groups (families, communities).

Kupprat, Felix [199] see Farquharson, Kyle

Kupprat, Felix [109] see Reese-Taylor, Kathryn

Kurbanov, Sharof [332] see Zaidner, Yossi

Kurnick, Sarah (University of Colorado, Boulder), David Rogoff (Independent Scholar), and Nicholas Puente (University of Colorado, Boulder)

[349] *Recently Excavated Postclassic Anthropomorphic Effigy Censers from Punta Laguna, Yucatán, Mexico*

Anthropomorphic effigy censers figure prominently in archaeological understandings of Postclassic Maya peoples. Among other functions, these censers—which are often brightly colored and include elaborate accoutrements—facilitated communication with other-than-human entities and served as idols in calendric ceremonies. Although archaeologists have recovered the greatest number and variety of these artifacts from Mayapan, Postclassic peoples throughout the Maya lowlands created locally produced versions of these vessels. Over the past several field seasons, the Punta Laguna Archaeology Project has excavated over 3,000 fragments of Postclassic anthropomorphic effigy censers, including faces, arms, and feet, found in association with various aspects of the Postclassic built environments, including miniature masonry shrines and small, uncarved stelae, though not in caves. This presentation offers an overview of these censers and considers how they inform recent debates about Postclassic practices. In what ways are they similar to, and different from, already documented examples? How does their iconography and depositional context compare to that of similar censers found at sites such as Santa Rita Corozal and Champoton? And, how, if at all, do these artifacts speak to Postclassic regional networks and Postclassic political and religious practices?

Kurozumi, Taiji [82] see Kadowaki, Seiji

Kusimba, Chapurukha [59] see Morse, Charles

Kuto, Elikplim (Northwestern University)

[103] *Modeling Human Behavior for Sustainable Development: An Ethnoarchaeological Perspective on Food Storage*

This paper investigates the potential of ethnoarchaeology to contribute to sustainable development by modeling human behavior through the study of food storage practices. Ethnoarchaeology, the study of contemporary societies to understand past societies and archaeological interpretations, offers a unique perspective on how traditional communities have historically managed resources. The combination of traditional, local, and Indigenous knowledge with archaeological insights will allow for the exploration of how past societies successfully managed resources and adapted to changing environmental conditions. By analyzing their practices, beliefs, and social structures, we can identify patterns and adaptations that have proven effective over long periods. This paper thus focuses on long-term knowledge (L-TeK) as a valuable source of information for understanding human-environment interactions and developing sustainable solutions to contemporary challenges. The study will involve mapping current traditional practices and analyzing past societies' responses to food storage challenges. Examining food storage practices offers valuable insights into how past societies successfully navigated environmental fluctuations and ensured food security. Ultimately, the findings will contribute to a more comprehensive and effective approach to sustainable development.

Kvamme, Kenneth (University of Arkansas)

[230] *Fundamental Formation Processes Associated with Open-Air Lithic Scatters*

A comprehensive mapping of surface lithic debris and stone tools in a remote and archaeologically rich region of western Colorado yields insights into their formation processes and spatial structure. This mapping includes over 25,000 items including formal tools, flaking debris, cores, and ground stone within 6–18 clusters (depending on cluster definition). In all, consistent patterns of debitage dispersal are apparent with smaller flakes generally located centrally and larger flakes distributed more peripherally. Related observations reveal that cortex-bearing and coarser-grained flakes tend to be spread more widely. These patterns are replicated through experimental knapping where larger, cortex-bearing, and coarse-grained flakes exhibit wider and highly regular dispersal patterns. Spent cores tend to be located peripheral to dense scatter centers, perhaps reflecting the “toss zones” observed among the Nunamiut by Binford (1978). Grinding slabs, used for processing seeds, nuts, and other materials, generally occur on mild slopes, offering grinding advantages seen in metate use among Puebloan peoples in the Southwest. Finally, certain activity classes appear spatially segregated, with flaking (dense debitage), grinding (ground stone), and hide preparation (unifacial scrapers) in spatially distinct localities.

Kyle-Robinson, Lachlan (University of Toronto), Melanie Pugliese, Iban Berganzo-Besga (University of Toronto), and Monica Ramsey (University of Toronto)

[67] *Precision and Progress: Using Deep Learning to Identify Wild versus Domestic Multi-cell Wheat Phytoliths*

Distinguishing between wild and domestic cereal remains is central to understanding the adoption of agriculture in the Southern Levant. Phytoliths, robust silica casts of plant cells, are a critical line of evidence for early plant use. Manually identifying phytoliths, however, is prone to human error. Deep learning (DL) algorithms are now being applied to improve the precision and speed of phytolith identification. In this poster we apply DL algorithms to differentiate between wild and domestic wheat varieties (*Triticum boeoticum* [wild einkorn], *Triticum dicoccoides* [wild emmer], *T. monococcum* [einkorn], *T. turgidum* subsp. *dicoccum* [emmer]). We then use the algorithm on archaeological materials from the Pre-Pottery Neolithic site of Beisamoun (9150–8250 cal BP). Situated at the dawn of domestication, Beisamoun provides the perfect case study to test the efficacy of our DL algorithm on archaeological materials for the first time. In the original study of phytoliths from Beisamoun we were not able to manually distinguish between wild and domestic wheat. By demonstrating the efficacy of our DL algorithm to identify wild versus domestic wheat from archaeological materials, we are making progress toward establishing an effective DL workflow system for the identification and analysis of phytolith remains.

Kyle-Robinson, Lachlan [67] see Pugliese, Melanie

Kylie Quave, Ezra Kucur [198] see Harahsheh, Maryam

Kyorlenski, Georgi (Denver Art Museum)

[354] *Negotiated Empire: Alliance Building during the Inca Civil War*

Crises are critical temporal nodes that offer unique, and perhaps clearest, views of how imperial projects function, as they present acute stresses to the institutions that define them, whether these stresses are overcome or not. As the Inca Civil War shattered the largest Indigenous American empire through tremendous loss of life in battle, political fragmentation, and erosion of the legitimacy of the Inca imperial project, it offers a unique view into the mechanics of the Inca state. During the dynastic war, Atahualpa controlled the semi-professionalized Inca army, despite Huascar sporting a stronger initial claim. Alliance building and constant negotiation between the two claimants and provincial leaders were critical in the course of the conflict. In the process of alliance building ideology, governance, and military strategy were all inextricably intertwined. Huascar went so far to link his entire legitimacy narrative of “return to origins” with his alliance with the Colla of Lake Titicaca, which pointed to his relationship with long-term history of power in the Andes. This Inca case speaks to the nature of empires, understanding such states not merely as hegemonies and imperial subjects not merely as resisting but as intertwined in continuous negotiations.

Labarca, Rafael [53] see Ugalde, Paula

LaBelle, Jason (Colorado State University), and Kelton Meyer (Colorado State University)

[280] *Return to Lindenmeier: A Folsom Landscape on the Edge of the Plains and Rockies*

Herein we follow the trail of David J. Meltzer, who for the past 40 years blazed a distinct path through the Clovis and Folsom archaeological record. And though some of this is well-trodden territory, David foraged new insights regarding these ancient peoples through his historical scholarship, interdisciplinary research, and innovative field techniques. In this presentation, we return to the Lindenmeier Folsom site in northern Colorado, inspired by David’s similar efforts elsewhere. Though first noted a century ago and extensively excavated by the Smithsonian Institution in the 1930s, the Lindenmeier site has much to tell us about Folsom mobility and settlement systems. Our recent excavation suggests a bison kill and camp along its eastern margin that when combined with previous investigations of the site suggests a story of repeated visits to this favored hunting ground perched on the edge of the Plains and Rockies. Rather than supporting a single Folsom adaptation, Lindenmeier once again exemplifies the complexity of hunter-gatherer lives flourishing at the end of the Pleistocene.

LaBelle, Jason [179] see Larmore, Sean

LaBelle, Jason [300] see Pauly, Andrew

Lacaprra, Mary [219] see Hopwood, Marie

Lacosta Ramírez, Teresa

[294] *The Aierdi Site: A Roman-Era Mining Complex in the Western Pyrenees*

One of the Roman Empire’s interests in its provinces was the exploitation of their mineral resources. In the region of the Western Pyrenees, the empire promoted mining activities for gold, silver, iron, and copper. Notably, the mining complex in the Aierdi Ravine (Lantz, Navarra, Spain) stands out for its size and exceptional preservation, with copper extraction being the primary resource. An initiative by the General Directorate of Culture of the Government of Navarra, in collaboration with the Lantz Municipal Council, has launched a project to catalogue and research the mining complex. A multidisciplinary and international team is studying both the surface and the underground of the ravine to understand how the mining system operated in this corner of the empire 2,000 years ago.

Ladefoged, Thegn (University of Auckland)

[173] *Kaitiakitanga and Ecodynamics on Ahuahu, Aotearoa New Zealand*

Ahuahu was one of the first places in Aotearoa New Zealand settled some 700 years ago by Polynesians from Hawaiiki. The small 19 km² island situated 6 km off the Coromandel peninsula would have been a welcome

sight for the ancestors of Ngāti Hei and Ngāti Huarere who trace descendancy from Te Arawa to Ahuahu. Guided by foundational Polynesian principles the settlers learned to live in a fundamentally different environment and developed unique *kaitiakitanga* (values, principles, and practices of guardianship) and *tikanga* (customary environmental practices). Current models of early Māori settlement stress environmental impact and resource overexploitation which underestimate the complexity and sustainability of Māori land use, management, and engineering. Our transdisciplinary project is studying alternatives by integrating data from *kōrero tuku iho* (intergenerationally transmitted information), paleoecology, and archaeology with modeling simulations. Initial results suggest that processes of niche construction included perturbations from forest clearance with subsequent erosion and valley infilling. The introduction of cultivars, the construction of horticultural infrastructure, and the use of soil additives (charcoal, mussel periostracum, FCR) altered feedback relationships within a swampland. By integrating diverse datasets, we provide insights into the dynamics and sustainability of *kaitiakitanga* and the reciprocal causation and intergenerational ecological inheritance on Ahuahu.

Laforge, Marine [345] see Marguet, Louis

Lahaye, Christelle [165] see Boeda, Eric

Lalo Jacinto, Gabriel [325] see Hernandez, Isabella

Lalo Jacinto, Gabriel [376] see Paris, Elizabeth

Lalo Jacinto, Gabriel [122] see Primeau, Kris

LaLonde, Rylee [321] see Teja, Melissa

Laluk, Nicholas (University of California, Berkeley)

[110] *Indaa binatsikeşes: Cyclical, Reciprocal, and Relational Understandings of Nígosdzán*

As an evolving discipline that is hopefully and truly continually moving toward a path where Tribal and Indigenous communities across the world have complete control over their own identities, heritage, histories, and futures, how do we continue to challenge settler colonial narratives that continue to dominate the structure, definitions, and interpretations of time and space. How do we “blur the lines” or “flip the script” to really foreground Indigenous conceptions of land, time, and space that not only ground such cultural foundations as empirical but contribute to reciprocal bonds with Nígosdzán (Mother Earth) since time immemorial and continued community well-being? This paper embraces what Rifkin (2017) states as “Indigenous temporalities,” which look to engage the presence of Native experiences and how such experiences in reference to conceptualizing modes of Native time might exceed non-Native mappings and histories. Through an Ndee (Apache) lens focusing on such conceptions as place, reciprocity, and relationality, various examples will be discussed that not only might help archaeologists to better understand “Indigenous temporalities” but how these conceptions can be engaged as expressions of Indigenous temporal sovereignty as well.

Laluk, Nicholas [375] see Roos, Christopher

Lam, WengCheong (Chinese University of Hong Kong)

[392] *Forging Power beyond War: Iron Innovation in the Guanzhong Basin and Its Role in the Qin-Han Transformation*

The Qin state is often regarded as a war machine, renowned for its military prowess that led to the unification of China. However, recent archaeological discoveries from Xianyang, Shaanxi Province, suggest that advancements in iron technology were equally vital to this transformation. Despite the relative scarcity of early iron artifacts, new metallographic analyses and excavation reports from the “capital metropolitan area” reveal significant technological developments in the Guanzhong basin, particularly in the production of *chaogang* (fined iron) and iron-working techniques used for manufacturing both daily-use tools and military weaponry. This presentation evaluates these innovations and explores their implications for broader social and technological shifts during the Qin-Han transition. By comparing existing data from the Han period in other regions, it highlights emerging patterns of regional “technological divergence” between core and

peripheral regions in the production and supply of metal goods—patterns that shaped the trajectory of early imperial China.

Lamb, Trevor (Boston University)

[214] *Roasted and Boiled: Integrating Macrobotanical and Starch Analysis to Understand Wild Root Vegetable Use in Alaska's Kodiak Archipelago, 3200–200 BP*

In Alaska's Kodiak Archipelago, and the North Pacific and Arctic more broadly, the anthropological conversation has focused heavily on the importance of marine mammals and fish to subsistence and cuisine. Plants are largely missing from the conversation despite strong evidence from traditional knowledge and historical accounts that plants—and especially “root foods”—were of critical importance in the past. Root foods were both an important source of carbohydrates and flavor. Nootka lupine (*Lupinus nootkatensis*) and wild onion (*Allium schoenoprasum*) were slow-roasted in pits to unlock their respectively sweet and allium flavors, while tender chocolate lilies (*Fritillaria camschatcensis*) were boiled and pureed or ground up and stockpiled as starch cakes. I present an integrated paleoethnobotanical approach to “see” different forms of culinary practice—such as roasting, steaming, and boiling—in the archaeological record. Specifically, I suggest that an integrated analysis of charcoal and macrobotanical fragments of Underground Storage Organs (USOs) recovered from roasting pits and storage features coupled with an analysis of starches recovered from burned residues adhered to pottery allows me to situate root foods in their culinary roles over a 3,200-year-period of history in the Kodiak Archipelago.

Lambert, Joseph [223] see Kingery, Adam

Lambert, Shawn [237] see Diboyan, Larra

Lambert, Spencer, and Mark McCoy

[87] *A Preliminary Study on Food and the Emergence of Archaic States in the Hawaiian Islands*

Archaeologists have long been interested in religious food restrictions and how they developed. The ethnohistoric record contains a rich account of the types of food that were restricted to past Native Hawaiians by social rank and gender. Such a record can be used by archaeologists to examine the archaeology of taboo in the Hawaiian Islands. This preliminary research generates faunal data from cultural resource management reports, previously published articles, and newly obtained preliminary data to examine when religious food restrictions developed in the Hawaiian Islands, and how and if their development coincided with the rise of archaic states. To do so, we analyze differences in the relative frequency, size, and variability of taxa at household features along the Kona and Kohala coasts of Hawaii Island. We also use the Gini coefficient as a means to track food inequality according to rank and gender, and how such inequality developed in terms of the archaic state.

Lambert, Spencer [245] see Davidson, Jaron

Lamoureux-St-Hilaire, Maxime, and Rubén Morales Forte (Tulane University)

[322] *The Cultural Heritage of Dolores (Petén, Guatemala) from the Perspective of Its Grassroots Archaeological Community*

The Dolores Slow Archaeology Program (DSAP) is involving the grassroots archaeological community of Dolores (Petén, Guatemala) in designing a sustainable, community-driven archaeological project. The first three-year phase of this project is entirely ethnographical, or ethnoarchaeological. We have now led interviews with 36 archaeological professionals from (or working in) Dolores, documenting their life history in archaeology, relationships with scholars, and hopes and desires for a future, local excavation program. Besides learning about the impressive contributions of Doloreños to the field of Maya archaeology over the past 45 years, one of the most interesting outcomes of our study has been discovering the cultural, or ancient Maya, landscape of Dolores through emic lenses. This poster presents the results of the first two seasons of DSAP with an emphasis on (1) how Doloreños perceive the rich Dolores archaeological landscape, (2) how they engage with it, and (3) how they wish to investigate it. Join us to discuss slow archaeology, learn about our methods and outcomes, and watch key interview excerpts.

Lanaud, Claire [58] see King, Adam

Lancaster, Jd [107] see Whitley, David

Lancaster, Jd [183] see Wriston, Teresa

Lancelotti, Carla (Universitat Pompeu Fabra)

[103] *Looking at the Present to Understand the Past or Vice Versa? The Role of Long-Term Knowledge in Present and Future Policies*

In this paper I reflect on how an ethnoarchaeological approach to food sustainability can potentially impact the design of sustainable policies by offering an alternative perspective to mainstream knowledge. In recent years the incorporation of time-tested practices, encompassing Traditional Knowledge (TK), Local Knowledge (LK), and Indigenous Knowledge (IK) into the framework of sustainable agrifood systems has gained substantial traction. While TK encapsulates millennia of experiential wisdom and practices well adapted to the environmental and climatic conditions, the insights derived from Long-Term Knowledge (L-TK) have yet to be fully harnessed. Building on the results of the RAINDROPS project (Resilience and Adaptation to Drylands) I will showcase how a combination of ethnographic modeling and archaeological data can potentially contribute to devising sustainable practices for agriculture in arid and hyperarid areas.

Landau, Noah [184] see Kardulias, Drosos

Lane, Kevin (Universidad de Buenos Aires), and Luis Coll (Instituto de las Culturas, Universidad de Buenos Aires-CONICET)

[331] *A Return to Special Function Settlements: The Spatial Dynamics of Gathering in the Ica Highlands (AD 1000–1532)*

In the 1990s, Parsons, Hastings, and Matos identified “Special Function Settlements” describing habitation sites with dense clusters of agglutinated structures and circumscribed open areas in the highlands. They theorized that these places functioned less as permanent settlements and more as spaces where people congregated and interacted. Special Function Settlements situated at the liminal junction between ecozones served as aggregation sites for different social, economic (herders and agriculturalists), and possibly ethnic groups to coalesce around shared feasts and rituals. In the Ica Highlands, Special Function Settlements straddled the *yunga-kichwa* and the *kichwa-puna* ecozones potentially serving two distinct types of pastoralist transhumance, a high-altitude pastoralism (HAP) and a low-altitude pastoralism (LAP), and their concomitant agriculturalists. This paper presents the results of drone survey, least-cost analysis, and GIS to model the patterns of movement from the different areas to these Special Function Settlements, while ethnohistoric data will indicate when these commensal gatherings might have occurred. Following, I will focus on the Late Intermediate (AD 1000–1400) and Late Horizon (AD 1400–1532) Special Function Settlement site of Viejo Sangayaico to trace how commensal rituals changed emphasis during this transition from the local to the imperial.

Langdon, Pete [173] see Sear, David

Langevin, Erik [174] see Vandavelde, Ségolène

Langgle, Melanie, and Mark Schurr (University of Notre Dame)

[223] *The Ceramic Analysis of the Collier Lodge Site (12PR36)*

The Collier Lodge site (12PR36) is on the southern edge of Porter County in Indiana in the northmost part of the Kankakee Marsh. The archaeological site is uniquely represented by its extensive ceramic assemblage that spans from 1000 BC to historic times. Despite this trove of ceramic data, the chronology of the site and northwestern Indiana region has been unresolved. This research established a chronology based on the pottery found at Collier Lodge from archaeological excavation from 2003 to 2023. It then utilized comparative sites to determine the appropriate archaeological phase concurrent with the ceramics found. The research uses ceramic analysis to gain insights into the cultural, social, and historical contexts that shaped the Collier Lodge site. Using quantitative and qualitative data, patterns regarding the ceramics’ styles and

functionalities, trade routes, sources, and site formation processes were established. This study pinpointed when variations in ceramic assemblages occurred at the Collier Lodge site and implemented the theory that the variety of wares is credited to the interaction among a range of prehistoric Indigenous groups found in the heartland of America. These interactions, and occasional co-habitation, led to a culmination of cultural practices regarding ceramic manufacture and adaptations of style.

Langlie, BrieAnna (Binghamton University), Lauren Kohut (Winthrop University), Matthew Velasco (Cornell University), and Antonella Rivera Tames

[192] *Field Diversity in Achoma, Colca Valley, Peru*

Around 1100 CE, a century-long drought ushered in an era of political balkanization and prolonged conflict across the highland Andes. During this time, known locally as the Late Intermediate period (LIP; 1100–1450 CE), people built defensible hilltop settlements and refuges where very little farming is carried out today, particularly in the Colca Valley. Residents living at lower elevations likely cultivated the impressive glacier fed terraces that famously crisscross the valley's hillsides. How did farmers living at higher elevations accommodate both defensive and subsistence needs? During the austral summer of 2024 we carried out archaeological survey of agricultural landscapes at various elevations in the valley around the modern-day town of Achoma. In addition to irrigated terraces, we identified rainfed terraces, actively farmed terraces, abandoned terraces, bofedales, and corrals. This diverse agricultural system was surely an integral part of a complex economy in the Colca Valley during the LIP, but we think the importance of these other field types has been largely overlooked. In this paper we present our preliminary findings from our survey that shed light on the diversity of agricultural practice in the Colca Valley in the past and the present.

Langlie, BrieAnna [225] see Hummel, Taylor

Langlie, BrieAnna [184] see Kohut, Lauren

Langlie, BrieAnna [182] see Moss, Kelly

Lanning, Brad [68] see Sain, Douglas

Lanoë, François (University of Arizona), Joshua Reuther, Charles Holmes, and Ben Potter

[279] *People and Mammoth in Alaska*

The archaeological record of Alaska documents interactions between people and mammoth and offers a different perspective from the rest of the Americas, where research has focused on hunting. Hunting probably did happen in Alaska, but evidence for it is relatively limited. Mammoth remains in Pleistocene archaeological sites instead come mostly as ivory objects and waste from manufacturing process. Ivory objects persist in later, Holocene archaeological sites, as does the memory of mammoth in the oral history of Alaskan Indigenous peoples. Mammoth was and remains a big part of Alaskan cultures. In economic terms, mammoth mattered most as a source of raw material—a function that continued after the extinction of the species, if decreasing from an intensive to more occasional use. The symbolic importance of mammoth may have followed similar pathways, from a likely important cosmological or mythological role to a more subdued presence as a spirit being in origin stories.

Lanoë, François [280] see Zedeño, María Nieves

Lans, Aja [365] see Ur, Jason

Lantow, Vivian (University of Florida), and Gabriel Prieto (University of Florida)

[119] *Splendor Adornment: Examining Feather Textiles Uncovered from Huanchaco, North Coast of Peru, a Chimú Mass Child Sacrifice Site*

Research conducted at the University of Trujillo during July 2024 uniquely furthers our understanding of Chimú and the societal role of feathered textiles. The importance of woven textiles in the Andes is well documented. Subsequently, closely examining the materiality, compositions, techniques, and construction can tell us much about the Chimú. By extension, textiles adorned with feathers of endemic and non-endemic birds highlight the prestige that Chimú society (approx. 950–1540 CE) placed on feathers, feathered objects,

and, by extension, the person the feathers covered. In this paper, I build on previous research on Chimú textiles. This paper discusses the thorough visual analysis conducted in July 2024 of a small collection of feathered textiles and headdresses uncovered from child sacrificial victims buried at Pampa La Cruz, as well as comparative data collected from other museums. The findings have helped to reconstruct the process Chimú feather workers utilized while assembling the feathered headdresses and garments. As a result, I propose that several individuals work to attach feathers onto each textile, suggesting a workshop or apprentice-style practice, and feathered textiles and headdresses can be used to help understand the regional identity of the children buried at Pampa La Cruz.

Lapham, Heather [376] see Pavao-Zuckerman, Barnet

Lapp, Nancy [65] see Kohl, Madeleine

Lara, Catherine (UMR 8068 Université Paris Nanterre; Instituto Francés De Estudios Andinos)

[273] *Southwestern Ecuador and Northwestern Peru between AD 500 and 1470: Data, Questions, and Perspectives*
For political and geographic reasons, the extreme south of the Ecuadorian coast and extreme north of the Peruvian coast have been relatively little investigated, let alone taken as a single study area. However, pioneering models developed by archaeology in the twentieth century have considered this region as a strategic zone integrated in regional exchange circuits. Who exactly were the inhabitants of this area? How homogeneous was it from an ethnic, linguistic, and political point of view? What concrete evidence do we have of its status as an exchange zone—for example, what material elements of the cultures of the Peruvian extreme north are found in what is today the southern coast of Ecuador and conversely? What exactly was the status of this zone in relation to the neighboring coastal political nuclei of the northern and/or central Andes? Was it really a periphery or rather a rather autonomous area? Based on an updated review of archaeological, ethnohistorical, linguistic, and ethnographic data, the aim of this talk is to address these questions by proposing a balance of what is known and what remains to be known.

Lara, Sophia [213] see Liu, Chin-hsin

Lara Figueroa, Hugo Roberto [341] see Le Moine, Jean-Baptiste

Lara Tufiño, Pamela (Indiana University), and Christophe Delaere (Université Libre de Bruxelles)

[41] *An Overview of Prehispanic Underwater Offerings in Latin America and Caribbean Inland Waters*
The ritualization of inland water through underwater deposition of offerings was a widespread practice in the past. Methodological developments in underwater archaeology have advanced the description, explanation, and preservation of this fascinating evidence, unveiling a hidden dimension of ancient ritual practices and the profound cultural significance of water bodies in ancient Latin America and the Caribbean. In Mesoamerica, ritual deposits of ceremonial vessels, figurines, instruments, and ornaments, as well as human remains, have frequently been recovered from springs and volcano lakes. In the Andes, underwater offerings represent some of the most spectacular discoveries made in the lakes of the south-central region, particularly in Lake Titicaca. This presentation provides a cross-cultural overview of these ritual underwater practices, examining the nature of the offerings and the diverse and reciprocal sacred relationships with waterscapes.

Larios, Jennifer (University of Michigan)

[347] *Defining the House at Post-Collapse Jalieza, Oaxaca*

Households are often considered the smallest social and economic unit that we can evaluate through the archaeological record. Oaxaca scholars have played a key role in setting the precedent for household studies. In the Valley of Oaxaca, most household studies have focused on the Formative and Classic periods. Very little is known of subsequent periods and only a handful of studies have highlighted the Early Postclassic. The Early Postclassic is a notable time in the history of the region, as it marks the beginning of social and political changes following the collapse of the Zapotec State. This study seeks to “define the house” of the Early Postclassic settlement at Jalieza in the southern Valley of Oaxaca. Over the course of three seasons of

excavation, we have obtained data from multiple households. With this date, it is now possible to initiate the identification of the essential components of the post-collapse house at Jalieza. By “defining the house” at Early Postclassic Jalieza, we can then assess the effects of the Zapotec state collapse at multiple scales of organization beyond the house.

Larmon, Jeannie

[129] *Results of the Micromorphological Analysis from Housepit 54 at Bridge River, British Columbia*

Micromorphological studies of archaeological contexts allow researchers to better understand the anthropogenic and natural formation processes that result in the stratigraphy archaeologists study on a larger scale. At the Bridge River (BR) site in British Columbia, members of the Bridge River Archaeological Project, led by Dr. Anna Prentiss, have focused much of their research on the 17 occupational surfaces of Housepit 54, which span three periods: BR 2 (ca. 1600–1300 cal BP), B.R. 3 (ca. 1300–1000 cal BP), and BR 4 (ca. 600–100 cal BP). This poster presents the results of the micromorphological analysis of select living surfaces and hearth/thermal features from within Housepit 54. This micromorphological study elucidates the different uses of these stable surfaces and hearth/thermal features by revealing micro-artifact and microbotanical remains, as well as variation in the microstratigraphy of thermal features resulting from the use of different fuels, temperatures, and burn durations.

Larmon, Jeannie [95] see Ryan, Ethan

Larmore, Sean (ERO Resources), and Jason LaBelle (Colorado State University)

[179] *A New Look at the Southern Rocky Mountains: Crossroads of Western North America*

The Southern Rocky Mountains, stretching the length of Colorado and into bordering states, form an impressive wall across the continent. Yet, the region contains resource rich high-altitude basins and alpine environments, made accessible by dozens of passes and divides. Once conceptualized as a cultural barrier and a marginal environment, we now know that Indigenous peoples intensively occupied these basins and peaks since at least the late Pleistocene. The Southern Rockies contain a diversity of cultures and lifeways, with groups occupying the mountains on a seasonal basis, in some cases living there year-round or for resource-specific tasks such as operating game drives. Our symposium introduction conceptualizes the Southern Rocky Mountains as a crossroads and common ground of cultural traditions arriving from every direction, including the Plains, Southwest, Colorado Plateau, Basin-Plateau, and Middle Rocky Mountains. Concepts such as the Mountain Tradition sought to identify a distinct cultural tradition occupying the region, but the cumulative evidence seems to reflect diagnostic material and lithic sources more suggestive of seasonal migration in and through the mountains from neighboring regions rather than a distinct mountain-oriented cultural tradition. We reflect on these concepts to contextualize Indigenous occupation of the Southern Rocky Mountains.

Larrick, Dakota, and Nicholas Kessler (University of Arizona)

[375] *In-Built Age in Archaeological Tree-Ring Samples and Behavioral Implications*

Age disparities between wood and charcoal and their archaeological contexts are a common problem in archaeological chronometry. With high-precision dating techniques such as dendrochronology and wiggle-matching, even small age-offsets could affect the accuracy of chronological inferences and thus behavioral interpretations. In many cases of taphonomic or anthropogenic ring-loss, sapwood-based methods for estimating cutting dates are not always applicable, especially with charcoal. In these instances, wiggle-matched TPQ dates are often reconciled with subjective or ad hoc approaches. This paper describes a method for estimating taphonomic ring loss from empirical distributions of the tree-ring dates. We then provide examples of how the technique can be applied in both radiocarbon and tree-ring dating studies to yield accurate dating in archaeological sequences.

Larsen, Leah, and Matthew Tyler Brown (University of Michigan)

[189] *Understanding the Evolution of Social Organization in Pre-Inka Cusco, Peru*

Understanding past landscape use in Peru can provide important insights into human social organization. This research takes systematic regional survey data and maps likely settlements and patterns of travel using a geographic information system. Specifically, the transition to agropastoral village life in the Cusco region

during the Late Formative (600 BCE–200 CE) may help make inferences about human behaviors. This data looks at potential locations of prehistoric settlement—their estimated size, visibility, and types of artifacts found on the surface—in the Sacred Valley and surrounding areas. Using viewsheds and catchment areas of one, two, and four hours, we estimate the potential areas of interaction between each of the eight largest sites in the survey areas. Further, our results show that the location of sites may have affected their long-term success on the landscape. Studying pre-Inka societies and what they left behind allows exploration of the evolution of social organization. This research offers a better understanding of how sites were connected to each other and their overall persistence through time. This study aids in understanding where humans historically settled, why they settled in these areas, and how far they needed to travel for resources.

Larsen, Peter

[238] *Home on the (Front) Range: Settlement Ecology of Late Nineteenth-Century Homesteaders in Flatland Boulder County*

This research focuses on patterns of settlement location choices among homesteading farmers and ranchers in non-mountainous Boulder County, Colorado. This work uses household and agricultural data from the 1885 Colorado state census and an 1880 property map, analyzed using GIS. These early homesteaders have left a lasting legacy on Boulder County as it exists today, from their descendants who still live in the area to the sub/urban and rural layout of the county. By using census data and distance to/availability of natural and cultural features (such as water sources, roads, soil type, etc.), factors impacting settlement locations can be estimated as they relate to different societal groups, such as immigrants or those of differing socioeconomic statuses, were elucidated. Results suggest there were differences in farms and ranches owned by US-born and immigrant homesteaders, and among the latter, settlement with others of similar ethnic/immigration status backgrounds may have been an important factor on settlement patterns.

Larson, Greger (University of Oxford)

[339] *The Human-Dog Singularity*

The first animal or plant with which humans formed a strong commensal relationship was the wolf. This interaction led to dogs, the first of many domestic animals on which we now rely. Using the latest data from archaeological and scientific techniques including ancient DNA, I'll detail what we know about how this special relationship has manifested in a joint biological and cultural history as we dispersed together across the globe.

Larson, Kara (University of Michigan)

[87] *Eating Cats and Dogs: Understanding the Collapse of an Early Urban Settlement in the Northern Negev Desert from a Faunal Perspective*

The site of Tell el-Hesi was an Early Bronze Age III (2900–2500 BCE) urban community located in the peripheral region of the Northern Negev Desert in the Southern Levant. Notably, the occupation was short-lived (ca. 100–150 years) and rapidly abandoned before the end of the EB III period, demarcated by drier environmental conditions. Unlike most urban sites in the Levant at this time, new evidence suggests Tell el-Hesi relied on self-provisioning strategies for meat rather than relying on external provisioning from nearby rural settlements. This research questions if the engagement in self-provisioning strategies, rather than external provisioning, contributed to the rapid demise of Tell el-Hesi before the end of the EB III. Intensive faunal analyses, including cut mark analyses, were conducted across all Early Bronze Age III excavation fields from the multitude of short occupational phases. Results demonstrate a dramatic increase in species breadth consumption during periods of stress, with the final phase before site abandonment showing evidence of non-herd animal consumption, including cats and dogs. This research argues that, while novel, the meat self-provisioning strategy used at Tell el-Hesi proved unsuccessful when faced with changing environmental conditions and increased stress, leading to abandonment.

Larson, Kara [86] see Dwan, Meghan

Larson, Kara [288] see Tomazic, Irde

Larson, Tara (Eastern New Mexico University), and Emily Cole**[127]** *Grooves of the Past: Photogrammetric Study and Digital Analysis of a Folsom Period Stone Tool*

Ground stone tools (GST) were an integral component of early North American tool kits; however, there are few archaeological studies that analyze GST. The Hell Gap National Historic Landmark has yielded GST in context with stone tool reduction, ochre, and other campsite activities. Our research focuses on a unique stone tool (HG 14T200-15-935) with key areas of surface abrasion, grooving, and shaping indicative of shaft abrading. Recent research using digital elevation models shows a lack of uniformity in the grooving on the stone's surface that suggest a preference for using specific areas of the stone. For our research, we used close-range photogrammetry and 3D modeling to create a working model that can be used for further analysis, including use-wear studies. Our model provides digital archaeological data that can be used for the reinterpretation of stone tools used during the Folsom period (10,800–10,600 years ago) at this particular campsite. Our research highlights the challenges and errors that occurred throughout the process of creating a model, what adjustments were made, and our final results.

Lassen, Robert**[188]** *Preliminary Lithic Analysis at the Mill Creek Site (41AU103), an Archaic Data Recovery Excavation in Austin County, Texas***[WITHDRAWN]**

Latorre, Claudio [39] see Correa Lau, Jacqueline

Latorre, Claudio [53] see Ugalde, Paula

Lau, George (Sainsbury Research Unit)**[331]** *From Predation to Gifting in the Ancient Andes: Some Thoughts on Camelids and Reciprocity after the Chavín Cult*

One of the most salient and widespread innovations after the Chavín period cults was the depiction of camelids across various ancient Andean cultures, from Moche to Nasca, and Pukara to Recuay. We can surmise that camelids played an increasingly prominent role in their respective social worlds, expanding horizons both economically and cosmologically during the early first millennium. Using Recuay culture as its starting point, and archaeological evidence of camelid use/imagery from Pashash (Ancash, Peru), this talk considers the transformative impacts of camelids and herds, crucially as new and mobile forms of wealth in social interaction and exchange. They involved fundamental alterations to how Andean groups, like the Recuay, coordinated resources, ritual and the landscape. Ultimately, I suggest it was a move from predation to reciprocity, when camelids rapidly came to hold status as gifted objects and gifting subjects.

Lau, Hannah, Lara Fabian (University of California, Los Angeles), and Jeyhun Eminli (Azerbaijan National Academy of Sciences)**[321]** *Necrogeography and Mortuary Practice in the Antik period of the Southern Highlands of Azerbaijan: Evidence from the Dırx Zone*

Burial practices are often considered to be among the most conservative practices within cultural traditions, and changes in burial practices are often interpreted as indicators of major cultural shifts. One example of this is the adoption of jar burial practices in the first centuries CE in the South Caucasus and Iranian plateau, which is often explained as a result of culture change stemming from Parthian hegemony and wide-scale religious change. We critically assess this shift in a specific region, based on an analysis of preceding and contemporaneous burial practices in the Dırx zone of the Taliş Mountains of the south of Azerbaijan. We focus primarily on the burial site of Nəsiri Kolat, a jar burial necropolis established in the first century CE. By correlating multiple lines of burial evidence, we assess how the divergences we see from prior and contemporaneous burial traditions are reflected in this new practice.

Lau, Hannah [228] see Escalante Zarco, Angela

Lau-Ozawa, Koji**[110]** *Driving the Past: The Palimpsest Road*

The road is a quintessential piece of the American imaginary, connecting the landscape and providing senses of freedom, movement, adventure, and discovery. Reconceptualized, however, the road can stand as a structure that confines and constrains, enabling forces of domination and obfuscating history. As it remains through time, the road provides an imprint in the palimpsest of the landscape, a remaining line that connects the past, present, and future. For Japanese American incarceration, roads offer enduring features of World War II carceral infrastructure, promises of Indigenous land improvements, spaces of terror, moments of erasure, and for better or for worse, a medium to access the past. In this paper, I consider roads as archaeological features and their enduring legacies from the past into uncertain futures. By focusing on roads as they intersect with memory and histories, rather than as peripheral lines of connection, roads emerge as contentious and often unresolved spaces.

Laugier, Elise (Utah State University), and Jason Ur (Harvard University)**[160]** *Toward a Deep Political Ecology of Dryland Agricultural Systems: A Case Study from the Erbil Plain*

Dryland regions—arid to subhumid environments—are where the needs of the past, present, and future intersect, creating tensions between intensifying agricultural practices and cultural heritage protection. Currently, drylands support 18.5% of global agriculture and nearly two billion people, while facing challenges from growing urban populations, globalized economic networks, and an increasingly extreme and unpredictable climate. These regions also host some of the longest histories of agricultural land use, with rich datasets revealing how societies and political powers navigated and managed these environments over time. This paper uses a deep-time political ecology perspective, remote sensing, and modern vegetation data to examine how these forces are impacting (bio)cultural heritage and the investigation of long-term land use in the Erbil Plain, a highly anthropized dryland region.

Laursen, Sarah [228] see Wang, Chen

Law Pezzarossi, Heather**[110]** *The Impossible Heirloom: Lessons across 100 Generations of Nipmuc History*

When Nipmuc leaders requested an archaeological study of an eighteenth- and nineteenth-century Nipmuc household in central Massachusetts, our team set out to carefully situate this Indigenous family's story within nested contexts: first, within contemporary Massachusetts history, and then within more regional and global happenings after the American Revolution. Indeed, archaeological findings confirmed a Nipmuc household entangled with ongoing local, regional, and global histories in dynamic ways. But we have always been flummoxed by the recovery of what appears to be a 3,000-year-old steatite bowl from a midden filled with refuse from the 1790s to 1820s. Was there a mistake? Had we intruded on an earlier site? Had a member of the household stumbled on this item, maybe while plowing the fields, and kept it at home? Maybe they made a steatite bowl, in an older fashion, in the more recent past? While all of these explanations were carefully considered, we ruled out the direct heirlooming of this object almost immediately. One object (even a stone one) couldn't be passed down through 100 or more generations. Right? In this paper, I revisit this assumption to consider the limits of our disciplinary temporalities and the multiple paces of Nipmuc time.

Lawler, Brooks Ann (Department of the Air Force), and Brooke Hoover (Colorado State University CEMML)**[92]** *Gray Is Gold: Renovations to a Cultural Resource Program Using Gray Literature*

The Department of the Air Force Eielson AFB in Alaska has maintained historic gray literature informing cultural resource management since the early 1990s. Updated cultural resource management practices and techniques are essential to federal compliance with the NHPA but can be informed greatly by gray literature and records organization. This poster describes the challenges and successes in structuring a current federal cultural resource program using contemporary best practices and gray literature.

Lawrence, Ken [369] see Kibler, Karl

LaZar, Miranda [288] see Dombrosky, Jonathan

Lazarus, Marlee [299] see Fetterhoff, Alex

Le Moine, Jean-Baptiste (University of Montreal), Hugo Roberto Lara Figueroa (Universidad San Carlos de Guatemala), Jonathan Fournier-Crosato (Université de Montréal), and Christina Halperin (Université de Montréal)

[341] *A Multimodal Approach to Land Survey at the Site of Ucanal, Petén, Guatemala*

Ancient Maya cities provide evidence of low-density urbanism wherein household architecture and city infrastructure was often built in intimate relationship with vegetated landscapes, soils, and natural or anthropic waterways. This paper presents a multimodal anthropological approach to the understanding of low-density urban landscapes from the perspective of the Terminal Classic (ca. AD 810–950/1000) Maya city of Ucanal, Petén, Guatemala. This city prospered at a time in which droughts and human-environmental relationships were purportedly exacerbated. While surveying in the thick jungle at the site remains challenging, we've implemented a multimodal approach that combines traditional total station survey with satellite imagery, drone-based photogrammetry, random forest tree algorithms, and soil sampling for chemical analysis, coupled with registration of current forest biodiversity. We find that low density-urbanism at the site of Ucanal was characterized by a preference for upland zones for settlement, quarrying hill sides for building material that were then used as terraces or drainage, probable agricultural plots for lowland zones, and careful planning of water management features.

Lebenzon, Roxanne (University of Connecticut), and Natalie Munro (University of Connecticut)

[82] *A Biometric Meta-study on the Origins and Spread of Caprine Management in the Northern and Southern Levant*

Recently, explanatory models for plant and animal domestication have shifted from single-origin explanations to multiregional frameworks. Despite this, the timing and origins of caprine management across the Fertile Crescent remain the subject of debate, particularly for the southern Levantine region. Here, we compile an extensive database of published biometric data spanning the Epipaleolithic and Pre-Pottery Neolithic (PPN) periods (24,000–8400 cal BP). Using body size diminution as a proxy for management, we map the onset and spread of sheep and goat management in the northern and southern Levant. Our findings reveal that body size diminution for both sheep and goat occurred rapidly in the north between the EPPNB and MPPNB and then stabilized. In the southern Levant, sheep were rare prior to the LPPNB, when small-bodied sheep first become abundant. Importantly, these sheep were similar in size to managed sheep from the northern Levant. Together these data suggest the flow of managed flocks from the northern to the southern Levant starting in the MPPNB and culminating in the LPPNB. In the south, goat size declined more gradually with significant drops in both the MPPNB and LPPNB. This more gradual diminution trend favors a local management rather than a receiver scenario.

Lebenzon, Roxanne [56] see Cristiani, Emanuela

Leckman, Phillip, William Graves (Statistical Research Inc.), and Karen Swope (Statistical Research Inc.)

[270] *Data Recovery Investigations at Chilili, New Mexico (LA 847), Northernmost of the Salinas Villages*

Statistical Research Inc. (SRI) completed data recovery excavations in the village of Chilili, New Mexico. The prehispanic and colonial period pueblo of Chilili and the later historical period village were at the intersection of cultural and geographic areas of the Rio Grande region. Northernmost of the Salinas villages, Chilili bordered the Plains and Pueblo worlds. Occupied from the late 1200s or early 1300s to 1673, the pueblo witnessed population and settlement transformations and the 1598 establishment of Spain's New Mexico colony. Approximately 150 years after the pueblo was depopulated in 1673, *vecino* shepherders and farmers from the Rio Grande Valley settled Chilili. A village on the resulting land grant persists as a self-governing community. SRI considered Chilili within the themes of landscapes and mobilities. The investigation included radiocarbon dating and artifact, petrographic, X-ray fluorescence, pollen, and starch analyses. Interpretations

focused on understanding the dramatic history of Chilili's settlement at the intersection of geographic areas and cultural-historical traditions through time. The project was completed by SRI, in cooperation with the Federal Highway Administration and the New Mexico Department of Transportation.

Leddy, Katherine (Northern Arizona University), and Kaitlyn Davis (Northern Arizona University; Chronicle Heritage)

[322] *New Insights from Ceramics Legacy Collections: Identifying Cibola Communities of Practice in Northeast Arizona*

Recent NAGPRA legislation and discussions of decolonizing practices have prompted archaeologists to reshape the ways they conduct research in the US Southwest. Using legacy collections, or previously accessioned artifact assemblages, is one way to improve these research practices. This project implemented decolonizing practices, as well as the usage of legacy collections in archaeological research. Compliance legacy Cibola ceramic assemblages collected from ancestral Zuni sites in Arizona and New Mexico and curated at two institutions were compared. Implementing a collaborative approach with the descendant communities are essential to working to decolonize museum spaces. The collections were originally excavated in the 1970s and were catalogued using terms that Indigenous people have since deemed to be disrespectful and offensive. I updated the names and labels in the museum database to reflect the most up-to-date standard of naming practices and adhered to culturally respectful handling protocols. There has been a crisis about what material can be utilized for research purposes in a museum setting since more artifacts are being covered under the 2023 NAGPRA legislation. My research outlines ways in which legacy collections are able to be used without violating these terms to address questions of regional style and communities of practice.

Ledwoń, Jan [332] see Kot, Malgorzata

Lee, Aidan (Dartmouth College)

[224] *Investigating Differing Practices of Indigenous and Euro-American Plant Usage in the American Northeast*

This project presents a comparative analysis of macrobotanical remains derived from excavations at a colonial site from Dartmouth College in Hanover, New Hampshire, and an Archaic and Late Woodland site in Newbury, Vermont. The arrival of Europeans into New England presented a stark dichotomy in lifestyle between them and the local precontact Indigenous groups, despite both living in the same local environment. While Euro-Americans and Indigenous groups both relied on agriculture, including cultivating many of the same North American plants, their practices and the environmental impacts were starkly different. This paper presents identification and analysis of recovered seeds, wood, bark, nutshell, and more, as well as qualitative and quantitative analysis to determine the extent of different practices between these groups and responses to the New England environment (i.e., new crops, technology, and social practices). Results will help shed light on how preexisting cultural differences and environmental conditions contributed to environmental adaptation and changing subsistence practices.

Lee, Bonita (Florida Atlantic University), and Christian Davenport (Palm Beach County)

[32] *South Florida's Everglades: Trail Networks Connecting Ancient Sites in the Western Okeechobee*

This work locates trails in Florida's Western Okeechobee. This Everglade landscape has long been viewed as an inhospitable combination of sloughs, swamps, and sawgrass. Trail networks connected communities and allowed people to travel, exchange materials, and share ideology. This work applies multiple data sources to over 11,000 km² to find potential trails used during the Woodland period. These trails connect both archaeological sites and monumental anthropogenic earthworks. The authors use a multifold approach, comparing predicted trails to historical ground truth. Least-cost path (LCP) analysis, using lidar and hydrography, and network analysis is used to predict routes that have the least energetic cost. Predicted routes are compared to historic cadastral surveys, and military maps compiled during the Seminole Indian wars. Results indicate that land travel between monumental earthworks is one day or less, thus demonstrating high potential for regional travel.

Lee, Craig (Montana State University)

[230] *An Update on Interdisciplinary Ice Patch Research in the Greater Yellowstone Region, USA*

Ice patch research in the Greater Yellowstone Ecosystem (GYE) is increasingly interdisciplinary. Efforts to obtain paleoclimatic proxies obtained from ice patches and peri-ice patch environments are being coupled with archaeoecological observations to posit linkages between climate and the activities of Indigenous populations during the Holocene. For example, several projects have focused on obtaining ice cores from ice patches in areas where organic artifacts were exposed by melting ice. This paper highlights much of the ongoing work, but it is far from exhaustive. Projects have been employing ground-penetrating radar (GPR) to measure the depth of seasonal snow on top of ice patches, as well as to observe bottom profiles and internal structure that may eventually be correlated with direct observations made via ice cores. Others have been analyzing macrobotanical remains that coalesced on ancient melt horizons and still others have been studying associated pollen records. As of 2024, there are many collaborators participating in this research, including Indigenous community members Shane Doyle, D. Lynette St. Clair, Aaron Brien, and others.

Lee, Lisa (Institute for Canine Forensics)

[243] *Historic Human Remains Detection Dogs 101 for Archaeologists*

Canine resources have been shown to be effective at assisting archaeologists in locating historic and precontact human remains. This paper is intended as a primer for archaeologists on how to work effectively with Historic Human Remains Detection (HHRD) dogs. Topics include specific terms used in the HHRD dog profession, how the dogs work, the advantages of using them, what they can and cannot detect, factors that impact a dog's efficacy including their limitations, information to provide to an HHRD dog resource before a survey and why they need it, resultant information you should expect from them and how to use it, and answers to FAQs about HHRD dogs.

Leek, Paula [336] see McConnell, Ryun

Lefebvre, Karine (Centro de Investigaciones en Geografía Ambiental, Universidad Nacional Autónoma), and Maria Lizeth Hernández Velázquez (Estudios Mesoamericanos, UNAM)

[330] *Interacciones novohispanas en el norte de Michoacán, un acercamiento a través del material cerámico*

La conquista española a principios del siglo XVI tuvo un impacto considerable en el mundo prehispánico. Los trastornos afectaron no sólo a la organización territorial de las sociedades, la explotación económica y los paisajes, sino también a las interacciones y redes de intercambio que mantenían las poblaciones. La integración de Mesoamérica en el Imperio español abrió nuevas rutas comerciales. Hasta ahora, la mayor parte de la información arqueológica se ha concentrado en los centros urbanos, que suelen acoger a la población española. Sin embargo, un reciente proyecto arqueológico centrado en los asentamientos rurales del norte de Michoacán ha aportado nuevos datos para la zona septentrional del actual estado de Michoacán, lo que permite reflexionar sobre la inclusión de las zonas periféricas del Virreinato en las nuevas redes de intercambio promovidas por la Corona. A partir del estudio del corpus cerámico (varios miles de tepalcates) del sitio PAI-Cerrito de Tres Mezquites, Michoacán, fechado de la primera mitad del siglo XVI hasta principios del XVII, discutiremos la integración de este sector rural a las redes de comercio local, virreinal y global.

LeFebvre, Michelle [32] see Ardren, Traci

LeFebvre, Michelle [224] see Luthra, Alisa

Lefrais, Yannick [378] see Queffelec, Alain

Legarra Herrero, Borja (UCL Institute of Archaeology)

[371] *The Power of Many: Alternative Social Histories in the Relationship between Crete and Egypt in the Bronze Age*

The discourse surrounding the presence of Egyptian artifacts on the island of Crete has predominantly centered on the concept of cultural transmission. Recent models challenge traditional colonial interpretations by recognizing the agency of local Cretan communities in integrating Egyptian materials into their own cultural frameworks. This presentation explores further this perspective by examining the social dimensions of the interactions between these two cultures. Specifically, it scrutinizes the manner in which prestigious Egyptian artifacts, typically found in rich individual tombs, were reimagined in a very distinct social context on

Crete. On the island, many of these valuable items were utilized to reinforce group ideologies and to fuel bottom-up socioeconomic dynamics, highlighting a significant divergence from their use and symbolism in Egypt. The presentation underscores the necessity of understanding the social facets of cultural interaction. What is considered elite in one culture can be transformed into assets that emphasize collective power in another. This approach requires us to acknowledge the role of broader, often overlooked populations in mediating cultural exchanges.

Legarra Herrero, Borja [49] see Martín-Torres, Marcos

Leigh, Alexander

[238] *Landscapes of Entertainment and Vice in Late Nineteenth-Century Boulder County, CO*

In the late nineteenth century, mining camps, ranches and farms, and towns of various sizes sprang up in the mountains and along the front range of what is now Boulder County, Colorado, some creating lasting communities and others being abandoned. Entertainment was essential, yet what constituted it was subjective and could quickly become synonymous with vice. Through use of historic maps, census data, and archival research, I reconstruct this historic landscape in a GIS and analyze the spatial organization of venues, venue types and quantities, temporality, and distance from residences, ranches, farms, miner camps, and other communities. I then compare these patterns with demographic data (racial and religious from census and church records) as well as notions of morality (using qualitative and ethnohistorical data) associated with communities and professions to understand why places of entertainment were established where they were. Results suggest that factors such as a broader demographic scope taking into consideration diversity of class, race, and religion as well as centralized locations would be conducive to thriving entertainment landscapes.

Leight, Megan (West Virginia University), Olivia Jones (West Virginia University), and Lisa Dugas (Big Pine Consultants LLC)

[185] *“Grit-Tempered” Women of the Mountains: Pioneering Contributions of Women to West Virginia Archaeology*
West Virginia was one of the first states to hire a “state archaeologist” in 1960. Soon after, the need for another staff archaeologist was recognized and a woman, Bettye Broyles, was hired in 1963. Bettye spent over a decade excavating precontact and historic sites in West Virginia. Her work is evident in the dozens of recorded sites, reports, and publications, including a seminal projectile point typology that established a regional chronology. Bettye’s legacy has been carried on by other notable women working in cultural resource management and the academy. Darla Spencer, whose research on Fort Ancient sites and ceramics specifically aided in identifying West Virginia artifact collections being stored outside of the state. Patricia C. Rice was a textbook author and past president of the General Anthropology division of the American Anthropological Association; she was recognized with multiple teaching awards and was known for her engaging pedagogy. Recently, women in West Virginia archaeology have been inspiring the next generation of students through teaching at state institutions and practicing archaeologists in public or private roles. Their work is helping to define a new era of archaeological practice, preservation, and policy initiatives.

Leiserowitz, Anthony [111] see Gillreath-Brown, Andrew

Leitch, Sarah

[334] *The Horses of Chauvet Cave: A Horse Girls Perspective*

The Horse Panel from Chauvet Cave is world famous and has been analyzed from many perspectives. This research paper is based on what is known about equine behavior and genetics and addresses the individuality of the horses in the panel. It provides evidence suggesting that the panel represents four horses of the same species, but of different ages, at the same moment as they react emotionally to the rambunctious rhinoceros portrayed to the viewer’s left of the Horse Panel. Existing preconceptions of this panel, which have stood with little reconsideration since the cave’s discovery in 1994, glaze over the fact that this panel is very likely meant to depict four distinct and individual horses of varying ages and dispositions and that these distinctions were purposeful on the part of the artist. This observation, made through the lens of an archaeologist who intimately understands the nature and physiology of equines, argues that the artist who created the Panel of Horses also intimately understood their subject and would not have made any of the artistic choices in error.

Instead, every aspect of the panel was consciously chosen to depict the horses in specific ways, conveying the animals' detailed physiology and emotions.

Leiva, Jennifer (California State University, Los Angeles), Stephanie Renaud (California State University, Los Angeles), Amira Ainis (California State University, Los Angeles), Joe Fayer (Crystal Cove State Park, Orange County), and Johanna Marty (California State Parks, Sacramento)

[125] *Analyzing an Historic-Era Refuse Deposit at Crystal Cove State Park, Orange County, California*

During the last 100 years the coastal landscape now designated as Crystal Cove State Park has seen overlapping usage by various communities. These include the Hollywood campers of the 1920s, the Japanese and Japanese-American farming communities of the 1930s, the abrupt takeover of the Coast Guard in the 1940s, and the more recent visitors and state park campers. Through a quantitative and qualitative assessment of site CA-ORA-685H, which consists of a historic-era refuse deposit, we investigate the origins of deposited materials and shifts in composition over time based on the various recordings and updates of the site. Through a recent archaeological update, we assess the current state of this deposit through comparisons with previous recordings that occurred over 20 years ago (2002), providing information about the ongoing management and preservation of the site. This research presents a comprehensive overview of the historic-era refuse deposit and its current state, offering insights from its origins and evolution to the cultural practices of its users. The aim is to contribute to the recent history of human activity at Crystal Cove State Park.

Lekson, Stephen (University of Colorado)

[102] *Chaco and Cahokia in Continental Contexts*

Tim Pauketat published *Cahokia: Ancient America's Great City* in 2009. That same year, I published *History of the Ancient Southwest*. While differently structured, the books shared similar goals: to place their protagonists—Cahokia and Southwest—in context(s), epistemologically and historically. Both offered accounts of the process of archaeology: how we know what we know. And both presented histories of the protagonists' contemporaries: what was going on at those times. Both books hinted and suggested possible dynamics between and among ancient North American societies, but neither fully connected the dots. Pauketat's 2023 *Gods of Thunder* connects the dots. I review and offer a friendly critique of *Gods of Thunder's* take on the Southwest and perhaps connect some different dots, or some dots differently.

Leloch, Michał [332] see Kot, Malgorzata

Lemke, Ashley

[277] *Surfacing Past Lifeways: Lacustrine Archaeology and Collaborative Partnerships*

One of the most significant planetary changes since the Pleistocene has been fluctuating water levels. Changes in sea level, particularly since the Last glacial Maximum, left vast landscapes once exposed and now submerged. Paleoenvironmental research and modeling of submerged landscapes has shown that they were productive habitats, and underwater archaeological investigations at these locations reveal complex mosaics of plant, animal, and human communities. While large-scale fluctuations in water level characterize the continental shelf, they were also present in large inland lakes. Interdisciplinary research in Lake Huron focusing on the Alpena-Amberley Ridge (AAR) has generated evidence of hunting architecture, lithic artifacts, and paleoenvironmental indicators during a crucial time in global prehistory. While the data from submerged sites is often high resolution and contributes to detailed reconstructions of past lifeways—researching such sites can be challenging, particularly when they are far offshore and in deep, cold water. However, such challenges provide unique opportunities for partnerships, collaborative research, accessible training, and public outreach. To conduct a landscape study, the AAR project includes archaeologists, anthropologists, computer and environmental scientists, educators, and Indigenous peoples to create methodologies for researching submerged ancient sites in lakes and beyond.

Lemke, Ashley [277] see Boyd, Matthew

Lemke, Ashley [389] see Ropp, Allyson

Lemke, Ashley [224] see Welch, Mya

Lemminger, Jennifer, Rachel Egan (Tetra Tech), and Maddison Pfeifer (TetraTech)**[298] *Sandstone and Time: Impacts of Erosion and Time on Rock Art in Weld County, Colorado***

A recently discovered rock art site in Weld County, Colorado, showed significant signs of weathering. The panels were pecked into sandstone, a highly erosion-susceptible surface. In a review of the other documented sites in Weld County, the authors found that erosion was noted as a significant threat to the majority of the resources at the time of recording. This highlights the need for these sites to be documented in detail and published prior to their destruction. This poster reviews the rock art of Weld County and addresses erosion and the value of detailed recording in order to preserve these resources.

Lentz, David (University of Cincinnati)**[106] *Cajon Project Archaeobotany and the Era of New Possibilities***

The Cajon Project, which began in the early 1980s under the direction of Ken Hirth, initiated a new concept in Mesoamerican archaeology in the wet-and-dry Neotropics. The project sponsored a team of archaeobotanists with all of the necessary equipment to develop and conduct a systematic sampling strategy designed to recover plant remains from excavations carried out by project archaeologists. This strategy was implemented early in the project at excavations from archaeological sites spread out along the Sulaco River Valley. In addition to the recovery of plant remains from archaeological sediments, the project also sponsored the collection of modern plants from throughout the lower Sulaco and Humuya River Valleys. Over 2,000 sets of plant specimens were collected, preserved, identified, and distributed to herbaria in the region and the USA. The purpose of this research initiative was to recover data from which the paleoenvironment of the region and the human impact on it could be ascertained. Moreover, an understanding of the subsistence activities of the ancient inhabitants, both in terms of sustenance and trade possibilities, was a major research objective of the project. Results of those studies and the implications for other research efforts will be discussed.

Lentz, David [239] see Vazquez-Alonso, Mariana

Leon Obando, Humberto [289] see Neff, Hector

Leonard-Doll, Katy (Antiquity Consulting)**[232] *Prairies are Cultural Landscapes: Preserving Prairie History and Archaeology in the Southern Puget Lowland***

Archaeological sites associated with prairies in western Washington provide invaluable information on the history of Indigenous landscape stewardship and resource use practices. Archaeological evidence and oral histories indicate prairies in the Puget Lowland have been managed for thousands of years. In the course of cultural resource management (CRM) in the Southern Puget Lowland, archaeological sites in these settings are often recorded as lithic isolates or small lithic scatters, and unfortunately these site types are often not ascribed historical significance. Less than 3% of precolonial prairie remains in western Washington due to settler incursion, and prairie archaeological and cultural sites remain susceptible to impacts from development and agriculture. What methods are we using to identify archaeological sites and cultural landscapes on Puget Lowland prairies, and how can we better preserve this important history? In this poster we recommend that prairie archaeological sites are components of cultural landscapes, and we suggest that status quo CRM methods are not adequate for recognizing these important sites.

Lerma, Ignacio (University of Murcia), María Novelo Pérez (Universidad Autónoma de Yucatán), and Lilia Fernandez Souza (Universidad Autónoma de Yucatán)**[236] *Use-Wear and Residue Analyses of Flint Projectile Points from Sihó, Yucatán, Mexico***

Sihó is a Maya city in the northwest of the Yucatán Peninsula, which had its apogee during Late and Terminal Classic periods (ca. AD 600–900). Research developed in the last 20 years suggests that the settlement was the center of a royal dynasty and was inhabited by a complex and multi-stratified society. The horizontal excavations of eight residential units have revealed at least five socioeconomic strata and different sorts of activities, such as farming, hunting, textile spinning and weaving, paper making, and others. Group 5D16 is a secondary elite residential unit that provided obsidian and flint artifacts and debitage suggesting use, retouching, sharpening, and recycling of several types of instruments. In this paper, we present the analyses of

a collection of 86 flint projectile points with the aim of revealing their function. Through detailed microscopic observation of the traces left by use-wear, impacts, and the detection of residues, we infer how these points were used. This approach makes it possible to reconstruct aspects of the behavior and material culture of the society that produced them. The results obtained in this type of research provide valuable archaeological information, facilitating a better interpretation of the Maya site of Sihó.

Leslie, David, and William Ouimet (University of Connecticut)

[369] *Good Vibrations: Vibracoring of Terrestrial and Inundated Archaeological Sites*

Vibracoring is a sediment coring method that utilizes a gas-powered vibrating head to drive a core barrel into sediments, reducing frictional and compressive disturbances and providing a continuous sample recovery. While geologists and geoarchaeologists have traditionally utilized vibracoring in sub-aqueous environments to characterize inundated landscapes and sediment accumulation rates, these methods are rarely applied to terrestrial archaeological sites. Terrestrial vibracoring represents a powerful tool for archaeologists to characterize the stratigraphy of sites, particularly those deeply buried and outside the reach of traditional excavation methods. Vibracoring in intertidal and inundated areas can also provide archaeologists with useful information regarding the inundation of sites through relative sea-level rise. Recovered cores also provide easy access to in situ analyses of site stratigraphy, including radiocarbon dating, portable X-ray fluorescence, X-ray diffraction, and Loss on Ignition, among others. Recent investigations involving vibracoring studies at known precontact and historical period archaeological sites in the northeastern United States are discussed to highlight the importance and impact of this technique.

Leslie, David [121] see Pisanelli, Brenna

Leslie, David [217] see Scialo, Stephanie

Letham, Bryn (Coast Mountain College), Jacob Earnshaw (Tsuga Heritage Partnerships), Spencer Greening (Gitga'at First Nation), Ian Sellers, and Rebecca Wigen (Pacific Identifications)

[240] *Holocene and Late Pleistocene Shorelines and Settlement on the Outer Northwest Coast: Archaeology of Laxnuganaks / the Moore Islands Archipelago, BC, Canada*

The outer coast of western North America is archaeologically significant because it was accessible and inhabitable for humans early on following the Last Glacial Maximum, and because its resource-rich islands necessitate unique lifeways and adaptations. We examine the geoarchaeological record of the Moore Islands, a small archipelago off northern British Columbia, where we document 16,000 years of sea-level and environmental change, and a settlement history extending back nearly as long. We demonstrate how relative sea-level reconstruction combined with GIS modeling and archaeological survey allow us to identify abundant archaeological sites associated with changing shorelines. Archaeological findings include an ~8,500-year record of faunal remains, including early Holocene dogs and whales, and showing long-term marine focused subsistence; projectile points, obsidian microblades, and other lithics including intertidal assemblages from the Late Pleistocene; and diverse habitation sites with multi-millennia persistent occupation. Despite their “remote” location, the dense and prolific archaeological deposits across this tiny and isolated archipelago indicate that the islands were persistently and intensively used and occupied from the Late Pleistocene through the Holocene. This accords with the oral histories of the Ts'msyen First Nations that assert the Moore Islands—*Laxnuganaks*—as an origin site and historically significant locations.

LeTourneau, Philippe [191] see Throgmorton, Kellam

Lev, Ma'ayan [54] see Yeshurun, Reuven

Levchenko, Vladimir (ANSTO), Carmen Zhou (ANSTO), and Fiona Doessel (ANSTO)

[174] *Oxalate Minerals for Radiocarbon Measurements: Further Studies on Chemical Pretreatment*

¹⁴C AMS allowed targeting oxalates growing on rocks (mainly whewellite and weddellite) as potential dating material for rock art. Studies have confirmed that carbon in oxalate crusts comes not from the substrate on which they grow but most probably originate from microbiota on surfaces. Additionally, oxalates associated

with rock art come from plants sap used as a binder for pigments. Oxalates on the surface exist in a mixture with other materials, which could be carbon bearing contaminants. Chemical pretreatment methods to isolate and target a specific compound (calcium oxalate) were developed. One approach to isolate oxalate and remove possible contaminants, with a subsequent closed-tube combustion was successfully tested in independent laboratories and applied to oxalate crust samples. However, some criticism was also expressed, noting that occasional contamination could still pass through. Here we present a modified version of the isolation—closed tube combustion protocol hopefully improving its selectiveness and minimizing possible losses in pretreatment. New protocol was tested on standard samples, demonstrating extraction yields over 70% and no fractionation or contamination of extracted material. The parallel processing with new and old protocols of a set of environmental samples from a range of locations was done. Results are presented and discussed.

Levchenko, Vladimir [174] see Finch, Damien

Leventhal, Richard (University of Pennsylvania Museum of Archaeology and Anthropology)

[170] *Continuity of Resistance after the Maya Social War: 1901–2024*

The Maya Social War (originally called the Caste War of the Yucatán) was a massive rebellion and disruption of the mid-nineteenth-century political, social, and economic systems of the Yucatán Peninsula. This rebellion (1847–1901) can be identified within some archaeological contexts. But this eruption is simply the most visible form of resistance over a long period of time. As argued by James C. Scott, resistance within colonized communities is a constant process ranging from small-scale, individual acts of resistance to a massive rebellion such as the Maya Social War, initiated in Tihosuco in 1847. Within this paper, I want to examine the long-term processes of resistance that have continued from the supposed “peace of 1901” into the present day. These acts of resistance, within and by the community of Tihosuco, range from the physical removal of federal and state government officials to the ongoing attempts to live outside of the official modern settlement system of defined communities, or to attempts by the community to control its own construction of identity. Few of these acts of resistance are visible archaeologically but they demonstrate the importance and viability of Scott’s “everyday forms of resistance.”

Levi, Laura (University of Texas, San Antonio)

[52] *When Is a Hinterland? Political Affiliation and Placemaking among the Prehispanic Maya*

Hinterland is one of the most under-interrogated constructs in lowland Maya archaeology. At best, it is used to designate areas between large precincts of monumental architecture, and therefore implies notions of architectural scale as well as physical and social distance. At worst, it is conflated with contemporary understandings of the rural. However, glyph translations make clear that the ancient Maya did not label places as we do, nor did they organize those places according to schema that correspond to our own. Using the PñBAP site of Wari Camp as a springboard for discussion, this paper will consider the value of “hinterlands” as an analytical category, with specific consideration given to the spatial consequences of ancient Maya practices of political affiliation and placemaking.

Levine, Marc (University of Oklahoma)

[347] *Knives Out: Excavations at the “House of the Blademaker” in Tututepec (Yucu Dzaa), Oaxaca, Mexico*

Tututepec (Yucu Dzaa) was a Mixtec capital that controlled much of coastal Oaxaca (Mexico) during the Late Postclassic period (AD 1100–1522). Since 2005, residential excavations have focused on commoner lifeways, including patterns of domestic production, consumption, and exchange, and how these shed light on Tututepec’s broader political economy. This paper reports the results of the first excavations carried out in the Mixtec capital’s urban core at the “House of the Blademaker.” This household’s name reflects the compelling evidence for obsidian blade production recovered at this locale. Preliminary analysis indicates that obsidian was imported in the form of well-prepared cores, with over 90% sourced from either Pachuca or Pico de Orizaba. The residents of this household appear to have exchanged these blades directly with their neighbors or through Tututepec’s central marketplace. This paper also compares residential data from the House of the Blademaker with that of previously excavated households in a neighborhood on the northeastern outskirts of Tututepec.

Lewis, Annabelle (University of Colorado, Boulder)

[350] *Thinking Spatially about the Dead: Using GIS to Examine Upstate New York's Nineteenth-Century Cemeteries*
 Geospatial analysis has much to offer historic cemetery archaeology. Recognizing the lived-in landscapes past people moved within through geospatial analysis allows us to visualize historic cemeteries more holistically and recognize their important roles as sites for social and economic interactions at multiple scales. This paper follows the author's dissertation research, presenting case studies from geospatial analyses of four historic cemeteries in Madison County, New York. The author combines traditional questions of historic cemetery archaeology, such as stylistic change over time within a site, with site- and regional-scale GIS analyses to visualize the shifting choices people made about how to care for their dead in complex social and economic contexts. Each cemetery studied demonstrates unique mobilizations of American Victorian mourning customs, influenced by local town histories, economic opportunities, and constraints of the landscape. While the cemeteries studied are interesting as individual sites, the regional scale reveals the dynamic negotiation of cosmopolitan mortuary practices by rural communities, raising questions about the validity of the assumed urban/rural divide in nineteenth-century Upstate New York.

Lewis, Annabelle [276] see Califano, Matthew

Lewis, Annabelle [238] see Prieto, Victor

Lewis, Brandon (Santa Monica College)

[109] *The Long and Winding Road: Guatemala City to Rio Azul (and then to the Programme for Belize)*
 The Proyecto Regional Ixcanrio and Programme for Belize Archaeological Projects have provided an unparalleled opportunity for creative research and professional collaboration. Under the unconditional guidance and support of Dr. Fred Valdez, critical advances in our understanding of ancient Maya society have been generated. This paper will briefly discuss the author's research findings related to specialized lithic production at Rio Azul and the mounting evidence for a significant Early Classic presence at the site of La Milpa, Belize. In the process, be advised that substantive data may very well take a backseat to the primary focus of the presentation: a retrospective narrative of the meaningful (and humorous) memories of the long and winding road with Dr. Fred Valdez.

Lewis, Helen [61] see White, Joyce

Lewis, Jeffrey (University of Oklahoma)

[122] *Regional Analysis of Late Archaic and Woodland Period Communities in the Trans-Mississippi South*
 The Fourche Maline archaeological culture is said to have encompassed modern-day eastern Oklahoma, central Arkansas, eastern Texas, and western Louisiana during the Woodland period. In eastern Oklahoma, the Wister phase is described as a Late Archaic adaptation that transitioned into the Fourche Maline culture but is absent from areas outside of eastern Oklahoma. Many previous studies have focused on culture histories that interpret Fourche Maline as simply a formative culture. These studies focused on defining characteristics that can be applied across multiple regions of the Trans-Mississippi South. As such, these studies often miss the diversity among communities occupying these areas during the Late Archaic and Woodland periods. This work focuses on regional landscape approaches to identify variability between communities that may be indicative of different traditions and practices. This research is not intended to redefine the Fourche Maline archaeological culture, but instead seeks to demonstrate how landscape approaches can highlight the issues created by culture histories with strict classification systems.

Lewis, Jeffrey [225] see Mofidi, Ethan

Lewis, Michael (Confederated Tribes of Grand Ronde), Jeremy Johnson (Confederated Tribes of Grand Ronde), Dustin Hawks (Confederated Tribes of Grand Ronde), Bradley Bowden (Historical Research Associates Inc.), and Briece Edwards (Confederated Tribes of Grand Ronde)

[206] *From McLoughlin and Mills to Ikanum and Inclusion: Broadening the Understanding of tumwata (Oregon City) History through Indigenous Historiography*

Indigenous place theories are developing “gaps analyses” of archaeological and historical datasets caused by the social contexts in which existing dominant culture narratives have been written. Methodologies for researching stories of marginalized communities are less well established. We present a decolonizing approach to history implemented/utilized by the Tribal Historic Preservation Office of the Confederated Tribes of Grand Ronde, which understands significant places as necessarily “verbed”—centered in *practices* continuously enacted by people of/in that place since time immemorial. Ikanum (traditional stories/histories) and oral histories define these relationships, both during the millennia of Indigenous lifeways and in the last two centuries of Euro-American colonization. Using tumwata (Oregon City) as a case study, we outline changes and continuities in practices such as working, meeting, hosting and exchanging across different periods of history. Emphasizing *practice* amplifies and re-centers narratives of the people and communities “hidden in plain sight,” making place accessible to all.

Lewis, Michael [64] see Johnson, Jeremy

Li, Feng (Peking University), and Xing Gao (Institute of Vertebrate Paleontology and Paleoanthropology, Chinese Academy of Sciences)

[175] *Northern Dispersal of Early Modern Humans into East Asia: Progress and Prospect*

Dispersal of early modern humans (*Homo sapiens*) into eastern Eurasia has been hotly discussed, especially in terms of their routes. Southern and northern routes have both been proposed based on different lines of evidence. For many years, scholars have focused more on the research of southern route instead of northern route. With the new data published in the past decade, especially the data from Siberian Altai, northern Mongolia and north China, a northern dispersal(s) into East Asia became clear and has attracted lots of attention. In this paper, we will mainly introduce the new studies of northern dispersal route of early modern humans into East Asia largely based on archaeological evidence. Some latest results from our survey in Hexi corridor and western Inner Mongolia will be presented as well. Those new findings benefit our understanding on early modern human dispersals and the hominin dispersal dynamics in general in northern China.

Li, Gang

[338] *New Archaeological Findings from Emperor Qin Shihuang's Mausoleum*

This presentation introduces new archaeological findings from Emperor Qin Shihuang's mausoleum in the past few years.

Li, Jingbo

[44] *Alcohol Production and Consumption at Zhouyuan: Continuity and Change across Dynastic Transition*

This study investigates alcohol production and consumption practices at the Zhouyuan site during the Chinese Bronze Age. Using microfossil analysis, including starch, phytolith, and fungal identification, the research examines fermentation technology and use of vessels associated with brewing and consumption. By analyzing the archaeological context of these vessels, the study explores the role of alcohol in craft production, ritual feasting, and social identity. Furthermore, the research evaluates the impact of dynastic transition on alcohol-related practices, comparing the traditions at Zhouyuan during the Western Zhou period with those at YinXu during the late Shang period. This comparison highlights how Zhouyuan either preserved or changed the alcohol practices from YinXu, offering insights into the political, social, and cultural significance of alcohol across dynasties. These findings contribute to a broader understanding of ritual, identity, and political dynamics in Bronze Age China.

Li, Jingpu

[44] *Social Collapse in the Huaihai Region in Late Imperial China*

The Huaihai region, strategically interconnected with the three major regions of Jiangnan, the Central Plains, and North China, was a critical geopolitical zone in imperial China. However, as an area severely impacted by the recurrent flooding of the Yellow River, it became the focal point for numerous peasant uprisings and dynastic conflicts throughout Chinese history. During the Late Imperial period, this once-prosperous region underwent a decline, ultimately descending into poverty and collapse. This study examines the production and distribution of salt and alcohol during this period and their interaction with broader social

transformations, using these dynamics to explore the underlying causes of social collapse. The research identifies that behind the systemic issues in the salt industry and grain transportation was a fundamentally flawed political governance strategy. This approach fostered short-term prosperity for a select few industries while undermining more sustainable production and trade activities, leaving society vulnerable to natural disasters and resulting in repeated episodes of disorder and breakdown.

Li, Kim Sum (Hong Kong Baptist University)

[392] *Empire by Replication: The Making of Measures during the Qin Dynasty*

I will examine how the Qin Empire (221–207 BC) established and maintained its rule over a vast expanse of territory by practices of replication, in which the making of measuring containers constituted the primary focus in my presentation, while other materials such as armors will be brought into consideration. One of the salient achievements of the Qin Empire was the so-called unification of measurement systems, including lengths, volumes, and weights. Yet measurement systems and the technological methods employed to achieve accuracy and precision in ancient China have scarcely been explored in English-language scholarship. I hope to first investigate the material features of the containers in detail and explore the manufacturing techniques of making the containers. Whether this was achieved by a calculation of the volume of each container or the rapid replication of their models and/or molds constitutes our initial query. The containers were also useful tools for the purpose of propagandizing the establishment of the empire. We will further investigate the means by which Qin bureaucrats cultivated an awareness of the empire by widely distributing the standard containers and displaying the royal edicts inscribed on them.

Li, Xiuzhen (UCL Institute of Archaeology; University of Oxford), Marcos Martín-Torres (University of Cambridge), Yin Xia (Emperor Qin Shihuang's Mausoleum Site Museum, China), Andrew Bevan, and Thilo Rehren (Science and Technology in Archaeology and Culture Research Center, Cyprus Institute)

[392] *Aesthetics and Technology: Gold and Silver Ornaments in the Qin First Emperor's Bronze Chariots*

Among the most spectacular finds at the Mausoleum of China's First Emperor (259–210 BC) are the Terracotta Army built to protect him in the afterlife, and the two sets of bronze chariots designed and buried to facilitate his travel in his underground kingdom. Hundreds of gold and silver pieces decorate the horse bridles, harnessing belts, canopies, wheels, and the crossbow and crossbow holder attached to the carriages. This paper will present the compositional analyses, as well as investigate the aesthetic and technological features of the gold and silver parts in these chariots. Comparing these to gold ornaments made in the early Qin period (from Majiayuan site, 850–750 BC), we will discuss knowledge transfer, technological changes, and the growing appeal of gold in China during the Warring States period. Detailed observations and pXRF were used to study the bronze chariots. However, in comparison with the forging, the filigree, and granulation used to produce early Qin gold products (techniques assumed to derive from Western influences), the casting technique employed here for producing buttons, tubes, plaques, and rings seems more consistent with an indigenous tradition manifest in cast weapons and ritual bronzes produced for centuries in the central plains of ancient China.

Li, Xiuzhen [392] see Bevan, Andrew

Li, Xiuzhen [392] see Charlton, Michael

Li, Xiuzhen [392] see Yang, Ying

Li, Yue

[338] *Burial Rituals and Customs: A Study of the Horse Remains from Chariot-Horse Pit No. 2 at the Site of Yaoheyuan*

In this study, we analyzed the chariot-horse pit No.2 (CMK2) at the site of Yaoheyuan in northwestern China. We reconstructed the sequence of horse interments based on on-site extraction of horse remains and zooarchaeological analysis. We also explored the human behaviors and related ritual practices involved in the processes of horse interments based on textural records and ethnographic evidence.

Liao, Yating (University of Toronto)**[348]** *Slit Ring Manufacturing: A Case Study from the Pak Mong Site, Hong Kong*

This paper explores the manufacturing techniques of slit rings from 1000 to 500 BC in the Hong Kong region, using the Pak Mong site as a case study. Ethnographic studies and experimental archaeology are combined to conduct controlled simulation experiments with jade artifacts of varying Mohs hardness. With the assistance of modern technologies and analytical methods, the aim is to reconstruct ancient objects, human behaviors, and practical processes, providing reference data for studying slit ring production techniques at the Pak Mong site. By setting different experimental conditions, this paper compares the microwear on the slit rings and the tools used in their production with the microwear on excavated artifacts, gathering useful information about the production techniques.

Lieb, Brad [50] see Krus, Anthony

Liebert, Thaddeus (SWCA)**[98]** *Los Gavilanes: Lithic Analysis of a Cody Complex Site in the Middle Rio Grande Valley, New Mexico*

The study of Paleoindian occupation in the Middle Rio Grande Valley has been a focus of research for many decades, yet knowledge of the Cody Complex in this region remains limited due to factors such as low site density and large tracts of reservation and private land. This paper examines the lithic assemblage from the Los Gavilanes site (LA 122673), a single-component Cody Complex site in Sandoval County, New Mexico. The predominant raw material is an unsourced red to purple fine-grained rhyolite; use and discard patterns suggest this toolstone was curated while those locally available were not. The analysis of this assemblage provides insight into lithic resource procurement, tool use, and discard patterns, contributing to our understanding of Cody Complex mobility and site function. The Los Gavilanes site, notable for its dominance of this rare lithic material, offers an exceptional opportunity to explore Late Paleoindian technological organization in the region. Through detailed lithic analysis, the study enhances our knowledge of the Cody Complex in the Middle Rio Grande Valley and contributes to our limited understanding of technological complexities and subsistence strategies of late Paleoindian groups in this region.

Liebert, Thaddeus [190] see Murphy, Beau

Liebmann, Matthew (Harvard University), Christopher Roos (Southern Methodist University), and Chris Toya (Pueblo of Jemez)**[101]** *Pueblo Firescapes in the Jemez Mountains of New Mexico*

Over the past three decades the size and intensity of wildfires has increased markedly in the western United States. While this increase in extreme fire behavior has been fueled by climate change, it can also be traced to human decisions made throughout the twentieth century regarding the management of forest resources and active fire suppression. Yet the interaction between human agency, climate, and fire regimes has a much longer history in northern New Mexico. This paper describes the history of ancestral Jemez (Pueblo) people's relationships with fire, detailing the dynamic "firescapes" that were created, maintained, and transformed through human interactions with the landscape and climate. Archaeology reveals the ways in which human actions worked in concert with, and sometimes overrode, climate influences to shape a landscape of fire that transformed numerous times over the past 1,000 years.

Lierenz, Julie [192] see Cook, Robert

Lieurance, Alysha (University of Pittsburgh)**[241]** *Anticipating Community: Slow Bioarchaeology in Legacy Anatomical Collections*

Recent publications outlining ethical guidelines for the handling of human skeletal remains stress the necessity of obtaining informed consent from donors, lineal descendants, descendant communities, and/or communities of care before conducting research. However, when consent cannot be secured—as is often the case with legacy anatomical collections—these guidelines recommend that institutions with custodianship undertake additional research to identify potential lineal descendants, descendant communities, and communities of care. Researchers working with such legacy collections can facilitate this process by designing their research

to generate information that benefits not only their own studies but also descendants and communities of care that have yet to be identified. Slow science, which emphasizes research that serves the public good, provides a valuable framework for developing outputs that address both immediate research objectives and facilitates future community engagement. This presentation provides a case study outlining steps taken to improve public access to information about the Hamann-Todd Human Osteological Collection (HTHOC), identify and reduce financial barriers preventing community access to information about the deceased, and improve the accuracy of available information about the people included in the HTHOC.

Lillios, Katina (University of Iowa), Riley Pacer (University of Iowa), and Shannon Casey (University of Iowa)

[189] *Working with Legacy Data to Identify Activity Areas at the Bronze Age / Medieval Settlement of Agroal (Ourém, Portugal)*

Agroal is a hilltop settlement located in a karstic landscape along the Nabão River in central Portugal. Three seasons of excavation and survey were conducted at Agroal between 1988 and 1990 and revealed two phases of occupation: the first, during the Bronze Age (2000–1000 BCE), and the second, between the thirteenth and seventeenth centuries CE. The site's Bronze Age date is significant as it remains one of the few excavated settlements of the period in the Iberian Southwest and provides insights into social transformations following the Copper Age (3000–2000 BCE) and 4.2 kya event. During its Medieval occupation, Agroal was a rural farmstead associated with the Knights Templar (later reconstituted as the Order of Christ), whose headquarters was located 15 km to the south, in Tomar. Thus, Agroal can contribute to understanding the relationship between rural communities and urban centers of the time. The site's legacy data (maps, photographs, and finds catalogue) were recently digitized in order to carry out spatial analyses and discern possible activity areas (metalworking, animal butchery, animal corralling, food preparation, etc.). This paper presents the first results of these analyses, which will contribute to a diachronic understanding of the region's landscape history.

Lillios, Katina [85] see Robson, Archie

Lin, Mengxi [277] see Boyd, Matthew

Lincoln, Hollie [283] see Meaux, Amanda

Lindhé, Cecila [113] see Ling, Johan

Lindler, Joseph, and Nina Schreiner

[293] *Repatriation Education for Small Institutions: State-Local Collaboration at the Laurens County Museum*
Duty of Care provisions of the Native American Graves Protection and Repatriation Act (NAGPRA) took effect on January 12, 2024 (43 CFR 10.1(d)), eliciting immediate response across archaeology sectors. Media coverage of exhibit closures at high-profile institutions brought public attention to the regulatory revision and caused smaller local history museums to reconsider their stewardship responsibilities vis-a-vis Indigenous stakeholders. In this paper, representatives of the South Carolina Institute of Archaeology and Anthropology (SCIAA) NAGPRA program present efforts to educate local and county museums without prior experience of NAGPRA compliance toward collaborative exhibition, repatriation, or ethical return. We present steps to determining legal responsibility, identifying consultation or collaboration partners, and addressing the needs of legacy collections for small institutions that may or may not be subject to the act. We highlight the Laurens County Museum as a case study of a productive state-county approach to community engagement.

Lindley, Tiffany

[367] *Everyday Life at Mission San Antonio de Valero*

Within everyday life actors maintain, create, or reproduce identities. This is especially true for Indigenous inhabitants of Catholic missions in the New World. Indigenous groups were brought into the missions as neophytes and taught the daily practices of those under the Spanish Crown. Mission life was much more structured than life had been outside of the mission and for the Indigenous groups each day was occupied by

domestic or religious activities. It is through everyday practices, such as subsistence and interpersonal relationships, that contributed to larger institutions. The Spanish encouraged separate Indigenous groups to intermarry, resulting in further cultural change. The intention of the Spanish was to modify, if not completely eradicate, Indigenous culture. This paper will examine archaeological evidence from Mission San Antonio de Valero to reconstruct continuities and changes of Indigenous lifeways from pre-mission life to secularization. The paper will focus on daily domestic activities and how these behaviors contributed to a broader societal change in and around the Mission.

Linford, Samantha

[274] *Fieldhouses, Habitations, and Agricultural Landscapes on the Pajarito Plateau*

Ancestral Pueblo “fieldhouse” features on the Pajarito Plateau are defined as 1–3-room structures associated with agricultural activity from the Late Developmental through Classic periods (AD 1000–1600). Inconsistent field methods and recording practices over the past 70 years, however, have resulted in a wide variety of structures being recorded as fieldhouses, including larger architectural features likely representing residences. The inaccurate identification of fieldhouses across the Pajarito Plateau creates two distinct problems in our interpretation of the archaeological record: (1) by overcounting fieldhouses and undercounting residences, demographic reconstructions of the northern Rio Grande are omitting the presence of potentially thousands of people in the region; and (2) our ability to understand the spatial relationships between fieldhouse locations at the scale of the Pajarito Plateau with productive agricultural fields, features, contemporaneous residences, and natural landscape features is inhibited by extraneous data points that create false patterns and obscure others with interpretive value. This paper will address both problems by applying a standardized definition of fieldhouses to the existing archaeological record, reclassifying structures as residences to better understand demography, and offering renewed insights to agricultural landscapes of the Pajarito Plateau.

Ling, Johan (University of Gothenburg), and Cecilia Lindhé (University of Gothenburg)

[113] *Rock Art as a Manifestation of Power and Status in Scandinavian Bronze Age Rock Art*

In this paper we argue that the Scandinavian Bronze Age rock art can be associated with status and power and that the institutional idea of secret societies is the concept that best connects the warrior ideals shown in the rock art. It has recently been proposed that Scandinavian Bronze Age rock art was created by warrior-trader secret societies as part of the ritual practices associated with long-distance exchange activities conducted by initiates of these societies. These sodalities had a focus on surplus production and gift exchanges to establish networks of power and alliances for control of long-distance trade in valuable goods such as metals. Furthermore, we argue that this institution created exclusive pilgrimages and strived after esoteric knowledge about exotic goods, martial arts, navigation (including astronomy), and cosmopolitan affairs. A central advertising component for these groups was the making of rock art in the form of power iconography of social and ritual importance featuring war canoes, warriors, fighting, animals, myths, solar depictions, and metals. Interestingly, these warrior images are often accompanied by depictions of supernatural beings, large ships, the wearing of ritual gear especially with birdlike attributes, bi-horned helmets, masks, and other exotic items characteristic of secret societies.

Linn, Sarah (Penn Museum), Megan Kassabaum (University of Pennsylvania), and Douglas Smit (University of North Carolina, Chapel Hill)

[216] *Material Evidence of Everyday Life in West Philadelphia’s Black Bottom Neighborhood: A Community-Centered Approach*

Heritage West is an ongoing community archaeology project co-created by academic archaeologists, museum professionals, community organizations, and descendant populations. Focused on a historically Black neighborhood razed in the late 1960s by the Philadelphia Redevelopment Authority, Heritage West aims to add material weight to oral historical evidence of the everyday lived experiences of Black Bottom residents. A during-the-semester field school in fall 2023 combined public, community, and campus archaeology approaches to investigate the parking lot of West Philadelphia’s Community Education Center, where seven homes once stood. Open lab hours and community workshops throughout 2024 have allowed for community involvement through the processing and analysis of the collected materials. Using these collaborative excavation and lab methods, more than 15 Penn students and 40 community volunteers have

cooperated to document details of the vibrant Black Bottom community, shedding light on the everyday lives of those who occupied the homes from 1850 to the late 1960s, as well as on the use of the Community Education Center building as a Quaker school in the 1930s.

Lipe, William [55] see Simon, Katie

Lippert, Dorothy (National Museum of Natural History), and Sabrina Sholts (Smithsonian Institution)

[26] *Ethical Considerations for Human Remains in an International Context*

In the United States, the repatriation of Native American ancestors has been ongoing for over 30 years, governed by the National Museum of the American Indian (NMAI) Act and the Native American Graves Protection and Repatriation Act (NAGPRA). These laws do not apply to the remains of non-Native American individuals currently held in museum and university collections, leaving the remains of many thousands of people without statutory protections and requirements. New policies and programs for human remains in US museums have expanded repatriation work far beyond Native American ancestors, with growing advocacy for federal legislation modeled on NAGPRA to protect and return African American individuals in museum collections. Growing inquiries about remains of individuals from outside the United States emphasize the diversity of perspectives on human remains around the world. Here, we discuss the decades-long work on Native American repatriation by the Repatriation Office at the Smithsonian's National Museum of Natural History (NMNH), as well as new efforts underway for non-Native American repatriation by the recently established Human Dignity program. Consent and consultation are foundational for work with non-Native American human remains under current NMNH policies, and we examine how they shape variable processes for their treatment, care, and return.

Lippiello, Lauren (Frederick)

[390] *Connections between the Solar Cycle and Religious Performance in Predynastic Egypt: Analyzing Rock Art from Khor Abu Subeira South I, Aswan, Egypt*

This paper provides a detailed interpretation of the rock art site Khor Abu Subeira South I (KASSI), Egypt during a transitional stage in the political and social development of ancient Egypt. The various thematic programs in use at the site indicate that the site transforms from its initial use as a hunting ground to a location used for ritual performance by the early Naqada IIC period. Using time lapse photography, the author identifies human modification of the landscape (rock art) that uniquely and purposefully interacts with natural phenomena (light and shadow) that serves to (1) highlight key phases of the solar cycle and (2) create a stage for ritual (performance) in perpetuity by the Naqada II elite (3650–3300 BC).

Lira-Lopez, Yamile [343] see Ruiz, Judith

Litov, Vlad

[279] *Elephants and Large Butchery Tools in the Lower Paleolithic of Western and Eastern Asia*

Allocation, procurement, and butchering of proboscideans and megaherbivores were significant to the subsistence of Lower Paleolithic hominins, supported by the persistent Acheulian tool kit. In the Levant, a faunal change around 400,000 years ago, characterized by the declining availability of megaherbivores and the extinction of elephants, coincides with the end of Levantine Acheulian lifeways and the increasing reliance on smaller-sized prey. A notable manifestation of this process is the abrupt and near-complete disappearance of heavy-duty stone implements, including chopping tools, handaxes, cleavers, massive scrapers, and other types. These large tools may have been crucial for performing heavy-duty tasks that required significant loading force, enabling the effective processing of substantial megaherbivore carcasses. At the same time, the emergence of a new set of lighter tools may reflect the practical and ontological adaptability of Late Lower Paleolithic hunter-gatherers to the changing ecological conditions in a landscape devoid of elephants. A contrasting scenario may be observed in China, where the continuous presence of megafauna may have contributed to the prolonged use of traditional heavy-duty core tools and other butchery implements. In Northern China, significant changes in lithic technologies appear around 50,000 years ago, potentially in response to the late Quaternary megafauna extinctions.

Litster, Mirani**[59] *Cowry Connections: An Archaeology of Early Globalization in the Maldives***

Modern examples demonstrate that islands occupy an important role in globalization events, and remote islands often have a specialized geopolitical and economic function. In this paper I will explore how early globalization is reflected in remote island use, through an examination of the Maldivian archaeological record. Based on current evidence, the islands were peopled during an oceanic expansion of Buddhism from South Asia, in the centuries around the BCE/CE transition. Owing to a limited terrestrial resource based, Divehi relied on marine resources and trade with adjacent areas and the broader Indian Ocean World. The archaeology of the early Buddhist phase has been the subject of limited archaeological research, despite there being evidence for the production and export of cowry shell money (*Monetaria moneta*). I will present the results from excavations in the north-central, central, and southern atolls, and discuss the findings within Jenning's model of a global culture, finding that while globalization is generally associated with cultural homogenization, the specialized function of many remote islands as a result of globalization has, paradoxically, led to the formation of human communities and lifeways that are highly distinct.

Little, Holly [373] see Pobiner, Briana

Little, Lexi [340] see Wright, Ian

Littler-Klein, Charlotte (University of Toronto)**[278] *Toeing the Line: Geometric Morphometric Analysis of Neolithic Aurochs Phalanxes from Tamsagbulag, Mongolia***

Cattle domestication is well understood in Europe and the Near East, however the same cannot be said for East Asia. While cattle were long thought to have been introduced from Western Eurasia, increasing evidence suggests that the management of indigenous aurochs predated this introduction (Brunson et al. nd; Zhao et al. 2021). Theoretical approaches to domestication now recognize it as a multilocal process involving multiple independent domestication episodes and introgression from local wild and managed herds (Zeder 2015). Genetic evidence points to the likelihood of several domestication episodes in Europe, with frequent interbreeding between wild and domestic cattle (Cubric-Curik et al. 2022), and there may have been similar processes occurring in Mongolia, with the site of Tamsagbulag as a potential "ground zero." Geometric Morphometrics (GMM) provides an opportunity to better understand morphological changes associated with the domestication processes. A GMM analysis of the first and second phalanxes from Neolithic settlements at Tamsagbulag revealed that the Tamsagbulag aurochs are a morphologically distinct group. Difference in phalanx morphology observed between species appear to be the result of the differential locomotive demands imposed by a species' natural habitat. GMM enables us to better understand domestication processes in historically understudied regions like Mongolia.

Liu, Chin-hsin (California State University, Northridge), Karen Mudar (National Park Service), Vincent Pigott (Penn Museum), Sophia Lara (University of Florida), and John Krigbaum (University of Florida)**[213] *An Investigation into Non Pa Wai, Its Human-Landscape Relationships and Their Regional Implications in Central Thailand***

Non Pa Wai (NPW) is one of the three Thailand Archaeometallurgy Project sites in the Khao Wong Prachan Valley in Central Thailand. It yielded evidence for early millet farming (ca. 2300–1800 BCE) and for substantial copper smelting in later sequences (ca. 1200–500 BCE). Here we explore the relationship between the NPW people and their surroundings as the site went through phases of landscape modification to accommodate subsistence and craft production. Tooth enamel and bone samples representing 25 humans from varied mortuary, spatial, and temporal contexts were analyzed for light and strontium stable isotopes. An ecological baseline was reconstructed based on isotopic data from NPW fauna and previously analyzed archaeological fauna from Central Thailand. Results suggest a human diet constituted of tightly clustered mixture of C₃–C₄ and mid-trophic resources, with no marked variability temporally or by sex. Low strontium variability portrays a community of a majority of local individuals with limited movements. We infer that the NPW people consumed a diet involving locally available and wide-spectrum resources throughout the site

occupation. When analyzed on the regional scale, this locale-specific dietary pattern is observed across Central Thailand and adds to the discussion of the inter-community structure of the region.

Liu, Chin-hsin [36] see Darlington, Emily
Liu, Chin-hsin [381] see Mousalu, Marineh

Liu, Junying [182] see Erauw, Céline

Liu, Tanzhuo [174] see Wu, Ying-Li

Liu, Yanchang [320] see Huang, Xinyi

Liu, Yi [64] see Athanassopoulos, Effie

Liu, Yiting [279] see Flad, Rowan

Livermont, Ben [125] see Merchant, McKenzie

Livesay, Ali

[298] *Let's Get Campy: Documenting and Exploring a CCC Camp in Northern New Mexico*

While most people associate Los Alamos National Laboratory with the Manhattan Project (1943–1947) era of US history, there are earlier cultural resources that date to historical events significant at both the state and national levels. One such resource is a Civilian Conservation Corps (CCC) camp that was used to temporarily house laborers. The CCC camp located in the southwestern corner of the laboratory and known as the Water Canyon site F-19-N was surveyed and updated in preparation of an upcoming tree-thinning project for wildland fire readiness. This poster takes a cursory examination of the relatively ephemeral layout and remnants of that camp to attempt to glance into lives of the men housed at the camp. What groups constituted the labor force? What narratives can be gleaned from the assemblages? Are there similarities or can connections be made to the nearby CCC camp at Bandelier National Monument, which was occupied after the Water Canyon campsite?

Liwosz, Chester

[270] *Game Theory: Improving Database Integration Using Game Engine Software*

Rapid technological development has indelibly reshaped archaeological practice. We now employ technologies like GPS and UAVs to map and understand archaeological landscapes in unprecedented detail. Likewise, the computer sciences empower project managers to cross-link archaeological evidence with locations and attributes, facilitating big-data type analyses. Rapid changes also bring rapidly developing challenges: new software and hardware have steep price tags, knowledge of their use is not readily accessible to independent and tribal entities, and commercial products are subject to unexpected termination. All this leaves data fragmented, idiosyncratic, and utterly arcane to the uninitiated. To dismantle these barriers I argue for using stable, community-supported, open-source software, which eschews paywalls and promotes format interoperability. Surprisingly, software engines for video game design provide a powerful and stable platform for data integration. Through example, I demonstrate various open-source projects useful to archaeologists, and the path to integrating data from all using an open-source game engine.

Ljung, Emma (Princeton University), and Betsy Bevis (University of Illinois, Urbana-Champaign)

[225] *Pedagogical Approaches to Postdepositional Processes on the Santa Susana Archaeological Project, Portugal*

How can a site where postdepositional processes problematize analysis even for a trained professional be used to teach field archaeological methods to beginners? This paper presents an overview of the pedagogical innovations and approaches taken on the Santa Susana Archaeological Project in the central Alentejo, Portugal. There, a Roman villa has seen many phases of reuse, intrusion, and destruction, spanning from late antiquity until the late twentieth century. Stratigraphically complex even without consideration of its extreme

destruction, the villa has proved dramatically different to cases laid out in archaeology textbooks, making it a difficult first encounter with material culture for our students. But in that complication lies vast pedagogical value. For example, while textbooks lay out generalizable scenarios and explain the relationship between depositions and time, the field school at Santa Susana centers decay and destruction as natural elements of a site's life. In this way, conservation becomes as important as excavation for the field student, generating a more nuanced understanding of ancient sites as existing not only in the past but equally in the present. For the field student, this leads to more holistic learning outcomes that begin to bridge field archaeology, heritage management, and classroom study.

Ljung, Emma [225] see Chai Andrade, Travis

Llamas, Bastien [119] see Shimada, Izumi

Llamazares, Javier [384] see Alcaraz-Castaño, Manuel

Llobera, Marcos (DigAR Lab, University of Washington)

[341] *Developing New Tools for the Analysis of 3D Landscape Scenes*

This presentation focuses on showcasing the ongoing development of a new Python package, *choroexplorer*, aimed at providing a set of new tools to analyze 3D Scenes. This package enables the possibility of combining digital terrain models (DTM) with built environment in the way of 3D objects generated through photogrammetry or terrain scanners. This allows the possibility of deriving numerical information from the rendered scenes that can then be further processed in novel ways to describe qualities and analyze landscape scenes. These new analytical possibilities are likely to precipitate new questions about what properties of space we are interested in defining and exploring.

Lock, Gary [192] see Payne, Neal

Locker, Angelina, Fred Valdez Jr. (University of Texas, Austin), Austin Reynolds (University of North Texas, Health Science Center), Rick Smith (George Mason University), and Tiffany Tung (Vanderbilt University)

[109] *Reconstructing Lifeways at Kichpanha: Stable Isotope Insights into Ancient Maya Movement and Diet from the Preclassic to Early Postclassic Periods*

Kichpanha, located in northern Belize's chert-bearing zone, offers a comprehensive view of prehistoric lifeways, spanning the Archaic (BCE 8000–1000) through the Postclassic (CE 950–1530). Multiple Southern Lowland sites had continuous occupation through the Terminal Classic (CE 850–950) to Postclassic transition; however, Kichpanha is distinct in that it was abandoned for approximately 100 years before being resettled in the Postclassic. This study aims to understand Kichpanha's settlement history and how people's movement and diet may have influenced its brief abandonment. We measured carbon and oxygen isotopes of bone ($n = 59$) and enamel ($n = 100$) carbonates as well as carbon and nitrogen isotopes of collagen ($n = 80$), representing 72 individuals from the Preclassic (BCE 1000–CE 250) to Postclassic. $\delta^{18}\text{O}$ data (mean = -2.6‰ VPDB, SD = 1.4, range = -9.3‰ to $+0.9\text{‰}$ VPDB) suggest that although some individuals may have been born or spent time elsewhere, they lived most of their lives at Kichpanha, with mobility mainly occurring during the Late and Terminal Classic. Dietary isotope data show consistent eating habits over time, with no significant dietary shifts. These data indicate continuity of a local group of people, with an influx of migration immediately preceding Kichpanha's brief abandonment. *****This presentation will include images of human remains.**

Loendorf, Lawrence (Sacred Sites Research Inc.), and Mark Willis (Flinders University)

[291] *Pictograph Scenes That Compare to Tabira Black and White Pottery*

Archaeologists use depictions on pottery for comparison to pictographs and petroglyphs. Most common are Mimbres images that occur at rock art sites, but Chupadero Black and White pottery designs can also be comparable. Recently we have found several pictograph panels that compare well with Tabira Black and White pottery. The images are mainly of warfare, including scenes of captured women, that are found in and

around Salinas Pueblo Missions National Monument. These scenes add to the growing body of narrative rock art found in Salinas Piro region of New Mexico.

Loftus, Shannon (Idaho National Lab)

[372] *Volcanoes, Earthquakes, and Environmental Change: Site Formation Processes at Work in Owl Cave*
Owl Cave has experienced multi-millennia of incredible and dynamic environmental conditions that contributed to the site's formation and the contextual setting of the terminal Pleistocene component referred to as Layer 18 by the original researchers. These processes include peri-glacial conditions, volcanic eruptions, and earthquakes, all of which appear to have manifested themselves as a near indecipherable stratigraphic relationship. Understanding these processes and their effects on the terminal Pleistocene deposits are key to interpretation of the archaeological assemblage. Without this understanding, we are left with a hodge-podge of artifacts and faunal remains in a quagmire of ceiling rock fall and sediment without recognizable context. This paper sheds light on the interrelated processes that likely shaped the setting of the site, the sediments interpreted as "Layer 18" and outlines the path forward, including ongoing analyses of the terminal Pleistocene faunal assemblage.

LoGiurato, Olivia [207] see Breslawski, Ryan

Lohse, Jon, Mike McBride (Gault School of Archaeological Research), Sebastien Perrot-Minnot, and Victoria Pagano

[236] *Complex Fluted Bifaces from Central America: Recent Findings from August Pine Ridge, Belize*
Recent and ongoing research at August Pine Ridge, Belize, is documenting an astonishing assemblage of complex bifaces representing human occupation and social interactions that took place in Central America from approximately 13,000 to 12,000 years ago. We see technological behaviors that reflect influences from Clovis practices that are well documented in North America, as well as stemmed, fluted biface production associated with Fell or Fishtail specimens from South America. These two continental-scale complexes overlapped in what we call a Fluted Biface Horizon that represents in situ population growth in the Belize region of Central America and that is defined by complex social interactions far earlier than previously imagined. Our research has implications for how the Central American land bridge was populated during the Terminal Pleistocene as part of the complex Peopling of the Americas process.

Lohse, Jon [236] see McBride, Mike

Lohse, Jon [387] see Pagano, Victoria

Lombardo, Serena (University of Tübingen), Nicholas Thompson (University of Tübingen), Vangelis Turloukis (University of Ioannina, Greece), and Katerina Harvati (University of Tübingen)

[384] *Early Upper Paleolithic Technical Behavior at Apidima (Peloponnese, Greece): Technological Analysis of the Lithic Assemblage from Cave C*

The Apidima cave complex (Caves A–E, Peloponnese, Greece) is among the most significant Paleolithic sites in southeastern Europe. Two fossilized human crania recovered from Cave A in the 1970s–1980s indicate the presence of an early *H. sapiens* population followed by a Neanderthal one in the Middle Pleistocene. Important discoveries were also made in Cave C, including a presumed Early Upper Paleolithic human burial, pierced shells, and a lithic assemblage, of which only a small portion was preliminarily studied. Here, we present the first comprehensive analysis of the entire lithic assemblage. Two main reduction strategies were identified: a volumetric semi-circumferential debitage and a second reduction using bipolar-on-anvil percussion technique. Bladelets were the main target of the production, frequently modified on the edges by applying a direct marginal retouch, occasionally inverse or alternate. Several refits were identified, aiding in identifying the reduction sequences, often obliterated by the prevalent use of bipolar percussion, especially during the later stages of blank exploitation. The combination of technological and typological analysis allows us to attribute the Apidima Cave C lithic assemblage to the early phases of the Upper Paleolithic, within the variability of the Aurignacian technocomplex.

Lombardo, Umberto (Universitat Autònoma de Barcelona)**[341] *Cultivation to Agricultural Landscapes in the Bolivian Amazon***

The Bolivian Amazon has been inhabited since the very early Holocene. People have been transforming the landscape ever since, leaving permanent markers. As one of the very early centers of plant domestication, the cultivation of squashes (*Cucurbita* sp.) and cassava (*Manihot* sp.) date to more than 10,000 years ago, while maize (*Zea mays*) has been cultivated since around 7,000 years ago. Interestingly, despite the early start of plant cultivation and domestication, it was not until about 2,000 years ago that agricultural societies emerged in the region. When agriculture appeared in the Bolivian Amazon, it substantially transformed the landscape through the construction of thousands of hectares of agricultural fields. These fields are distinct in various places in the plains, each representing a specific adaptation to the edaphic conditions. In the Monumental Mound Region, one of the very few Amazonian regions where we have evidence of low-density urbanism, people engineered the landscape through a combination of drainage canals and farming ponds. This combination was able to sustain a maize monoculture, making this the only example of a grain-based society in the Amazon.

Lombardo, Umberto [67] see Dudgeon, Kate

Long, Holly, and José Peña (Chronicle Heritage)**[321] *Cranial Modification in Coastal Peru at the Site of CuzCuz, Huarmey Valley, Peru***

Cultural cranial modification is practiced in many cultures and has been interpreted to signify different facets of identity. In 2022, a surface collection from Sector A of the prehispanic cemetery of CuzCuz revealed 12 complete adult crania with cultural cranial modification. These crania were discovered out of context—looted from their original burials. Regardless, information regarding the sex distribution and the degree of cranial modification can be explored. These individuals present bilobal modification, a type of the tabular form. Out of the 12 adult individuals, only two were female. In addition, the degree of cranial deformation varied among individuals, perhaps due to varying time each maintained the wrapping of the head and/or other intraindividual variables (size, age, etc.). Additional potential implications of cranial modification, such as the presence of interparietal bones and extrasutural ossicles, are also considered. These individuals highlight the presence of cultural cranial modification in the Huarmey Valley, even though in situ burials demonstrating this phenomenon have not yet been uncovered. *****This presentation will include images of human remains.**

Lonnegren, Abigail [129] see Hampton, Ashley

Look, Cory (Farmingdale State College, State University of New York), L. Antonio Curet (Smithsonian Institution), and Matthew A. Brown**[233] *Multiscalar 3D Scanning and Capture at Tibes: Integrating Land-Use Legacies, Hurricane Impacts, and Precolumbian Modeling for Future Preservation***

The Tibes Indigenous Ceremonial Center in Puerto Rico stands as a testament to the rich cultural heritage of the precolumbian Caribbean. Our work employs a multiscalar approach to 3D scanning and capture, aiming to document and analyze the site's complex land-use legacies, assess the impacts of recent hurricanes, and model precolumbian landscapes. This study integrates lidar, drone-based photogrammetry, and micro surface topography scanning to create a comprehensive digital archive of Tibes. The high-resolution 3D models generated allow for detailed analysis of hurricane-induced alterations to the site, highlighting areas of erosion and structural damage. These models serve not only as a tool for current archaeological research but also as a digital preservation method, ensuring that future generations can access and study Tibes in its current state. By employing a multiscalar approach, we bridge the gap between microscale site-specific details and macroscale landscape-level processes. This methodology underscores the importance of integrating various technological tools to capture the full spectrum of archaeological and environmental data. Our work at Tibes exemplifies the potential of 3D scanning and digital modeling in preserving cultural heritage sites, offering a robust framework for future research and conservation efforts in the face of climate change and natural disasters.

Look, Cory [233] see Brown, Matthew A.

Loomis, Sarah (Harvard University)**[180]** *A Social Anatomy: Identity in the Burials at Los Guachimontones*

The shaft tomb burials of ancient Teuchitlán in Formative and Classic period West Mexico (ca. 300 BCE–500 CE) are known for their expressive burial figurines. These figurines depict a rich social and ceremonial life. The skeletal human remains that accompany these burial figures extend understandings of ancient social structure. The role of individuals within social organization is reflected in associations between age, sex, health, bodily modification, burial locations, and burial goods. Burials at the ceremonial center represent a greater differentiation and spiritual significance, while burials in residential areas represent a cross-section of society. *****This presentation will include images of human remains.**

Lopez, Carlos (Universidad Tecnológica de Pereira), and Martha Cano (Universidad Tecnológica de Pereira)**[96]** *Geoarchaeology of the Pleistocene-Holocene Transition in the Northwest of South America: Perspectives on Early Peopling in Colombia*

Between the 1960s and 1990s, early human adaptation and coevolution in different environments of tropical and subtropical lowlands and in the Andean mountains of Colombia were highlighted. Although there have been different advances, 30 years later, in some regions there is still minimal evidence of the initial population. In this sense, geoarchaeology is a powerful possibility to deduce where ancient depositional stratigraphic contexts preserve ancient sequences. Contributions in studies of site formation processes will be highlighted, both in alluvial sectors and in terraces and mountain peaks, particularly in soils buried under Holocene volcanic ash. Sedimentological studies and the dynamics of pedological horizons in equatorial lands are fundamental to explain the preservation and chronology of stratified cultural evidence. In the case of Colombia, since the Pleistocene–Holocene transition, the presence of contrasting lithic technocomplexes is very significant, both of lowland hunter-gatherers and of mountain horticulturists, which had contemporary developments between the twelfth millennium BP and the fifth millennium BP. There are still many questions about the pre-LGM occupations, and it will certainly be thanks to geoarchaeology that progress can be made in this field.

Lopez, Noel [291] see Moretti-Langholtz, Danielle

Lopez Aceves, Judith Margarita (University of Leicester)**[371]** *How to Talk to Materials? Dialogue between Researcher, Analytical Chemistry, and Drug Paraphernalia*

Intoxicant consumption is a practice that was reported by the European colonizers when they first arrived in the Caribbean; however, their reports were often vague and lacking detail, leaving material evidence as the only tangible evidence of this consumption. But what if the material evidence we have does not align with the colonizers' descriptions? How can we challenge these historical descriptions to talk with the material evidence, allowing it to help us understand more about its use and meaning? These materials have many potential roles and uses. How can we decipher the multiple uses and meanings of these materials? How can we use analytical chemistry as a way to find more languages to speak to materials, rather than using it to limit our ways of understanding them. In this paper I would like to show some experiments on how we could talk to materials and highlight the risks of viewing analytical chemistry, as the sole objective method for determining the possible uses and contents of archaeological materials. For instance, in the study of intoxicants, the detection of a specific compound does not directly link the material to a particular use or content.

López Bravo, Roberto (Universidad de Ciencias y Artes de Chiapas)**[393]** *Chiapa de Corzo at the Crossroads: Reassessing Interaction and Invasion at the End of the Preclassic Period*

Previous research has suggested that the Late Preclassic conquest of Chiapa de Corzo's Zoque capital by Maya forces explains the widespread presence of Chicanel Ceramic Group materials in the royal tombs of Structure I and the offerings of Structure 5. However, new data on the settlement patterns in Chiapa de Corzo's hinterland reveal alternative scenarios of Zoque-Maya interaction, shedding light on the sociocultural transformations that occurred in subsequent periods. *****This presentation will include images of human remains.**

López Bravo, Roberto [393] see Gallaga, Emiliano
 López Bravo, Roberto [325] see Hernandez, Isabella
 López Bravo, Roberto [376] see Paris, Elizabeth
 López Bravo, Roberto [122] see Primeau, Kris

López Cabral, Rocío (HDR, Inc)

[157] *Human Practices and Material Legacies in the Earth Mounds of South America: Reviewing the Social and Environmental Interactions at Los Ajos, Uruguay*

This paper presents new data intended to review and rethink the human environment interaction and social processes of mound complexes in the highlands of East of Uruguay. A combination of practice questions revolving around the effects of practices have in the people themselves and in the landscape with a methodologically geoarchaeological approach is an innovative line of work in this region. This research introduces the first results of an investigation at the archaeological site of Colina Da Monte (Rocha, Uruguay). Stratigraphical, chronological, and archaeological data revealed different site formation aspects, anthropological processes, and temporalities. It is argued here that the ancient central platform mound at Colina Da Monte was a monumental construction that once created, manipulated, or controlled future practices by directing later depositional practices to the periphery. Long-term cultural practices took place in CDM and considerably impacting the landscape. Ritualistic, symbolic, and domestic are all interlinked processes that are in place in the historical trajectory of Colina Da Monte, yet these are not clearly compartmentalized but are spatially and temporally entangled in the site, and which have ultimately contributed to the emergence of a cultural and ecologically complex place within a larger cultural landscape.

López Camacho, Javier [349] see Tsukamoto, Kenichiro

López Corral, Aurelio [236] see Vicencio, A. Gabriel

López Luján, Leonardo (Museo del Templo Mayor, INAH), and Saburo Sugiyama (Arizona State University)

[97] *Mexica Rulership and Imperial Expansion as Viewed from Archaeology: Architecture, Sculpture, and Offerings of Tenochtitlan's Sacred Precinct*

From its founding in the first half of the fourteenth century to its 1521–1523 destruction, Tenochtitlan—the island city and main seat of the mighty Mexica Empire—underwent an accelerated technological, economic, social, political, and artistic transformation rarely seen in world history. During that relatively brief interval, the humble settlement that paid tribute to Azcapotzalco became a bustling metropolis with more than 200,000 inhabitants and the head of an imperial confederation. Although our knowledge of the details of this exceptional process largely stems from sixteenth-century pictographic and alphabetic historical sources, this presentation takes another look in light of archaeological data recovered over the past 47 years from Tenochtitlan's sacred precinct in the historic center of Mexico City. The analysis of material remains from the heart of the imperial capital complements the historical record in revealing ways and offers a new perspective on the empire's expansionist policies and their correlation with Mexica ideological discourse. Focusing on the perpetual enlargements of the Templo Mayor, the constant production of large-format sculptural monuments, and the uninterrupted burial of offerings inside sacred buildings and under plaza floors, we see how these material expressions of religious life also reflect a period of rapid and dramatic transformation.

Lopez Varela, Sandra (Universidad Nacional Autónoma de México), and Sandra Salgado (Universidad Nacional Autónoma de México)

[89] *Gender Dynamics in New Spain: Inside the Colonial Home of the Third Count of Sierra Gorda, Mariano Timoteo Escandón y Llera*

To investigate gender dynamics in the late Viceroyalty of New Spain, Salgado examined the 1814 will of Mariano Timoteo Escandón y Llera, the third Count of Sierra Gorda, who resided in present-day Morelia, Mexico. An earlier transcription of this document details the property where Don Mariano lived from 1775 to 1814, including the objects within it. By contextualizing the historical events in the Old World that

influenced space distribution within the homes of the elite in New Spain, this study provides a foundation for investigating gender relations during the late colonial period. These events led elite homes to evolve into single-family residences, resulting in a new spatial distribution that intensified the hierarchization of power in social relations and justified class, race, and gender distinctions. Traversing through this dwelling, the main living room and the “estrado,” a space exclusively for female use for over two centuries, became mixed-use in the early nineteenth century. The transformation into a space for the socialization of reason allowed women to participate in intellectual conversations. Research presented here demonstrates the significance of studying colonial wills to understand how domestic space functions as an epistemic regime shaping gender systems.

Lorentzen, Brita [50] see Birch, Jennifer

Lorenz, Wayne (Wright Palaeohydrological Institute), and Kate Trusler

[76] *An Engineered Ancient Water System: Water Delivery to a Pompeii House*

One of the wonders of the Ancient Roman civilization is that the engineered water systems were so “modern.” The access of the general public to fresh water, no doubt, resulted in improved public health and a flourishing civilization. A remarkable aspect of Pompeii is that portions of the public water system have been preserved due to the eruption of Mt. Vesuvius in AD 79. The water system in Pompeii included elevated towers to provide water pressure delivered by lead pipes to the water uses in the City, including individual houses. One house that was served with fresh water was the House of the Hanging Balcony. The lead pipe from the nearest water tower was surveyed to this house and the pipe within the house was documented. Our study included tracing the pipe from where the piping enters the house at the front door to a lead distribution tank and valves that split the water to five different pipes that supplied water to a marble decorative water feature and marble water basins. The original marble water feature in the Pompeii storage area was made available to our inspection.

Lothrop, Jonathan [391] see Kitchel, Nathaniel

Louderback, Lisbeth (Natural History Museum of Utah, University of Utah)

[126] *Sharing the Burden of Climate Change: Male and Female Foraging Strategies during the Holocene*

How did foraging patterns of males and females differ in response to climate change? Despite 100 years of robust archaeological research in arid western North America, there has never been a synthesis explaining the role of males and females in shaping human foraging patterns during the Holocene. Across the globe, variations in these patterns have been linked to precipitation trends, resource availability, new technologies, human population pressure, and social structure. Yet, gender is rarely addressed during archaeological studies and is not offered as an explanation, despite that fact that men and women often seek food in ways related to the costs and benefits associated with group fitness. This project uses predictions drawn from evolutionary/behavioral ecology and ethnographic research to examine male and female foraging patterns in the distant past using available archaeological data from arid western North America. Those patterns are used to test the hypothesis that sex differences arise due to the effects of climate change on group fitness. By emphasizing the foraging responses of women to climate change we will also be able to better address gender and environmental issues affecting contemporaneous resource use in rural and developing nations.

Louderback, Lisbeth [126] see Rickett, Sara

Louderback, Lisbeth [126] see Wilks, Stefania

Loughlin, Michael (Stantec)

[344] *Postclassic Settlement in the Eastern Lower Papaloapan Basin*

During the Late Classic period, the Eastern Lower Papaloapan Basin experienced an important demographic shift as local centers collapsed and populations fell across the region. By the Early Postclassic period, the region was largely abandoned. During the subsequent Late Postclassic period, populations began to rebound. One of the features of this rebound is a residential shift where new settlements were established rather than a reoccupation of older sites. Moreover, this population rebound did not occur equally across the ELPB, as

some areas were never reoccupied. The focus of this presentation is to examine how the Late Classic and Early Postclassic collapse occurred, and to characterize the rebound of settlement in the region during the Late Postclassic period; specifically, why some areas of the ELPB were resettled and others were not. This demographic shift is contextualized with broader trends in the Gulf Lowland by comparing the ELPB settlement pattern to the Tuxtla region and the Mixtequilla region of south-central Veracruz.

Lovata, Troy (University of New Mexico)

[125] *Culturally Modified Trees in the Mountains of Northern New Mexico: Trees as Material Expressions of Contemporary and Historic Mountain Culture*

This presentation examines culturally modified trees from the mountains of northern New Mexico in order to understand historic and contemporary culture. New Mexico is home to the southern Rocky Mountains as well as host to numerous other mountain ranges and verticality and elevation begets a relative abundance of trees in its semiarid climate. Yet, here, there has been a steep decline in the extractive use of trees over the last three quarters of a century. Widespread timber harvesting and processing operations have all but ceased on private and tribal lands, and government forestry is increasingly focused on regeneration, ecosystem health, and responses to increasingly common catastrophic wildfires. Examining trees as material culture produces a wide catalogue of artifacts—arboglyphs, trail blazes, descansos, medallion trees, witness trees, and wickiups—whose form and quantity show the state's trees as a repository and reflection of a mountain culture rather than an extracted resource. These artifacts indicate New Mexico's trees are conceived less as something to be harvested and are, instead, formulated more as de facto permanent features both on the physical landscape and in conceptions of deep history around which contemporary peoples organize and express themselves.

Love, Sarah (University of Georgia)

[108] *From Federal Frameworks to Grassroots Action: Redefining Cultural Resource Management*

With a robust natural and cultural resource policy framework firmly in place at the federal level, it is highly unlikely that the United States will experience another significant push toward increasing national protections for cultural and natural resources. Yet many heritage resources remain at risk in the face of increasing development, climate change, and population shifts. Without overhauling our federal frameworks, how can archaeologists engage at state, municipal, or local levels to help protect, interpret, and preserve natural and cultural resources outside the limitations of the National Historic Preservation Act and the National Environmental Policy Act? This paper exposes the gaps between policy frameworks and explores the immense potential of heritage professionals to influence practices that impact cultural resources regardless of whether they are recognizable as explicit cultural resource policies. Lastly, it examines academic coursework, nonprofit organizations, and grassroots agendas that align with cultural resource conservation to identify potential avenues for archaeologists to support local communities and stakeholders and broaden their scope of influence over cultural resource management

Lovejoy, Aaron [365] see Macbeth, Katherine

Lovett, Augustus [284] see Wolff, Christopher

Lowe, John, Karen Mudar (National Park Service), Chureekamol Onsuwan Eyre, and Vincent Pigott (Penn Museum)

[213] *Settlement Patterns in Eastern Central Thailand: Rescuing Historic Data to Increase the Power of Analysis*
Using data from five archaeological site surveys, we examine pre-Dvaravati (pre-sixth century CE) settlement patterns on the Lopburi Plain, eastern central Thailand. Surveys by Ho (1984), Mudar (1993), Onsuwan Eyre (2006), LoRAP (1988–2023), and Pryce et al. (2013), conducted over more than three decades, contain a plethora of disparate georeferenced data. In this study, we combine them to examine settlement patterns on a regional basis. We describe the effort to resolve the differences in coding and conceptualization in these datasets to generate consistent geographical and temporal representations, covering more than 260 archaeological sites, demonstrating the wide distribution of human occupation across the areas surveyed. Additional GIS data layers for soils, elevation, and geology (some from the Thai Department of Mineral

Resources) provide relevant parameters for analysis. Although occupational dates for the sites are approximate, combining survey results has increased the robusticity of the analysis and demonstrates changes in settlement patterns with a higher degree of reliability.

Lowe, Lynne (UNAM)

[393] *Los braseros tempranos de tradición zoque en la Depresión Central de Chiapas*

Las ceremonias que involucran el uso de braseros o incensarios para la quema de resinas aromáticas u otras materias sagradas han formado parte de la vida de los pueblos mesoamericanos a lo largo de varios milenios y representan un buen ejemplo de la adaptación y continuidad de las prácticas rituales en la Depresión Central de Chiapas. Las evidencias arqueológicas han demostrado que dicha práctica se remonta al periodo Formativo, y que perduró, con diversos cambios y adaptaciones, como rasgo fundamental de los pueblos zoqueanos que se asentaron en la cuenca del río Grijalva y zonas aledañas. Aquí analizaremos sus variaciones formales y asociaciones contextuales a partir de los datos procedentes de algunas de las principales capitales de la región, como Chiapa de Corzo, Mirador, Vistahermosa o La Libertad, con el fin de conocer sus formas de uso y evolución estilística, así como sus relaciones con otras regiones del sur de Mesoamérica.

Lowry, Justin [74] see Menn, Sascha

Lowry, Sarah (New South Associates Inc.), and Gabriel Griffin (New South Associates Inc.)

[92] *Mapping the Port Tampa Cemetery: The Geophysical Search for a Lost Historic Landscape on the MacDill Airfield*

The Port Tampa Cemetery is a Black cemetery dating to the early twentieth century. It was documented in death records, the Works Progress Association (WPA) cemetery survey, and the oral histories of longtime Port Tampa residents. In the first half of the twentieth century the exact cemetery location was lost during construction of MacDill Airforce Base. MacDill began the search for the Port Tampa Cemetery in 2020 with archaeological survey, a human remains detection dog, archival research, and small areas of ground-penetrating radar (GPR). These searches were unsuccessful, largely due to the limited coverage possible with single channel GPR units and limited depth penetration of shovel testing. Considering these constraints, MacDill proposed a landscape level GPR survey. NSA completed a nearly 100-acre GPR survey with both multichannel and single-channel instruments in 2022 and 2024. The results of this survey were used to delineate the cemetery boundary and identify an estimated number of burials over 1 m below the modern airfield. MacDill is now empowered to preserve and protect this historic and sacred site while setting a useful methodological precedent.

Lozada, Josué (Instituto Nacional de Antropología e Historia), Nelda Issa Marengo Camacho (Boundary End Archaeology Research Center), Gabriel Merino Andrade (DEA-INAH), Tomás Torres Guzmán (DEA-INAH), and Camilo Thompson Poo (DEA-INAH)

[393] *Spatial Analysis of the Zoque Caves of Cerro Brujo, Ocozocoautla, Seen from the Use of GIS*

The Cerro Brujo area is a mountain range located southeast of the municipality of Ocozocoautla de Espinosa and within the Central Depression region of Chiapas, Mexico. The area is made up of limestone and dolomite rocks that give rise to a karst landscape that was used since prehispanic times by Zoque groups, who visited the caves for ceremonial purposes during their pilgrimages and at other times temporarily inhabited them. In this work, we will show the location of the Cerro Brujo caves, their relationship with the altitude at which they are located, and other landscape elements, such as water sources. Finally, we will reveal some characteristics by analyzing archaeological materials, and using geographic information systems, we will discuss the spatial correlation between these caves.

Lozano, Stephanie (University of California, Riverside)

[303] *The Teotihuacan Tlaloc Glyph with Maya Shell Iconography*

The Tlaloc glyph has been considered a symbol which refers to the Teotihuacan Tlaloc and appears in the diverse cultural material of the grand metropolis. Examples of the Teotihuacan Tlaloc glyph also appear outside the Central Mexican highlands such as within the Maya area. Two examples of this emblematic glyph appear on the Tikal Marcador. The Tikal Marcador was found placed on a large spondylus shell, which gives

insight to its relationship with water. I posit that the Teotihuacan Tlaloc emblem glyph may have been influenced by Maya water iconography. The Teotihuacan Tlaloc glyph consists of three parallel dots and a prominent bigotera that is placed inside a cartouche. I argue that the three circular elements are related to Maya shell iconography, especially seen on the spondylus shell earspools worn by Chahk as well as rulers who embody Chahk. The three circles could be an added layer expressing the essence of Chahk. This fusion of the two rain entities, the Teotihuacan Tlaloc and Chahk, within this glyph not only expresses Teotihuacan as a multiethnic city but reflects its strong political relationship with the Maya.

Lu, QinQin (University of Cambridge), Julian Henderson (University of Nottingham), Hassan Basafa (University of Neyshabur), and Marcos Martín-Torres (University of Cambridge)

[308] *Islamic Plant-Ash Glass Trade in the Eastern Silk Roads: New Insight from Nishapur*

Islamic plant-ash glass was extensively traded along the Silk Roads, offering insights into interregional connectivity and local material culture development in medieval Eurasia. Research on plant-ash glass has largely focused on evidence from the Near East, while the role of plant-ash glasses in the eastern Silk Road societies, including Iran, Central Asia, and western China, is not well understood. We present our current progress, in particular focusing on an eleventh–twelfth century assemblage unearthed in Shadyakh, Nishapur, Iran. Using chemical and isotopic composition to provenance glass, our results suggest diverse origins and potential recycling practices. We find that trade brought glass from Iraq, Syria, Central Asia, and potentially Iran to Shadyakh, showing that both eastward and westward flows of glass products occurred, and that utilitarian glass was traded across distances. Glasses with compositional signatures of Central Asia, the Tigris-Euphrates River Basin, and possibly Iran are often found in the same context, implying a common trade network for glasses with different origins, designs, and functions. It is plausible that major metropolises such as Nishapur where various types of glass were gathered, traded, and sometimes reworked, facilitated the “mix and match” of diverse glasses along this major trade artery.

Luan, Fengshi [348] see Yin, Ruixue

Luangkhoth, Thonglith [61] see White, Joyce

Lubinski, Patrick (Central Washington University), and R. Lee Lyman (University of Missouri, Columbia)

[87] *Eastern Washington Faunal Database Project*

We have created a database of faunal assemblages from the eastern half of Washington state, compiled from reports through ~2023, with taxonomic identifications, age estimates, and locations. So far there are 482 archaeological assemblages with reported genus or species NISP, from 329 discrete sites, with a total of 66,502 NISP. Some 298 assemblages have age estimates with midpoints that can be placed into five calendar year periods: Younger Dryas (12.9–11.7 ka), Early Holocene (11.7–8.5 ka), Middle Holocene (8.5–5.5 ka), early Late Holocene (5.5–2.0 ka), and Late Holocene (<2.0 ka). Preliminary data using 166 assemblages with >19 genus NISP show *Odocoileus* the most common and most abundant genus in all but the two earliest periods, with the smallest samples. Other common and abundant genera include *Ovis*, *Sylvilagus*, *Antilocapra*, *Lepus*, *Cervus*, *Marmota*, and small, likely intrusive rodents. The artiodactyl index shows heavy use of artiodactyls in later periods, reaching 0.85 in the Late Holocene. Investigations of richness, evenness, size class, spatial patterns, biogeography, and more are underway. We welcome comments on additional assemblages or age estimates to incorporate into the database.

Lucas, Michael [108] see Stevenson, Freeman

Lucero, Lisa (University of Illinois Urbana-Champaign)

[102] *Mesoamerican-Mississippian Connections in Medieval Times*

My intellectual journey with Tim Pauketat began in early 2005 when we met at a School for Advanced Research short seminar on the archaeology of ritual, memory, and materiality. The seminar was a success and led to a long intellectual friendship, a common theme of which was our mutual interest in connections and interactions between ancestral peoples in the Mississippian world and Mesoamerica during the Medieval

period (ca. 800–1300 CE). As a Maya archaeologist, I had not forayed much into North American archaeology. That all changed based on discussions with Tim. In this paper, I detail this journey—a Mesoamerican-Mississippian meeting of the minds. I also discuss how Tim’s ideas have impacted mine throughout the years, especially since 2007 when I started a position at the University of Illinois at Champaign-Urbana. The fundamental impact he has had on my research, his students, and colleagues globally is astounding, and more importantly, significant and enduring.

Luchsinger, Heidi (Environmental Resources Management [ERM])

[108] *Geoarchaeologists Everywhere: “Those Artifacts Are Floating in Thin Air. Throw Us a Lifeline. We Can Help Guide that Paradigm Shift in a Better Direction.”*

An endangered species? A climate scientist trying to explain global warming? An exhausted social media advocate? All three. Due to an archaeological paradigm in the USA perpetuated by academia then carried into cultural resources management and regulatory agencies, geoarchaeologists are hamstrung by the pervasive belief that geoarchaeology is a subdiscipline (and optional). We are dumbfounded when we try to share the good news: *Geoarchaeologists Take the Guesswork Out of a Landscape*. If one doesn’t understand where buried sites could be, how do they know how to shovel test or deep test a landscape? Without any training in geoarchaeology, how do archaeologists know how to write guidelines on how landscapes within their state should be properly tested? How do archaeologists or regulators know whether a site’s eligibility has been sufficiently evaluated without understanding a site’s geomorphic context? Integrating geoarchaeology at all phases of a project enhances project efficiency without sacrificing ethical responsibilities by providing interpretations based on sound geoscientific data. Two solutions: (1) required training in geoarchaeology for archaeologists in all academic programs and (2) standardization of guidelines across the USA for the greater integration of geoarchaeology into cultural resources management practices. Geoarchaeology is archaeology.

Luetchford, Brian [275] see Boulanger, Matthew

Luiz, Jade (Metropolitan State University of Denver)

[336] *Worth Measured in Beer: The Local Economy of the Brothels in Nineteenth- and Early Twentieth-Century Central City, Colorado*

Sex work in the American West held a significant but precarious position during expansion and as large towns and cities sought to establish themselves as legitimate cultural and economic centers in the nation at large. Sex districts during this time mitigated this precarity using a variety of strategies. Research into the sex district in Central City, Colorado, and the material culture recovered during the 2023 and 2024 field school excavations suggests the development of a brothel economy that operated at a variety of scales moving between the local, regional, national, and international in the goods that were acquired to support the business. Additionally, the movement of sex workers around the region from brothel to brothel further contributed to the brothel economy in different and sometimes less tangible ways. This paper examines the unique and flexible economic structures developed to support the brothel businesses of late nineteenth / early twentieth-century Central City, Colorado.

Luján Dávila, Milton [343] see Gonzalez-La Rosa, Luis Manuel

Luke, Alycia [91] see Holcomb, Cassandra

Luley, Benjamin

[170] *Revolt, Resistance, and Long-Term Colonial Change in Roman Mediterranean Gaul*

As with other conquered provinces of the Roman Empire, Mediterranean Gaul witnessed a number of large-scale revolts against Roman colonial rule, spanning multiple generations from the initial Roman conquest in 125 BC to ca. 74 BC. In addition to some textual references, there is good archaeological evidence for these revolts in the form of destroyed Gallic settlements, the destruction layers of which appear to postdate the violence of the initial conquest. This paper moves beyond these two more obvious pieces of evidence for revolt, to consider more broadly how archaeologists can contextualize known instances of revolt within broader patterns of social change occurring under colonial rule as evident in the material record. In the case

of Roman Mediterranean Gaul, some of the material transformations that can be reasonably identified as long-term consequences of the suppression of local revolts include land centuriation and redistribution, dramatic changes in settlement patterns and household organization, and the increased local use of coinage in the context of heavy taxation. By investigating these more long-term transformations, we can thus better appreciate revolts not as singular episodes of violence but rather as part of larger patterns of resistance to foreign rule and ensuing colonial transformations.

Lumbreras, Felipe [341] see Berganzo-Besga, Iban

Luna Golya, Greg [50] see Thompson, Victor

Luo, Grace [228] see Pugh, Erin

Lupo, Karen [288] see Edwards, Nicolette

Luthra, Alisa (University of Florida), Neill Wallis (Florida Museum of Natural History), and Michelle LeFebvre (Florida Museum of Natural History)

[224] Zooarchaeological Investigations of Florida Gulf Coast Civic-Ceremonial Centers

Zooarchaeological research of Woodland period Florida Gulf Coast civic-ceremonial centers indicate that human-animal interactions, implicated through harvest and subsistence patterns, were linked to and affected by local environmental perturbations. Regional scale changes in site settlement and subsistence patterns at these coastal centers have been noted to co-occur with the advent of the Vandal Minimum (~600 CE), a climatic event that may have driven alterations in resource availability and local environmental conditions. The Spring Warrior Complex (8TA154) is a Middle to Late Woodland (200–1000 CE) civic-ceremonial center on the northwest Gulf Coast of Florida, and is the case study through which the articulation between animal harvest, subsistence economy, local environment, and global climate is explored. By analyzing the faunal assemblage of Spring Warrior, the research presented here characterizes the site's faunal diversity and abundance, and delineates key taxa indicative of local environmental conditions, in order to track changes in patterns through space and time. In conjunction with radiocarbon dating, this research contextualizes human activity at the site, establishes a chronology for animal harvest and subsistence patterns, and compares these trends with contemporaneous coastal centers, ultimately to place Spring Warrior within this larger Woodland regional narrative of climate change.

Luthra, Alisa [66] see Datka, Zhuldyz

Luthra, Alisa [88] see Wallis, Neill

Lurtsema, Anna, and Katherine Moore (UPenn Museum of Archaeology and Anthropology)

[87] Beyond the Butcher's Block: Culinary Choices and Meat Utility in a Late Nineteenth-Century Philadelphia Residence

Late nineteenth-century Philadelphia was a landscape of urbanization and industrial growth. Feature 89, a large pit in the rear of a dwelling in central Philadelphia, offers a glimpse into the city's complex foodways during this transformative time. Faunal remains recovered from Feature 89 represented the discards of pig, cattle, chicken, turkey, sheep, and goose. Analysis of the pig and cattle remains showed that the meat had been prepared by professional butchers and had been cooked by roasting, boiling, or stewing. By employing a Standardized Food Utility Index (SFUI) modified for pigs, this study examines the specifics of butchery and culinary choice at Feature 89. As an SFUI assesses the nutritional value of different body parts, it can clarify the economic factors and cultural preferences influencing meat selection and discard. Diverse portion sizes for various meat cuts also hint at the culinary patterns at the household level in a changing neighborhood. These findings not only illuminate the dietary habits of Philadelphia's residents during this period but also contribute to broader discussions on urban foodways and the integration of zooarchaeological methods with historical data to reconstruct past human behavior.

Lux, Thomas (HDR)**[298]** *Deka-In-Nin: A Pandanus Pounder from Kwajalein Atoll, RMI*

Archaeological monitoring of environmental remediation at US Army Garrison-Kwajalein Atoll / Reagan Test Site (USAG-KA/RTS) by HDR in 2018 resulted in the recovery of a coral pandanus leaf pounder (Marshallese: *deka-in-nin*) from Kwajalein Island in the Republic of the Marshall Islands. Historical descriptions and ethnographic accounts emphasize the importance of pandanus leaf textiles (Marshallese: *maanbil* and *maanrar*) to the Marshallese and the cultural centrality of the *deka-in-nin* in the production of those materials. Products crafted from pandanus leaf textiles (e.g., woven mats and boat sails) were essential to physical survival on Pacific atolls. Traditional clothing mats (Marshallese: *nieded*) signaled the status of its wearer within the traditional Marshallese authority system. *Deka-in-nin*, laboriously created and passed down mother to daughter thus served an important role in perpetuating both the physical and cultural survival of the Marshallese people. The 1944 Battle of Kwajalein and the subsequent construction of USAG-KA/RTS substantially altered the appearance of the island, and removal of the resident Marshallese population has inhibited their connection to their former home. As one of the few (or possibly only) *deka-in-nin* archaeologically documented on Kwajalein, this artifact provides a tangible link between Marshallese displaced from their ancestral land rights on Kwajalein and their traditional home.

Luzzadder-Beach, Sheryl (University of Texas, Austin), Timothy Beach (University of Texas, Austin), and Nicholas Dunning (University of Cincinnati)**[52]** *The New Normal: Three Decades of Hydrologic Monitoring in the Three Rivers Region of the Maya Lowlands*

Thirty-year normals are statistical units used for hydroclimatological monitoring. They run for 30 Water Years (1 October through 30 September) representing statistically coherent temporal datasets. The most recent 30-year normal period was 1991–2020, and we have just entered a new normal of 2021–2050. As part of the original 1993 PfbAP environmental research team, I launched a hydrological monitoring program centered in the Programme for Belize Rio Bravo Conservation and Management Area. This was the first comprehensive long-term environmental program to study these little-known tropical river, wetland, and groundwater systems: the Rio Bravo, Booths River, Blue Creek, and Rio Hondo watersheds, extending later into Petén, Guatemala. This paper presents long-term hydrological trends observed over “our” 30+ year normal period of 1993–2024, (1.5 K’atuns) and insights into ancient Maya land- and water-use patterns in this neotropical lowlands region. These findings include significant spatial differences in water chemistry from the interior uplands to the coastal plain, affecting potential types of water use (e.g., domestic vs. agricultural) and impacts on geomorphic form and process. We have also found numerous forms of Maya-built water management infrastructure for water quantity and quality, including a large extent of previously unexplored wetland agricultural fields.

Luzzadder-Beach, Sheryl [325] see Baldwin, J. Dennis

Luzzadder-Beach, Sheryl [109] see Beach, Timothy

Luzzadder-Beach, Sheryl [52] see Dunning, Nicholas

Luzzadder-Beach, Sheryl [107] see Ploetz, Chris

Luzzadder-Beach, Sheryl [109] see Smith, Byron

Lycett, Mark [350] see Feng, Jennifer

Lyman, R. (University of Missouri, Columbia)**[339]** *Some History of Archaeology’s Most Fundamental Concept: Artifact*

The concept “artifact” is arguably the core concept of archaeology; without artifacts it is doubtful there would be an archaeology discipline as we know it today. Three questions warrant exploration: First, what is the history of how we determine that particular things are artifacts? Second, what is the history of the term? And third, what is the history of definitions of artifact in the general archaeological literature and what is that history in introductory textbooks? The literature on distinguishing artifacts from geofacts among broken rocks is extensive and continues to grow as new attributes are evaluated. The term “artifact” gained in popularity in the early twentieth century as it replaced “implement,” “ornament,” “relic,” “antiquity,” and the like. Definitions in the second half of the nineteenth century emphasized an artifact was “made” or

“manufactured”; use wear and portability were not mentioned. Twentieth-century introductory textbooks focus on one or more of “made,” “modified,” and “used” and often include use-wear and portability as definitive attributes.

Lyman, R. [87] see Lubinski, Patrick

Lynch, Elizabeth (Eastern New Mexico University), and Mark Owens

[127] *Abraders, Palettes, and the Unknown: Assessing Tool Use through Low-Power Microscopy and 3D Modeling*
Nine ground stone tool (GST) artifacts were recovered during the 1960s and 1990s excavations at the Hell Gap National Historic Landmark. They were found in units dating to ~10,800–10,000 years ago. These GST artifacts are on loan to the Eastern New Mexico University (ENMU) digital archaeology lab from the University of Wyoming. ENMU researchers are currently developing 3D models of the artifacts and conducting preliminary use-wear analysis, in hopes of preserving the original state of the artifacts before they undergo preparation for residue analysis and additional use-wear survey. In this poster we compare 3D modeled surfaces to low-power microscopic imagery to determine how useful 3D models are in preliminary assessments of GST tool function. Ochre grinding and tool production are hypothesized to be the primary function of some of the ground stone tools; other Hell Gap GST are, as yet, unclassified. Preservation (through 3D modeling) and analysis (low-powered microscopy) of these tools will add to our understanding of ritual and ordinary practices at ancient campsites on the Plains-Rocky Mountains landscape. Our work provides inclusive, yet sustainable access to the artifacts while further testing their functionality.

Lynch, Joshua (Arkansas Tech University), and Autumn Morse (Ozark-St. Francis National Forest)

[198] *Addressing the CRM Labor Crisis: A Successful Model of Archaeological Student Training in Arkansas*
In 2024, Arkansas Tech University (ATU), in partnership with the Ozark St. Francis National Forests and the VRI Research Station of the Arkansas Archaeological Survey, executed the first RPA4-certified Field School conducted on public lands in Arkansas. This four-week field school offered students and professional archaeologists the opportunity to gain hands-on experience in a broad array of archaeological field methods and cultural resource management (CRM) practices. Through a combination of fieldwork on the Ozark St. Francis National Forests, interdisciplinary lectures, and practical exercises, students developed the technical skills necessary for conducting archaeological surveys, excavations, and site documentation in compliance with regulatory standards. Presented here are the results of a 210-acre survey on Meadows Knob, multiple historic and prehistoric site condition assessments, and extensive cataloguing of cultural materials associated with the Ozark St. Francis National Forests. By the end of the ATU Field School, students demonstrated acquired practical skills, theoretical knowledge, and ethical awareness essential for careers in cultural resource management and archaeological research. Subsequent student placement in professional positions has been extraordinary as training is adapted to reflect the intensely growing need for CRM archaeologists across the field. Proposed plans for the 2025 ATU Field School will also be presented.

Lynch, Siofra (University of Wyoming)

[194] *Awl's Well That Ends Well: Chaîne Opératoire Approach to Great Bend Aspect Stone Awls and Pipe Drills*
Plains archaeologists have previously miscategorized stone awls as pipe-making implements, when awls should actually be considered hide-processing tools. In order to properly study women's hide-processing tools, it is imperative that those artifacts are not confused with separate men's tools. This project utilized morphometric analysis to study Great Bend Aspect stone awls and pipe-making tools within the Robb collection from McPherson County, Kansas. According to ethnographic sources, the hide-preparation sequence was left up to the purview of Indigenous women, and when bison-oriented trade came to dominate the Plains, craftswomen began utilizing new hide-processing technology. In previous periods awls were made from faunal material, yet as bison hunting intensified lithic versions were created to better handle thicker hides. The present study seeks to better understand the *chaîne opératoire* in order to recognize a lithic tools dynamic lifecycle. A significant portion of the assemblage appears to be remade one or more times from other formal tools. Results show that men and women appear to share materials and possibly techniques in making their tools, despite having a clear division of labor based on gender.

Lyon, Eli (Woods Canyon Archaeological Consultants)**[362]** *The Monticello Uplands: A Cultural Resource Survey in the Lands Between*

Between September 2023 and April 2024, Woods Canyon Archaeological Consultants Inc. (Woods Canyon) conducted a Class III cultural resource inventory of 6,485 acres of land for the BLM Canyon Country District in San Juan County, Utah. These acres were broken across 23 separate survey areas on both sides of the Montezuma Canyon drainage. More recently, this area has come to be called the “Lands Between” as it falls between the culturally rich areas of the Bears Ears National Monument in Utah and Canyons of the Ancients National Monument in Colorado. The survey area included well-known landforms such as Alkali Ridge, Brushy Basin, Cedar Park, and Bug Point. A total of 778 archaeological sites were recorded by the project, 602 of which were new recordings. Cultural affiliation was primarily Ancestral Puebloan, ranging from Basketmaker II to Pueblo III, but included Archaic, historic Navajo, and Euro-American sites as well. This presentation will attempt to provide a synopsis of the project’s findings, shedding some new light on the extensive temporal and areal use of the Lands Between, and highlighting the potential for new research opportunities identified by recent inventory work.

Lyons, Kevin (Kalispel Natural Resources Department), and Danny Fuentes (Kalispel Tribe of Indians)**[125]** *Embracing the Neglected Histories of Reservation Towns*

Small and comparatively late to “the game,” the Kalispel Indian Reservation marked its 110th anniversary last year. Nestled against its small western boarder are the two dairy and timber towns of Cusick and Usk, Washington. Certainly, places of commerce and uneasy compromise, these reservation towns began to languish in the late twentieth century as the Reservation began to prosper in the early twenty-first century. As part of that prosperity, the Kalispel Tribe of Indians (a topic of frequent local inquiry) is now paradoxically positioned to help tell the stories of “others.” In that telling we seek to be authentic, accountable, accessible, and accurate, these being our values. And in doing so we seek to fulfill the SAA’s ethical archaeology principles through example. We maintain our long-standing commitment to public outreach along this frontier, we continue to provide continual training to local partners and a broader audience, and we seek to be more inclusive in the telling of the tribe’s history that includes these reservation towns.

Lyons, Mike (German Archaeological Institute; University of Bonn)**[308]** *Networks of Exchange in Northeastern Honduras: An Archaeometric Approach*

Northeast Honduras represents a burgeoning center of archaeological research as appreciation grows for its position as a transitional zone between three major regions in prehispanic Central America: Mesoamerica, Southern Central America, and the Caribbean. As part of the Archaeological Project Guadalupe/Colón, I apply an archaeometric approach to better understand how the Cocal period (AD 1000–1525) inhabitants organized their economic system in terms of production, distribution, and exchange. I have conducted extensive surveys throughout the area to register and document sites and collect cultural material, such as obsidian and ceramic. Selected samples have been analyzed with geochemical techniques and/or via thin-section petrography, while an AI approach for automated classification of the petrofabric was also explored. The preliminary results indicate a wide variety of exchange networks reaching as far as northern Mexico. Local groups of production and distribution can also be identified in which clusters of nearby settlements likely produced pottery together, acquired material from the same sources, or depended on a single or few local producers. Interaction between distant settlements can be detected via nonlocal ceramics. The result is a complex network of interaction spheres with an emphasis on the island, coastal, and near-coast hinterland valley regions.

Lyons, Mike [296] see Reindel, Markus

Lyons, Patrick**[380]** *Ritual Closure at Point of Pines Pueblo: Forgetting Immigrant Identity and Creating a New Community*

Beginning with Emil Haury’s (1958) brief article on the burning of the Maverick Mountain room block at Point of Pines Pueblo, archaeologists have consistently interpreted this process as an incident of interethnic violence perpetrated by the locals in the Point of Pines region in order to drive away the Kayenta immigrants who had settled at the village during the late AD 1200s. Newly compiled data strongly indicate that the fire

was, instead, set by the immigrants to ritually close a portion of the pueblo. A ceremonial structure at the site, built in the immigrant tradition, was also burned at this time, but low-visibility traces of the immigrants (e.g., burial traditions) persisted at the site for generations after the fire. The next identifiable or perhaps coeval processes in the region include the depopulation of nearby Turkey Creek Pueblo (mostly occupied by locals), a huge residential construction spurt at Point of Pines Pueblo, and the construction of a Mogollon (local)-style great kiva at Point of Pines Pueblo. The overall pattern suggests that the newcomers from the Kayenta region engaged in purposeful forgetting of their immigrant otherness and adopted the identity of local groups in the Point of Pines region.

Lyons, Scott

[160] *Japan's New Paleoclimate: Prospects for Protohistory*

Based on pollen data from Ozegahara, archaeologists have long understood Japan's protohistoric Kofun period as colder and wetter than the previous Yayoi period and subsequent Asuka and Nara historic periods. Though it is not yet widely incorporated into synthetic research on the period, recent higher-resolution data is beginning to overturn this paradigm, suggesting instead that with some exceptional periods, much of the Kofun period was climatically similar to the Japanese archipelago in the twentieth century. The broad climatic similarity between the Kofun period and the twentieth century permits archaeologists to make reasonable assumptions about Kofun period ecological processes based on the voluminous ecological and agricultural research conducted in Japan during the twentieth century. As a source of proxy information for the Kofun period, twentieth-century ecology offers detailed images of Japanese landscapes and processes that can be applied to support or undermine hypothetical connections between climate and political developments, and presents new opportunities for archaeologies of human-environmental interaction in this period. Estimates of forest regeneration and sustainable wood harvesting on the Osaka plain in relation to ironworking fuel consumption illustrate the potential for new research directions.

Lyu, Zhiqiang [387] see Vuille, Mathias

Ma, Jian

[338] *The Evolution and Development of Prehistoric Settlements in the Eastern Tianshan Mountain Region*

Based on the archaeological fieldwork in the past several years, this study explores the evolution and development of prehistoric settlements in the eastern Tianshan Mountain region in Xinjiang, northwestern China.

Ma, Mingzhi

[338] *The Site of Lushanmao and the Inheritance and Evolution of Ritual Architecture in Early China*

The Lushanmao site has uncovered the foundation of a quadrangle courtyard-style palace from the early Longshan period, marking the beginning of courtyard-style palace architecture during the Xia, Shang, and Zhou periods. Notably, the palaces of the Western Zhou period strictly adhered to the symmetrical courtyard layout of Lushanmao, which was subsequently adopted in palace architecture across various historical periods. The latest excavations at the Nanzuo site in Gansu have revealed courtyard-style architecture that directly traces back to the Lushanmao palace buildings, dating as far back as the late Yangshao period. This architectural style is likely the result of a fusion between the courtyard-style buildings of the Jiangnan region and the hall-style architecture of the Loess Plateau. Therefore, we preliminarily conclude that during the late Yangshao period, as large-scale cultural interactions occurred across regions, the Loess Plateau underwent a process of cultural amalgamation and social stratification. This led to the formation of the ritual architectural regulations and ritual vessel combinations that characterized early Chinese civilization, which became the mainstream ritual representations during the Longshan and Xia, Shang, and Zhou periods. This development had a decisive impact on the formation of China's ritual-based society over thousands of years.

Maas, Dakota (University of Texas, San Antonio), and Jason Yaeger (UTSA)

[349] *A Conjunctive Approach: Excavations at Buenavista del Cayo Structure 26*

The Maya site of Buenavista del Cayo is located in the Mopan River valley in western Belize. The polity was

known as Komkom in Classic times, and archaeological and epigraphic evidence indicate that the site was subordinate to the larger kingdoms of Tikal in the Early Classic and Naranjo in the Late Classic period. Komkom's relationship with Naranjo in particular included both positive interactions (gift exchanges) and negative interactions (attacks by Naranjo). Structure 26 is a long, linear structure on the south side of Buenavista's West Plaza. In 2024, we excavated a 2 × 6 m trench on the structure to reconstruct its architectural history and attempt to link it to the history of interactions between Komkom and larger kingdoms. Excavations revealed two phases of construction dating to the Late Classic period. We describe the excavations and the most current findings and interpret them within the framework Komkom's conflicts and the complexity of its changing relationship with the kingdom of Naranjo.

Mabelitini, Brian [75] see Mink, Philip

Mabulla, Audax [123] see Fennessey, Brenna

Macamo, Solange [59] see Moffett, Abigail

Macbeth, Katherine (Colonial Williamsburg Foundation), and Aaron Lovejoy (Colonial Williamsburg Foundation)

[365] *Sacred Sites and Social Spaces: Understanding the Use of Space at a Black Baptist Church in Antebellum Williamsburg*

In the early nineteenth century, enslaved and free Black congregants built the First Baptist Church just off the main thoroughfare of Williamsburg, VA. Excavations at the site of the meetinghouse, ending in 2023, uncovered the remains of the structure and a cemetery within the associated churchyard. In this presentation, we explore why the meetinghouse was built in its specific location and orientation by applying a suite of spatial analyses that examine its connections to the broader urban landscape of Williamsburg. Viewshed analysis, archaeoacoustics, crowd analysis, and a study of architectural precedents provide valuable perspectives on the use of space both within the site itself and in relation to surrounding locations. This examination offers a deeper understanding of the congregation's relationship to the site and allows us to address surveillance, resistance, and the lived experience.

MacDonald, Brandi [391] see Kitchel, Nathaniel

MacDonald, Brandi [76] see Pallas, Caitlyn

MacDonald, Brandi [391] see Pengilley, Alana

MacDonald, Brandi [391] see Straioto, Haruan

MacDonald, Brandi [171] see Wichlacz, Caitlin

Macdonald, Danielle (University of Tulsa)

[277] *Underwater Traces: Use-Wear Analysis of Lithic Assemblages from Submerged Lake Huron Sites*

Identifying use-wear traces on lithics from submerged sites presents unique and intriguing challenges. Currently, there are limited taphonomic studies that explore the impact of lacustrine depositional environments on the preservation of wear traces, complicating the interpretation of traces found on artifacts from submerged contexts. This study addresses this issue by evaluating lithics recovered from submerged sites in Lake Huron using optical and quantitative microscopy to reconstruct their life history through the identification of both use-wear and postdepositional traces. By understanding the range of taphonomic traces present on lithic artifacts, as well as the preservation of use-wear traces in freshwater environments, this research aims to elucidate the challenges inherent in analyzing lithics from submerged contexts. The findings will contribute to a more nuanced understanding of the effects of lacustrine environments on lithic artifacts, ultimately aiding in the interpretation of behaviors of past peoples through the traces they leave behind.

Macdonald, Danielle [240] see Maher, Lisa

Macdonald, Danielle [85] see Matveeva, Anastasia

Machacuay Romero, Marco Antonio [195] see Valqui Güimack, Miguel

Macias, Emmanuel [298] see Unruh, David

MacIntosh, Sarah (Independent Researcher), and Levent Atici (North Carolina State University)

[235] *Controlling Inherited Biases and Analytical Procedures for the Zooarchaeologist: A Case Study from the Central Anatolian site of Kaman-Kalehöyük*

Zooarchaeologists have tackled numerous questions to reveal human-animal interactions in time and space. In addition to depending on animals for their primary products—that is, meat—and secondary products such as milk, muscle-power, and wool, humans have used animals to establish and legitimize status and power and to represent ideologies, identities, and ethnicity. In order to address such abstract concepts, however, zooarchaeologists need to first identify potential sources of inherited bias in their methodology and analytical procedures. Previously, we identified a serious methodological dilemma, and bias, zooarchaeologists face when sorting artifacts/ecofacts in the field. In our case study, bone artifacts from the Bronze Age (ca. 3000–1200 BCE) site of Kaman Kalehöyük were separated from the rest of the faunal assemblage; thus, taxa representation and body part percentages and ratios were greatly misrepresented in the faunal record. This paper expands on that research agenda by analyzing Iron Age archaeological contexts. By examining more material, we aim to determine how significant the changes are with the inclusion of new data when analyzing the distribution of principle taxa and the ratio of body parts. Finally, we probe how these new results affect subsequent interpretations of past human behaviors at the site.

MacKay, Alex [69] see McNeill, Patricia

Mackie, Madeline, Todd Surovell (University of Wyoming), Spencer Pelton (Office of the Wyoming State Archaeologist), Robert Kelly (University of Wyoming), and Matthew O'Brien (CSU, Chico)

[57] *Identifying and Investigating a Deeply Buried Activity Area at the La Prele Mammoth Site*

Between 2014 and 2022 extensive excavations at the La Prele Mammoth site (48CO1401) have identified at least three hearth-centered activity areas associated with a subadult Columbian mammoth. The archaeological deposits at the site (ca. 12,940) are found at least 3 m below modern ground surface, making it difficult to identify additional activity areas and site boundaries using traditional testing techniques. To better understand the site's extent, we placed nearly 200 augers across the site terrace resulting in the identification and excavation of a fourth activity area more than 30 m from the previously known site extent. This new area, Block E, continues to inform our understanding of the Pleistocene occupation at La Prele including addressing questions about mobility, subsistence, and social organization. Finally, this study shows the efficacy of auger surveys for targeted testing of deep deposits on known archaeological sites.

Mackie, Madeline [382] see McDonough, Katelyn

MacLellan, Jessica (Wake Forest University), Melina García Hernández (Universidad Nacional Autónoma de México), Emily Johnson (UC-Santa Barbara), and Ashley Sharpe (Smithsonian Tropical Research Institute)

[118] *Dating Early Ceremonial Centers in Southern Veracruz: Preliminary Results of the Suchilapan Archaeological Project*

The Suchilapan Archaeological Project investigates the relationship between the development of monumental architecture and the transition to sedentary life in Formative period Mesoamerica (ca. 2000 BC–AD 300). Through excavation, radiocarbon dating, and ceramic analysis, we are building a chronology for multiple early ceremonial centers clustered along the Coatzacoalcos River in the Olmec area of southern Veracruz, Mexico. We also investigate Formative era diets through paleobotanical analyses, asking if and when the builders of these centers relied on maize agriculture. Via these means and the survey and excavation of potential residential areas, we will estimate levels of residential mobility throughout the sites' occupations. In this paper, we report preliminary results of our research during 2024 and 2025. This work contributes to a broader understanding of the origins of Mesoamerica as a cultural area, including the relationship between the Olmec and Preclassic Maya.

Macleod, Ruairidh [288] see Rabinow, Sophie

Macleod, Ruairidh [277] see Wang, Yucheng

Macrae, James (Washington State Department of Archaeology and Historic Preservation)

[353] *Critical Thinking in Texas Rock Art Research: Were Pecos River Style Pictograph Sites Produced in a Single Event?*

This paper briefly outlines the arguments and evidence for both the synchronic and diachronic production of Pecos River Style pictograph panels. New studies claim that Pecos River Style rock art sites are synchronically produced murals, painted in color order, and composed in a single production episode. Conversely, my own research spanning two decades has demonstrated that Pecos River Style sites were episodic in production and organized into multiple narrative features using consistent iconographic rules. This ongoing debate is both interesting and fundamental in understanding the structure and function of the Pecos River Style pictographs. Some methodological and a priori reasoning pitfalls in current research designs are explored.

Macrae, Scott (University of Central Florida), Gyles Iannone (Trent University), Hao Nguyen Thi (Institute of Archaeology Vietnam Academy of Social Sciences), Lê Ngọc Hân (Institute of Archaeology Vietnam Academy of Social Sciences), and Pham Tuan Luan (Ninh Binh Museum)

[61] *Evidence of Iron Smelting at the Tenth-Century CE Capital of Hoa Lu, Vietnam*

Recent excavations by the IRAW@Hoa Lu research team have uncovered an iron smelting furnace located in the periphery of the tenth-century CE capital of Hoa Lu, Vietnam. This paper will present the preliminary analysis of the fabrication of this bloom furnace and an interpretation of its associated archaeological materials. The discussion will address the technological precedents of such an early bloom furnace in Northern Vietnam. Further, it will explore the implications it holds for understanding the people who once inhabited this short-lived (968–1010 CE), yet important, ancient city that was once the first capital for the Đại Cồ Việt people.

Macrae, Scott [61] see Barry, Jack

Macrae, Scott [61] see Iannone, Gyles

Madden, Robert (Colorado State University)

[364] *Probability in the Pleistocene: Origins and Antiquity of Indigenous North American Dice, Games of Chance, and Gambling*

Since the publication of Stewart Culin's *Games of the North American Indians* in 1907, it has been well documented that the making of dice, and their use in games of chance and for gambling, was a widespread practice among historic Indigenous North American groups, and that prehistoric artifacts resembling such dice are present in the archaeological record. Despite these facts, and despite continued finds of similar prehistoric artifacts in the intervening years, the antiquity of Indigenous North American dice, games of chance, and gambling remain a mystery because no systematic attempt has been made to trace their origins, identify their earliest appearances, and consider the implications of their antiquity. This omission is due in large part to uncertainty as to how (and even if) prehistoric artifacts can be identified with confidence as dice. This presentation discusses the author's attempts to dispel some of this uncertainty by first deriving a morphological test for identifying prehistoric dice based on common diagnostic attributes appearing on 293 sets of historic Indigenous dice described and illustrated by Culin (1907), and then by using this test to identify and trace the origins and antiquity of these artifacts in the North American archaeological record.

Maddox, Michael (Yale University)

[200] *A Commoner Perspective of the Ancient Maya Ballgame in Northwestern Belize*

During the Classic period the ancient Maya ballgame has been seen as a focal point of religious and political ritual practices. These activities primarily take place in spaces where commoners are traditionally thought to have been excluded and serve to reinforce the ideology and legitimacy of elite religious beliefs. This paper will outline excavations of a commoner ballcourt at the site of Chico in northwestern Belize and explore thematic variations evident in the architecture, materiality, and ecology of the site. Through an emphasis on hydrology and terminal ritual practices it is argued that the ballgame had an important role in the organization and administration of commoner communities at the end of the Late/Terminal Classic period.

Mader, Christian (University of Bonn), Víctor Vásquez (Centro de Investigaciones Arqueobiológicas y Paleoecológicas Andinas, “ARQUEOBIO”), Teresa Esperanza Rosales Tham (Centro de Investigaciones Arqueobiológicas y Paleoecológicas Andinas, “ARQUEOBIO”), Jesús Briceño (Peruvian Ministry of Culture), and Markus Reindel (German Archaeological Institute)

[182] *A Zooarchaeological Assemblage from the Northwestern Rockshelter of the Cerro Llamocca Sacred Mountain Complex, Southern Peruvian Andes*

The Cerro Llamocca Sacred Mountain Complex is located in the high *puna* zone of the Ayacucho region in the southern Peruvian Andes. Recent excavations were conducted in the northwestern rockshelter (PAP-844) of Cerro Llamocca at 4,398 m asl. The available radiocarbon data, archaeological finds, and stratigraphy provide evidence for long-term human occupation of the rockshelter from at least the Formative period ~2340 cal BCE to the present. The large quantity of archaeological finds also include animal remains. The osteological material was analyzed by anatomical and taxonomic identification and quantified by minimum number of individuals (MNI). Camelid dung remains were analyzed for starch, pollen, phytoliths, and plant tissues. The skeletal material includes abundant remains of llama (*Lama glama*) and alpaca (*Vicugna pacos*) bones and other faunal remains of white-tailed deer (*Odocoileus virginianus*) and cuy (*Cavia* sp.). Maize (*Zea mays*), quinoa (*Chenopodium quinoa*), and several grasses, including ichu (*Stipa* sp.) and champa (*Distichia muscoides*), were identified in the camelid dung remains. While most of the animals and plants used by the occupants of the northwestern rockshelter are typical of the local *puna* environment, some resources—especially maize—must have been obtained from lower ecological zones, suggesting interregional mobility.

Madrid, Amber-Marie (CSU Channel Islands), and Jennifer Perry (CSU Channel Islands)

[155] *Optimizing Professional Training in Anthropology Programs to Address Current Workforce Realities*

Increased living costs, inflation, and student debt; declining enrollment in higher education; and significant changes in cultural heritage laws have radically changed archaeology as a profession in evolving ways. Exacerbated by the COVID-19 pandemic, in California this has resulted in recent declines in training opportunities, livable wages, local workforces, and ultimately shortages in qualified archaeological professionals to respond to increased demands. As universities radically alter their curriculum or shutter relevant programs, what is the future for cultural resource management as a profession and community? Educational institutions have the responsibility and opportunity to transform their curricula to meet these changing circumstances. To do so, they must focus explicitly on workforce development, being cross-disciplinary, collaborative, and adaptive by design to emphasize transferable skill sets, communication, and working realities. Solutions include trainings and certifications that do not conform with but can complement traditional degree programs; an emphasis on lifelong learning and continuous improvement; and the valuing and prioritization of mentorship that is inclusive of and relevant to nonacademic archaeologists, other field-based disciplines, and tribal communities.

Madrid, Amber-Marie [198] see Perry, Jennifer

Madsen, David [292] see Davis, Loren

Maffie, James (University of Maryland [Emeritus])

[97] *The Huey Tzompantli as Cosmic Milpa: A Metaphysical Understanding*

One of the principal responsibilities of the Mexica *tlatoani* was renewing the agricultural cycle and more broadly the entire fifth Sun-Earth Ordering. He accomplished this by gifting the life-energies of countless human donors to Tonatiuh, Tlaloc, Tlaltecuhli, and other “deities” over the course of the eighteenth-month year. He also accomplished this by guaranteeing a continuous supply of heads for mounting on the *huey tzompantli* (“great skull rack”). No mere trophy display, *objet de terreur*, or memento mori, the *huey tzompantli* acted as a metaphysically potent, cosmic milpa consisting of well-ordered rows that were sown with *tonalli*-rich, life-renewing human skull-maize-seeds. In this manner it contributed actively—not just symbolically—to (1) the reseeding of the cosmos with maize seeds, (2) the cosmic regeneration of maize (and human vegetative foodstuffs generally), and (3) the transformation of death into life. The *huey tzompantli* placed sowing maize, reseeding the cosmos with human-skull-maize kernels, and hence maize horticulture generally

squarely within the sacred precinct—and hence squarely within the navel, heart, center and axis mundi of the fifth Sun-Earth Ordering itself—which is precisely where these cosmically essential activities needed to be placed and to occur.

Maher, Lisa (University of California, Berkeley), Danielle Macdonald (University of Tulsa), and Alan Simmons (UNLV)

[240] *Early Occupants of Cyprus: Coastal Arrivals and Inland Explorations*

Epipaleolithic (ca. 10–20 kya) hunter-gatherers in Southwest Asia experimented with plant and animal management and developed long-ranging, complex networks of exchange and movement, but little remains known of this period in Cyprus. The Ancient Seafaring Explorers of Cyprus Project (ASEC) extends the broader understanding of Epipaleolithic wayfinding, placemaking, and technological use among the earliest occupants of the island. Geoarchaeological and paleoenvironmental evidence suggests that both coastal and inland locations were extensively used by these hunter-gatherer groups, although much remains elusive about the earliest arrivals and movements between these regions. Taking a landscape learning approach, we present new Epipaleolithic occupations in Cyprus, contextualized within an ever-growing inventory of hunter-gatherer sites and paleo-coastline data, that contribute to our broader understanding of landscape use and movement of these groups during the initial phases of occupation and exploration of Cyprus.

Maher, Lisa [85] see Matveeva, Anastasia

Maikweki, Stephen [373] see Pobiner, Briana

Majewski, Marcin [333] see Slusarska, Katarzyna

Majewski, Teresita (Statistical Research Inc.)

[43] *Working with Clients to Ensure Best Practices in Tribal Consultation: A Consultant's Experiences*

In my more than 30 years of working as a cultural resource management consultant in the American Southwest and Southern California, I have had the opportunity to work for government and private clients to support Tribal consultation and outreach efforts. The best practices I follow are grounded in consistency, trust, and respect, coupled with an understanding of the laws and regulations that undergird meaningful consultation. The examples I share from my experiences illustrate not only “success stories” but highlight the challenges faced when working with clients having varied perspectives on consultation approaches and implementation.

Maki, David, and Sigrid Arnott (Archaeo-Physics)

[243] *Multi-method Burial Surveys Addressing the Apartheid of the Departed*

Consistent and reliable detection of human burials remains one of the most challenging goals of noninvasive surveys. Furthermore, since the graves of marginalized peoples have often been poorly documented and left unprotected, the resulting “apartheid of the departed” complicates efforts to locate and protect their burials. We present multi-method burial identification survey methods and protocols developed over two decades to improve preservation and protection outcomes. Although ground-penetrating radar (GPR) is the most well-known method, it is often not effective due to a variety of limiting factors discussed here. Therefore, multiple complimentary subsurface geophysical survey methods such as GPR, magnetic field gradient, electrical resistance, and electromagnetic induction, combined with HHRD, can provide more robust data and clearer understanding of the subsurface aspects of cemeteries. The result: more equitable protection of those interred in unmarked and disturbed cemeteries and better outcomes for descendant communities. Case studies presented in this paper will include brief discussions of the geophysical results from a variety of mortuary survey contexts throughout North America, followed by a more detailed presentation of results from a “lost” cemetery of institutionalized individuals that was documented and preserved after a combined geophysical and HHRD survey.

Maldonado, Amanda [92] see Wurtz Penton, Michelle

Maldonado, Antonio [53] see De Souza, Patricio

Maldonado, Blanca (El Colegio de Michoacán)

[106] *Copper Production and the Evidence for Intermittent Crafting and Multicrafting at the Late Postclassic Site of Jicalán Viejo, in Michoacán, Western Mexico*

Archaeological research at Jicalán Viejo (ca. 1400–1609), in Central Michoacán, has located potential copper production areas where concentrations of manufacturing slag and other smelting byproducts were recorded. Multiple sources of data and documentary records provide a picture of the organization of metal production at the site. Two different forms of craft production at the household level may have occurred at Jicalán, as proposed by Ken Hirth for diverse crafts in Mesoamerica: intermittent crafting and multicrafting. Both strategies are directed toward maximizing productivity and minimizing risk. The present paper examines the evidence supporting this assumption.

Maldonado Vite, María (INAH Centro Veracruz)

[283] *Evidencias de las interacciones entre los Huastecos y Mayas en el Posclásico, apuntes iniciales*

Es muy conocida la existencia de interacciones culturales entre los pueblos que se asentaron en la Costa del Golfo, sobre todo del Preclásico con los prolíficos estudios de los Olmecas; pero sin duda los estudios más numerosos y avanzados son los Mayas. Las relaciones entre los Mayas y las élites del Clásico de El Tajín, ya has sido probadas. Así mismo, se ha probado la relación entre los toltecas y los Mayas, especialmente del norte de Yucatán, durante la transición del Clásico Tardío al Posclásico ha recibido cada vez más atención. Sin embargo, nunca se ha considerado seriamente el papel que jugó la Huasteca en estas grandes transformaciones culturales, políticas y religiosas. Si bien el foco de atención de las relaciones entre Huastecos y Mayas se ha centrado en su relación lingüística como parte de un mismo tronco Mayence, los estudios aún no son concluyentes y se remontan profundamente en el tiempo. En este trabajo se ofrecen evidencias más específicas de la cultura material y bio antropológica, que trascendieron en la cosmovisión e incluso hasta en la estructura política de la Huasteca Posclásica.

Malinsky-Buller, Ariel [42] see Nora, David

Malinsky-Buller, Ariel [82] see Oikonomou, Ioannis

Malis, Sierra [343] see Zuckerman, Molly

Malkoun, Lauren [227] see Dodd, Lynn

Maloney, Jillian [292] see Gusick, Amy

Maloney, Jillian [183] see Wriston, Teresa

Manchado, Martina [89] see Steele, Laura

Mandel, Rolfe (Kansas Geological Survey)

[53] *Lithostratigraphy as a Tool for Finding Evidence of the First People in the Americas*

In this paper, the application of lithostratigraphy in geoarchaeological research is offered as a powerful tool for determining where Early Paleoindian and Pre-Clovis cultural deposits are likely to occur in buried contexts. This approach is facilitated by an understanding of the history for all sediment comprising each lithostratigraphic unit, including the sediment source, transport agent, depositional environment, and postdepositional alterations (especially soil formation). Lithostratigraphic units are easily recognized and defined in the field based on observable sediment characteristics, such as color, texture and carbonate morphology. Examples of geoarchaeological studies that employed lithostratigraphy at the site-specific and regional scale in the North American Great Plains, Central Lowlands, and Southwest are presented. Specifically, this paper focuses on three lithostratigraphic units: Peoria Loess, the Severance Formation, and the Lykes Formation. At the site-specific scale, potential early (>12.6 ka) archaeological components in these formations include the Scheuerman Mammoth site in western Kansas, the Coffey site in northeastern Kansas, and the Genevieve Lykes Duncan (GLD) site in southwest Texas, respectively. Findings at these sites

underscore the need to explore lithostratigraphic units at the regional scale in searching for evidence of the first people in the Americas.

Mandel, Rolfe [337] see Rosen, Arlene

Mangani, Claudia [375] see Martinelli, Nicoletta

Manin, Aurelie [376] see Speller, Camilla

Mann, Daniel

[280] *Fauna, Flora, and Climate of the Ice-Age Mammoth Steppe and Its Implications for Human History*

During the ice age, was the Mammoth Steppe the planet's largest terrestrial biome or a giant weed patch? At times during the last Ice Age (Marine Isotope Stages 2–4, ca. 15,000–70,000 years ago), the Mammoth Steppe extended from Iberia to the southern Yukon. One peculiarity of the Mammoth Steppe as a biome is that it is defined by its megafauna (species weighing > 40 kg) rather than by its vegetation and climate like most biomes are. Vegetation and climate had limited uniformity in either space or time across the Mammoth Steppe. The vegetation was dominated by ruderal plant communities trying to keep up with the millennial-scale climate changes that repeatedly swept across the boreal region. In contrast, the megafauna of the Mammoth Steppe was more geographically uniform because its species thrived in the milieu of climatic disturbance that kept plant communities in a state of flux. *H. sapiens* and *H. neanderthalensis* were among the taxa that flourished within the Ice-Age milieu of rapid climate change, to the point of displacing less adaptable megafauna in some regions. Our legacy of coping with rapid environmental changes during the Pleistocene has pre-adapted humans for coping with self-induced changes during the Anthropocene.

Mann, Rob (Weintraut & Associates Inc.)

[342] *Putting the Settlers in Settler Colonialism: Power and Ideology in the Archaeology of Settler Sites*

In recent years, archaeological studies of colonialism have drawn heavily on the concept of settler colonialism. While laudable, this perspective is most frequently applied to contexts of colonial conflict and trauma (e.g., war zones and battlefields). It is rarely the theoretical perspective applied to the archaeology of the sites of the settlers themselves (e.g., historic farmsteads, urban/industrial sites, logging camps, etc.). Drawing on concepts of power and ideology in the work of Randall McGuire, this paper attempts to put the settlers back into the concept of settler colonialism.

Manney, Shelby (Arizona Army National Guard), and Michael Heilen (Statistical Research Inc.)

[232] *Reconnecting Heritage, Habitats, and Landscapes: Strategies for Integrating Cultural and Natural Resource Management in the United States*

In the United States, the management of cultural and natural resources follows distinct regulations and workflows, often leading to fragmented management approaches. Federal agencies, including the US Department of Defense (DoD), are increasingly interested in integrating these efforts to create more cohesive, inclusive, and synergistic management approaches. While the rationale for such integration is well-understood, practical approaches to achieving it remain underexplored. This presentation addresses this gap by proposing strategies for integrating cultural and natural resource management through a comprehensive data lifecycle and landscape approach. We propose a framework that incorporates holistic, landscape-oriented perspectives, and emphasizes alignment of management strategies with both the agency's mission and the interests of Tribes and other stakeholder communities. Key elements include the adoption of unified data models and digital tools, establishment of common goals and workflows, and promotion of collaborative interdisciplinary research. This approach aims to facilitate evidence-based policy-making and decision-making and to engage the public's interest in social and environmental history. With a focus on these elements, this paper outlines the operational, organizational, and methodological changes needed for effective integration, particularly for resources and landscapes managed by the DoD.

Manney, Shelby [92] see Disque, Candice

Manney, Shelby [92] see Heilen, Michael

Manning, Sturt [50] see Birch, Jennifer

Manrique, Mayra [378] see Bernard, Henri

Manzanilla, Linda (UNAM)

[171] *Archaeometric Studies of Pottery from Activity Areas Found in the Multiethnic Neighborhood Center of Teopancazco, Teotihuacan, Central Mexico*

In the metropolis of Teotihuacan, central Mexico, the ca. 22 neighborhoods are the most dynamic social units of this multiethnic society. Teopancazco is one of the southeastern neighborhood centers; it was excavated by Linda R. Manzanilla and her students during 13 field seasons (1997–2005) and studied in an interdisciplinary perspective, including geophysical, archaeological, archaeobotanical, archaeofaunal, osteological, isotopic, genetic, and chemical analyses, together with radiocarbon and archaeomagnetic dating. This neighborhood center had a strong economic, social, and symbolic relation to the Nautla region in Veracruz, Gulf Coast of Mexico, through a corridor of ally sites (e.g., Calpulalpan and Xalasco), through which the intermediate elite of the neighborhood organized caravans to bring foreign goods, raw materials, and immigrant labor. My paper will deal with the data we have recovered from pottery from activity areas in the Teopancazco, describing archaeometric data from craters used in Mixtequilla-funerary contexts and cosmetics found in miniature vessels, through scanning electron microscopy/energy dispersive X-Ray microanalysis, X-ray powder diffraction, Fourier transform infrared spectroscopy, and pyrolysis-gas chromatography/mass spectrometry. We detected imported Mixtequilla pottery, Thin Orange Ware from Puebla, Tlaxcala pottery from the Ocotelulco source, and Granular Ware from Guerrero, all studied with neutron activation. We also have pottery from Cherán, Western Mexico.

Mao, Ruilin [79] see Berger, Elizabeth

Mao, Ruilin [321] see Welch, Nathan

Mao, Ruilin [79] see Zhan, Xiaoya

Marcial, Erick [48] see Diezbarroso, Alberto

Marder, Ofer [384] see Shemer, Maayan

Marean, Curtis (Arizona State University)

[281] *Justification for the Comparative Analysis of Occupations of the Coast in South Africa and Morocco during the Middle Stone Age*

Twenty years ago, discussions of coastal resource use in paleoanthropology were largely limited to a handful of papers. Today, the antiquity of coastal resource use and its significance is a vigorously debated research question in paleoanthropology. Coastal resources are important for several reasons. The ethnographic record shows that coastal hunter-gatherers generally differ from terrestrial hunter-gatherers and are, for example, more sedentary and less egalitarian. Coastal resources excel over terrestrial resources in some important nutritional characteristics. Coastal resources are less affected by changes in climate than terrestrial ecosystems and thus could be stable when climate change impacts terrestrial resources. It has been theorized that movement into the coastal niche may have been significant to the evolution of modern humans. The earliest evidence for coastal resource use comes from Morocco and South Africa during the Middle Stone Age. These regions also consistently have shown patterns of behavioral and cultural complexity that surpass other regions. Detailed comparative studies between these two regions are essential and need to examine the following: (1) evidence for site occupation intensity, (2) evidence for the significance of coastal resources in the diet, and (3) the timing and persistence of human occupation of the regions.

Marean, Curtis [191] see Borges-Eckert, Samantha

Marean, Curtis [299] see Hoelzel, Chloe

Marengo Camacho, Nelda Issa [393] see Lozada, Josuhé

Margaris, Amy (Oberlin College)**[175]** *Bone Gut Heart Stone*

When hired into the Oberlin College Department of Anthropology in 2008 I learned I was also de facto steward of 2,000 cultural objects that were warehoused in a pair of campus custodial closets. The antiquated collection, with its objects hailing from around the world and uneven documentation, represented an intellectual conundrum and a professional liability: “getting involved could derail your tenure case,” cautioned one dean. I ignored the dean’s warning, and half a career later gratefully reflect on my graduate advisor Steve Kuhn’s influence on my approach to studying and stewarding this important material culture collection. I will show how items like an Alaska Native seal gut bag and a suit of coconut fiber armor from the drowning island nation of Kiribati serve as material nodes that connect diverse stakeholders. Close analysis of these technologies, drawing on multiple forms of expertise, informs on the past by revealing the deep ecological knowledge held by their original makers and users. This work is equally forward-looking as once-dormant objects become touchstones for Indigenous cultural revitalization efforts in our current era of ecological precarity.

Marguet, Louis (Muséum National d’Histoire Naturelle de Paris), Vincent Delvigne (CNRS UMR TEMPS), Marine Laforge (EVEHA, CREAAH, Université de Rennes), and Nicolas Naudinot (Muséum National d’Histoire Naturelle)**[345]** *The Place of Coastlines in Prehistoric Systems between the Late Glacial and Mesolithic Periods in Western France: Petrology’s Contribution to Assessing the Spread of an Original Coastal Resource—Flint Pebbles*

The LGM and Late Glacial coastal occupations of the Armorican Massif (western France), now submerged, are largely absent from our socioeconomic models and considerations for these period. Despite the lack of direct evidence, current data indicate the frequentation of these coastal environments. During this period, several sources of flint were available in this crystalline massif with no flint continental formation: primary and secondary outcrops of flint located under the actual Channel, both accessible because of lower sea levels (between –120 and –50 m), or marine pebbles from the prehistoric Atlantic coastline located dozens kilometers away from the actual seashore. These marine pebbles, considered as a marine resource in our context, are then the best proxy to explore the place of coastal environments within these communities. Our research is based on the collection and study of a large sample of sea flint pebbles with petrological methods. Archaeological assemblages are then studied using these results. The goal is to determine the importance of coastal pebbles among “channel flints” in these sites to discuss the place of coastal environments during the Late Glacial and the Mesolithic. Finally, this new analysis method can be applied to different coastal environments around the world.

Marhefka, Elaine, and Meghan Howey (University of New Hampshire)**[225]** *Undeniable Evidence: How Teachers Understand Archaeological Discoveries as Inspiration for Local Curricular Revision*

Archaeological artifacts and primary documents carry a tangible historical and cultural significance that K–12 educators need to illustrate, and substantiate, often overlooked narratives in their communities to their students and colleagues. Political and social backlash against teachers, resources, and learning about minoritized lived experiences is inhibiting students from accessing the full richness of their local community’s shared past that can help build an inclusive present. A NEH Landmarks of History and Culture award allowed us to design summer institutes surrounding discoveries from the Great Bay Archaeological Survey (GBAS) focused on an early colonial New England frontier (ca. AD 1600–1750). Two week-long institutes inspired and challenged 72 K–12 teachers from across the country to consider lesser-known histories surrounding significant places in their communities. Thirteen of these teachers are conducting participatory action research integrating their learning from the summer institute into their own curricular designs and revisions. The hands-on, place-based nature of archaeology offers visible substantiation for the existence of conflicting experiences that teachers can rely on, and students can understand. We share visual examples of the ways teachers are integrating their experiences with and inspiration from GBAS’s archaeological findings into their own unique curricula in diverse educational settings.

Marken, Damien, and Matthew Ricker (North Carolina State University)

[325] *Living with Water: Classic Maya Reservoir Management and Urban Engineering at El Peru-Waka', Guatemala*
 Since the first descriptions of their jungle-covered ruins by European explorers, scholars have wondered how the artistically and architecturally vibrant centers of the Preclassic and Classic Maya (ca. 500 BCE–900 CE) flourished in what is often characterized as a difficult tropical environment, with one vital and difficult resource being water. Investigations of water management by the Waka' Archaeological Project (PAW) at the Classic Maya city of El Perú-Waka' in the western Petén, Guatemala, have focused on how the coupled processes of water movement, water storage, and soil formation impacted and constrained urban water availability and quality maintenance. These investigations collected archaeological and geological data through the coring and excavation of previously identified reservoirs and adjacent residential architecture. In this paper, these data will be used to explore the hypothesis that these particular water catchment features, and Lowland Maya reservoirs in general, functioned and were maintained as living ponds, water gardens filled with plant and animal life that would filter out urban waste and other contaminants, ensuring a supply of fresh, potable drinking water to tropical urban inhabitants.

Marko, Annamarie [56] see Cristiani, Emanuela

Marlon, Jennifer [111] see Gillreath-Brown, Andrew

Marques, Carina [243] see Skowronek, Russell

Marques, Sophia (University of Virginia)

[63] *Current Research in the Valle de Mairana, Bolivia*

This poster gives an update on current archaeological research in the Valle de Mairana, Bolivia. On the eastern piedmont of the Andes, this tropical area was once the frontier of the Inka Empire. Current research seeks to learn about the lived experience of precolumbian residents before and during the social upheavals often associated with Inka imperialism.

Marquez-Morfin, Lourdes [36] see Alarcón Tinajero, Edgar

Marrero Rosado, Jose (University of California, Berkeley), and Sabrina Agarwal (University of California, Berkeley)

[233] *Historical and Modern Mortuary Practices in San Juan, Puerto Rico: Mass Graves, Ossuaries, and Exhumations*

In this paper, we present a rescue project at the Cementerio Santa Maria Magdalena de Pazzi, in San Juan, Puerto Rico. Our project seeks to recover the human remains found on a public trail, initially associated with a nineteenth-century epidemic mass grave. Following initial surveys and excavations, a complex multi used history of the site has emerged. Here, we discuss the coexistence of infectious disease mass graves, a common-burial ground, the dumping grounds of overflowed ossuaries and exhumed plots, and a US National Parks Service public trail. Through our preliminary bioarchaeological analysis that sheds light into the historical processes that have led to human remains finding their way into this forgotten cemetery annex, this site challenges us to reconsider past and current perceptions of funerary practices, social inequality, personhood, and connection to current descendant communities in historic Old San Juan. Perceptions of the dead and skeletal remains, as evidenced by past and current mortuary practices in San Juan, are fluid and everchanging. These understandings of skeletal remains highlight the importance of context and community-informed ethical treatment of the dead, rather than a universal approach that risks perpetuating colonial practices in the field of bioarchaeology. ***This presentation will include images of human remains.

Martinez Ordoñez, Eva [26] see Miller Wolf, Katie

Marsh, Erik (CONICET, UNCuyo, Mendoza, Argentina)

[331] *Pulsating Tiwanaku: The Seasonal Surges that Built an Andean City*

Tiwanaku has long been compared to Cuzco, Rome, or Teotihuacan, but generalized models of state and empire have overlooked a crucial difference: Tiwanaku was built by mobile agropastoralists bound to the

seasonal rhythms of the arid Andes. This dynamic means Tiwanaku's population was much lower than previously suggested and saw pronounced seasonal fluctuations. In the lead up to festival season, raised fields were farmed in order to supply feasts, principally to make beer. Beer was served in the region's most elaborate ceramics to that point, Tiwanaku redwares, driving the "chicha economy." These vessels carried potent and portable visual messaging beyond Tiwanaku after festival season. Feasts incorporated work parties, which provided the manual labor to build the city's monuments. This honored and paid debts to shared ancestors, embodied as carved monolith beings. This vision of Tiwanaku accounts for the curious lack of storage buildings, formal roads, and princely burials. This history of the city is anchored to recently updated Bayesian chronological models that track migrants, a previously undocumented volcanic eruption, multiple generations of near-abandonment, and collapse ~AD 1010–1050 that is unrelated to drought. Rather than through competition or bureaucracy, agropastoralists built this Andean city by seasonally leveraging large-scale, inclusive forms of cooperation.

Marsh, Gabrielle, and Matthew Tyler Brown (University of Michigan)

[194] *Gender, Death, and Rank: An Analysis of Mortuary Contexts at Late Formative (600 BCE–200 CE) Muyumoqo, Cusco, Peru*

Gender archaeology came late to South American prehistory, and in particular, the Andes, where ethnographic and historical data have stressed a long history of dual, yet complementary, gender categories. Yet, given the diversity of lifeways and numerous shifts in the sociopolitical terrain of the region, gender is a crucial lens through which to examine the archaeological record. This is particularly true of earlier periods such as the Formative, during which the growth of social and political complexity and the emergence of greater social ranking correlates with shifting gender dynamics. This poster presents the results of an analysis of 29 burials from the Late Formative (600 BCE–200 CE) site of Muyumoqo near Cusco, Peru. We pay particular attention to how gender is constructed through associations with material culture and differential burial practices, as well as how individual health intersects with gender. To do so, we compare mortuary goods, burial style and location, and examine skeletal pathologies and trauma. Using this data, we look at the bigger picture of how gender dynamics were affected in the transition from independent villages to a multi-village polity in the region local to Muyumoqo. ***This presentation will include images of human remains.

Martens, Tracy (Royal Saskatchewan Museum)

[39] *Archaeological Textiles from Victorian-Era Saskatchewan*

Past, and present, fiber objects fulfill an incredible array of human necessities, from utilitarian hunting and fishing tools to powerful symbols of sociocultural and political identity like clothing and personal adornments. For archaeologists and anthropologists, fiber objects offer opportunities to explore common questions including plant and animal resource use and management, trade, and even past environmental conditions. As a technology attributed to women, a detailed understanding of these artifacts and techniques is an opportunity to answer less common but equally significant questions, aimed at filling the gap in our understanding of women's lives, technical expertise, ingenuity, and contributions to life in the past. This project explores the fiber and perishable artifact assemblages from Metis hibernant archaeological sites in Saskatchewan to provide insight into this seriously understudied aspect of Metis life during the late nineteenth century.

Martin, Belinda [174] see Green, Helen

Martin, Debra (University of Nevada, Las Vegas), and Anna Osterholtz

[45] *The Scream of the Butterfly: The Aftermath of Massacre Landscapes*

Context and history are crucial to examine when interpreting both local and broader implications and effects of mass killings and massacres. Massacre scholars have shown that political-economic and cultural events shape the ideas of the perpetrators who become convinced that a massacre is the only option to solve a perceived problem. But local dynamics shape the why, when, how, and where of any given massacre. Thus, massacres are fraught with symbolic and real meanings. These factors come together to shape and define the landscapes and spaces where massacres occur. For massacre events in the past, working backward from the aftermath can illuminate the reasoning and diversity of expression (who is killed and how they are killed) for massacres. Case studies on massacre landscapes in small-scale societies are presented to demonstrate the

usefulness of extending the analysis of sites of mass killings into the ways that the landscapes and spaces of prior violence are variously reused, memorialized, or avoided in the aftermath.

Martin, Debra [343] see Place, Noah

Martin, Debra [45] see Stone, Pamela

Martin, Erik (Far Western Anthropological Research Group Inc.), and Daron Duke (Far Western Anthropological Research Group)

[317] *Projectile Point and Prey Diminution during the Pleistocene-Holocene Transition*

Recent investigations along the ancient shorelines of Carson Lake in the Lahontan Basin and paleo wetlands of the Old River Bed delta in the Bonneville Basin indicate a diachronic reduction in projectile point size occurred across the Great Basin during the Pleistocene–Holocene Transition. Parallel shifts in lithic point morphology appear to have taken place concurrently in the neighboring plains of the Midwest and at broader continental scales across the Americas. This trend unfolded amid significant ecological changes similarly occurring at broad, continental scales spanning several millennia. We propose that projectile point size decreased in response to a reduction in the average size of prey encountered by hunters through the Pleistocene–Holocene Transition. This change is hypothesized to have been driven by a decrease in the frequency (and eventual abatement) of encounters with Pleistocene megafauna and a general reduction in the body size of extant large-game species. We posit that this explanation fits parsimoniously with the scale and consistency of the diminution of lithic technology observed in the Americas that took place against the backdrop of Pleistocene climate change. We review multiple lines of archaeological and paleontological evidence to support this connection between prey choice, hunting technology, and environmental change.

Martin, Erin [86] see Drees, Svenya

Martin, Fabiana María (CEHA, UMAG), Dominique Todisco (University of Rouen-Normandy, France), Damas Mouralis (University of Rouen-Normandy, France), Manuel San Roman (Instituto de la Patagonia and Cape Horn International Center, Universidad de Magallanes, Punta Arenas, Chile), and Luis Borrero (CONICET)

[301] *New Developments in the Archaeology of the Pali Aike Volcanic Field*

A program of paleoecological, paleoenvironmental, and archaeological studies at the Pali Aike Volcanic Field, Chile, was recently initiated. The main goal is to assess the local conditions when humans arrived at the end of the Pleistocene. In addition to a suite of geomorphological, geophysical, chronological, and stratigraphic studies, particularly of the lava fields and peri-glacial features, new excavations at previously known sites took place. The list of sites included Fell Cave, Pali Aike Cave, Cerro Sota Cave, and Cueva del Puma. Test pits at new sites and subsurface testing was also implemented. Some new perspectives offered by these studies are presented, including some preliminary comparisons with previous results obtained at Cerro Benitez, Ultima Esperanza, Chile.

Martin, Fabiana María [382] see Borrero, Luis

Martin, Kathleen [293] see Dawson, Emily

Martin, Lauri (Southwestern University), Eric Heller (University of Southern California), Ava Godhart (Waubensee Community College), and Frank Saul

[52] *Lineage and Legacy: La Milpa North Tomb I and the Origins and Lifeways of Its Non-royal Elite Occupants*

Analysis of mortuary remains provides information on aspects of daily living, whereas isotopic analysis may reveal the geographic origins of individuals. Examination of a tomb burial at La Milpa North, an ancient Maya hilltop palatial compound built and occupied in the Late to Terminal Classic period (ca. AD 600–950) may provide evidence of foreign influence in the political landscape of the Three Rivers Region. Structure 3301, the principal residence of a proposed lineage of non-royal elites, perhaps holding the title of Lakam, contained a tomb beneath a household shrine attached to a masonry vaulted structure with an enclosed courtyard. Similarities between this shrine and similar constructions at the Guzman Group in El Palmar, and the

presence of a large throne-like bench, reminiscent of examples at Calakmul, suggest outside influence in the building of this structure. This paper examines human remains contained within a tomb located underneath the shrine in Structure 3301 in an effort to reveal information about the geographic origins and ways of life of the lineage founders of La Milpa North. *****This presentation will include images of human remains.**

Martin, Lois (Fordham University)

[378] *Drilling into the Maize Heart of Mesoamerican Jade*

Jade dominates ancient Mesoamerican lapidary. While artists shaped the precious blue-green stone into varied forms, the quintessential jewel was a simple, round bead—bored through the center, polished to a sheen, and marked with red: either dusted with vermilion pigment or strung on a crimson cord. Many scholars have noted jade's connections to maize and water. Already visually apparent in preclassic Olmec objects, these links persisted. In Late Postclassic myths, gemstones and corncocks substitute for each other as ballgame winnings; in Templo Mayor deposits, greenstone beads spill from toppled Tlaloc (Rain God) jars. Here I explore further correspondences: between the stone's endurance and maize's recurrent seasons; between the gem's rotary drilling and the cornstalk's growth spiral; between the bead's glistening roundness and the dewdrop that funnels daily into the stalk's furled core; between the jewel's green and red contrasts and maize's cyclical extremes—from cool, verdant sprout, to warm, withered stalk, with its harvest of sunbaked ears. Another possible connection is practical: modern lapidarists use ground corncob as rock-polishing media; ancient Mesoamericans may have too. Through these ties, jade encapsulates the energetics of maize; they lie behind its longevity as a potent and valued Mesoamerican symbol.

Martin, Montana, and Taylor McKinney

[390] *Cultural Resources Research and Compliance Database: For Federal Land Managers*

The work from home requirements related to COVID-19 exposed some large gaps in processes for the conducting archaeological research and surveys. Data was often stored through paper copies and local servers that could not be accessed remotely. This was an issue at the US Army Corps of Engineers (USACE) Tulsa District and reduced the ability to comply with federal law requirements remotely. To combat the short comings the USACE Tulsa District and the USACE Construction and Engineering Research Laboratory created an ESRI based database to help fulfill the requirements of the federal agency to comply with Section 106, Section 110, Archaeological Resources Protection Act (ARPA), and to answer research questions. The database assists in identifying and documenting compliance with the laws and violations/permits of ARPA. By improving data accessibility and management, the system will streamline the compliance process, provide quicker responses to ARPA violations, and also helping to protect sensitive cultural resources.

Martin, Simon (University of Pennsylvania)

[303] *The Battle Mural at Cacaxtla Revisited: Ethnicity and Historicity in Epiclassic Central Mexico*

The extraordinary wall paintings of Cacaxtla, Tlaxcala, Mexico, have been the focus of much analysis and debate since their rediscovery in 1975. The hybridity of the images, in terms of both content and style, clearly demonstrates long-distance contact with the Maya Region during the Epiclassic period (800–1000 CE), but the nature and meaning of that interaction remains stubbornly unclear. This paper revisits the largest and best-known of these paintings, the Battle Mural applied to the north side of the Great Plaza beneath Building B. Scholars have differed as to whether this scene is metaphorical, historical, or some combination of the two. In this paper I argue that some important ethnic distinctions between the two opposing sides have been overlooked and that the Battle Mural may have a greater significance for the whole Cacaxtla painting tradition than commonly realized.

Martin, Terrance [74] see Schurr, Mark

Martinelli, Nicoletta (Laboratorio Dendrodata), Marco Baioni (Museo Archeologico della Valle Sabbia, Gavardo, Italy), and Claudia Mangani (Museo Civico Archeologico 'G. Rambotti', Desenzano del Garda, Italy)

[375] *Dendrochronology at the Pile-Dwelling Site of Lucone D (Brescia, Italy): Chronology, Building Reconstruction, and Wood-Use Practices*

The Early Bronze Age Lucone D pile-dwelling settlement, a UNESCO World Heritage site component, is located in the basin of Lucone di Polpenazze del Garda, northern Italy. It has been excavated by Museo Archeologico della Valle Sabbia from 2007 to today. Over 400 samples already subjected to dendrochronological analysis allow absolute dating of construction at the site to between 2034 and 1967 ± 10 cal BC. The site experienced numerous construction phases, as well as a disastrous fire that caused the collapse of most of the wooden structures, which fell into the water and were thereby preserved. Dendrochronological analysis of all vertical posts in the site's Sector I revealed contemporary wooden elements referable to the same felling phase, allowing reconstruction of the structural mainframe of its different buildings. Applying this method at Lucone D was more difficult than in other pile-dwelling sites, due to the possible presence of stockpiled and reused timbers. GIS analysis of dendrochronological data and dendrotypology has revealed the site's complex operational chain of timber management. Here we present recent dendrochronological results that can help in studying the village's spatial and social organization and in defining the timing of its morphological and technological development.

Martinet, Adrien

[231] *Ceramics of a Lost Age: A Typological Study of the Late Formative Assemblage of Betulia in Northeastern Honduras*

Northeastern Honduras has long been considered an isolated region of Central America, sitting at the peripheral edge of Mesoamerica and the Isthmo-Colombian Area. This preconception was particularly strong against its Late Formative period, since no site had previously been identified between the Cuyamel (ca. 1200–400 BCE) and Selin (ca. 300–1000 CE) periods, leading to the region being considered a backwater. The newly excavated site of Betulia, near Trujillo, challenges this prejudice. Its material assemblage wasn't only markedly distinct from Cuyamel or Selin contexts, but also provided Usulután fragments. The latter are diagnostic artifacts of the Late Formative period in Central America as well as indicators of the site's involvement in interregional Central American interaction networks. This paper investigates the first stratified Late Formative (ca. 400 BCE–300 CE) context in northeastern Honduras through a typological study of its ceramic material. This classification offers an initial understanding of the area's relationship with its neighboring Honduran regions to the west and southwest, but also with more distant regions in El Salvador, Guatemala, Nicaragua, and Costa Rica, which shared elements of a "Central American culture."

Martinet, Adrien [296] see Reindel, Markus

Martinez, Gustavo (INCUAPA-CONICET), Luciana Stoessel (INCUAPA-CONICET), Eugenia Carranza (IMHICIHU- CONICET), Gustavo Flensburg (INCUAPA-CONICET), and Erika Borges Vaz (INCUAPA-CONICET)

[60] *Late Holocene Coastal Hunter-Gatherer Occupations at the Eastern Pampa-Patagonia Transition of Argentina*
The coastal archaeology of the eastern Pampa-Patagonia transition (Argentina) reveals human occupations since the Middle Holocene. In Bahía San Blas, near the mouth of the Río Negro River, the Pozzobón archaeological locality is spatially distributed along 300 m besides the coastal strip, at only ca. 50 m from the seashore. Here, we concentrate on the Pozzobón I-Conchero I site, where large and dense surface artifact distributions, as well as sealed sites, allow lithic, pottery, zooarchaeology, taphonomy, bioarchaeology, and paleodietary studies. Radiocarbon chronology spans from ca. 2,000 to 900 years BP. We present and discussed the sealed archaeological record which appears associated to a so called "shallow shell midden" composed of "yellow clams" (*Amarilodesma mactroides*), located on the top of a buried soil on which, in turn, important aeolian mantles are deposited. Despite the proximity of the very dynamic shoreline and the unstable sandy eolian setting, the good preservation of archaeological materials (e.g., bones) is highlighted. In addition to discussing site functionality, our main objective is to address bone and lithic taphonomy, site formation processes, and site resolution and integrity in this unstable setting and its impact on the preservation of the archaeological record.

Martinez, Gustavo, and Donald Forsyth (Brigham Young University [Emeritus])

[383] *La cerámica de la Cuenca Mirador: Perspectivas al entender la fabricación y el intercambio a un nivel regional*
La cerámica de la Cuenca Mirador es un tema bastante fascinate porque la muestra viene de por lo menos 56

sitios arqueológicos a un nivel regional. Los análisis de estos materiales están a cargo de Dr. Donald W. Forth, Silvia Alvarado, y su servidor, y abarca una estimación de más de tres millones de fragmentos de cerámica. Todo este material está identificado, marcado, y clasificado por los miembros del proyecto en el laboratorio en Guatemala, supervisada por Maestra Beatriz Balcarcel. Los análisis demuestran patrones de las formas, tratamientos de las superficies, las pastas, y las temperaturas de la cocción, además de identificaciones de centros de la fabricación, patrones de intercambio, y estilos y formas según la cronología que son consistentes, desde las épocas más tempranas en el área (Preclásico Medio temprano), hasta la consistencia de la cerámica de la esfera Chicanel del Preclásico Tardío, hasta el Clásico Temprano, el Clásico Tardío, y lo poco que hay del período Postclásico. Tales datos nos permiten relatar más de la historia humana en este sistema geográfico, y las muestras servirán para los investigadores futuros.

Martinez, Valentina (Florida Atlantic University), and Nicole Jastremski (Central Washington University)

[185] *Females and Ancestors: Creating an Ethical Foundation to Recover and Analyze Precolumbian Osteological Remains*

The visibility of females' efforts in the development of Ecuadorian archaeology is still in progress. Therefore, we begin our conversation with an evaluation of the contributions of female archaeologists working within the domain of bioarchaeology, an arena practiced mostly by women. However, their voices are still not heard by male Ecuadorian archaeologists. In the first part of the essay, we introduce the work of a few females with diverse backgrounds and their accomplishments in the realms of excavation, interpretation, conservation, and storing, etc., of human remains. Emphasis is given to the difficulties women encountered and continue to encounter while navigating the gendered "ecosystem" of bioarchaeology research in Ecuador. Despite this, female archaeologists have been at the vanguard of the bioethics debate addressing issues of local community inclusion in the research process and repatriation of osteological materials. In this regard, we present our findings from the first multivocal bioethics workshop conducted in coastal Ecuador with the participation of scientists, governmental agencies, and the descendant community.

Martinez, Valentina [56] see Klemmer, Amy

Martinez, Valentina [105] see Velasco Alban, Janny

Martinez De Luna, Lucha (University of California, Los Angeles)

[393] *O'na Tök and Middle Formative Interregional Exchange in Southeastern Mesoamerica*

In Mesoamerica, the Middle Formative (1000–400 BC) marked a critical period when numerous communities emerged with new public spaces and spiritual places. The surge of ceremonial activity detected by the construction of sacred centers, the increase of ritual deposits, and the production of ceremonial paraphernalia in southeastern Mesoamerica reveals that various communities actively participated in an interregional exchange of goods and ideas. The proposed study will examine trends in social practices within ceremonial complexes and deposits to gain insight into how interregional interactions may have reconfigured sociopolitical changes. As a case study, this paper presents the results of chemical composition analyses of ceramics and obsidian deposited in a mixed material culture deposit within the ceremonial complex of O'na Tök, a site inhabited during the Early and Middle Formative period in the Central Depression of Chiapas.

Martínez González, Javier [48] see Trejo Ordoz, Alondra

Martinez-Greer, Fidel [125] see Vogt, Cassie

Martínez Mora, Estela (Instituto Nacional de Antropología e Historia), Marilou Renard (Sorbonne University), and Camille Simon (Sorbonne Université)

[118] *Recent Research at Conjunto Norte Rancho Aserradero, Huasteca Potosina*

Archaeological research conducted since 2010 at Conjunto Norte Rancho Aserradero (CNRA) has provided information on an elite settlement on the outskirts of the Tamtoc Rector Center in the Huasteca Potosina. The various funerary contexts studied, from the erection offering of the main building to the rich individual burials, provide data on funerary traditions, body modifications, and the health status of the buried

population. The ceramic, malacological, lithic, and zooarchaeological material also allows us to learn about the material culture of this population, through the presence of goods and products of local and foreign origin. The presence of prestigious goods in some burials also shows that this society was part of a network of interregional exchanges along the Gulf Coast, in Mesoamerica, and beyond. Furthermore, the results of these excavations provide data on the different stages of occupation and the activities present in this group of buildings with civil functions belonging to the Late Postclassic period (AD 1300–1521). *****This presentation will include images of human remains.**

Martínez Mora, Estela [118] see Renard, Marilou
Martínez Mora, Estela [118] see Simon, Camille

Martínez-Polanco, María (Universidad Nacional de Colombia)

[54] *White-Tailed Deer Management in the Archaeofaunal Record of Parita Bay and the Sabana de Bogotá*
Management refers to “the manipulation of the conditions of growth of an organism or the environment that sustains it, in order to increase its relative abundance and predictability, and to reduce the time and energy required to harvest it.” This process is one of the preliminary steps before domestication. The white-tailed deer (*Odocoileus virginianus* Zimmermann 1780) serves as an optimal proxy for documenting the spectrum of human-animal interactions, ranging from wild encounters to garden raiding and direct taming. White-tailed deer possess numerous characteristics that make them ideal candidates for management. For instance, their size ranks them among the largest mammals in the Neotropics. These adaptable animals thrive in various habitats and environments, from deserts to tropical forests, largely due to their flexible diets. The aim of this presentation is to discuss the zooarchaeological and taphonomic analyses of two preceramic contemporaneous assemblages of white-tailed deer from Cerro Mangote (Parita Bay, Panama) and Aguazuque (Sabana de Bogotá, Colombia). The study provides evidence of deer population management practices, including the selective hunting of adult individuals of both sexes and the targeting of older deer.

Martínez Vázquez, Dante Bernardo

[330] *The Tarímbaro valley (Michoacán, México) and Its Relations with Teotihuacan and Tula during the Classic and Epiclassic Periods*

This presentation aims to present the preliminary results of the archaeological research that was carried out in the Tarímbaro Valley in the state of Michoacán, Mexico, during the years of 2023 and 2024, where 65 archaeological sites were registered. The Tarímbaro Valley is located south of the Cuitzeo Basin, a region that has previously been investigated for its great potential in the study of the development of complex societies in Mesoamerica, as it stands out for its settlements since the Formative period (especially of Chupícuaro culture) and the important urban development that takes place during the Classic–Epiclassic periods, highlighting the links that these cities had with the central highlands, connections that were interrupted with the emergence of the Tarascan state in the late Postclassic period. Tarímbaro is a place of great relevance for understanding this social development, thanks to have a wide variety of resources and being located on extremely fertile lands. This allowed the cities located in the valley the possibility of exporting several materials and importing others, highlighting the relationships they had with Teotihuacan and Tula, which is reflected in the archaeological material of the region.

Martínez-Yrizar, Diana [289] see McClung De Tapia, Emily

Martini, Sarah (Yale University)

[273] *New Traditions, Renewed Chronologies: Characterizing Lifeways from 500 BCE–1000 CE in the Foothills and Highlands of Piura, Peru*

Seminal projects in the foothills and highlands of Piura, Peru during the 1980s and 1990s introduced the important sites of Cerro Ñañañique (EH, first mil BCE) and the necropolises of Olleros (EIP/MH, first mil CE) to the scholarly community. Interpretations of the chronology, social networks, and lifeways of these sites' occupants were, however, hampered by the absence of other nearby excavated sites for comparison. While surface surveys attempted to fill this gap, the lack of and/or confounding radiocarbon dates, particularly in the final centuries BCE, make conclusions questionable. In this paper, I reevaluate the existing relative chronology

for the final millennium BCE and first millennium CE based on analyses of the newly excavated Piuran sites of Las Pampas de Panecillo and Cerro La Plaza de Portachuelo de Culucán. Integrating radiocarbon dates with formal stratigraphic and material analyses, I identify new social groups present during this period, outline their characteristic ways of life and death, and consider similarities and differences between the early (final centuries BCE) and later (early/mid-centuries CE) occupations of this zone. While preliminary and based on only two sites, the results suggest the need to reconsider existing narratives of Piura as the peripheral “edge” of the Central Andes. ***This presentation will include images of human remains.

Martinoia Zamolo, Valentina (Simon Fraser University, Burnaby, Canada), Mario Novak (Institute for Anthropological Research, Zagreb, Croatia), Dragana Rajković (Archaeological Museum of Osijek, Osijek, Croatia), Goran Tomac (University of Zagreb, Croatia), and Michael Richards (Simon Fraser University)

[288] *Exploring Neolithic Animal Husbandry Practices in Croatia through Stable Isotope Analyses*

The arrival of the Neolithic in Europe marked a pivotal transition in human history, defined by the introduction of agriculture and profound changes in human-animal relationships. Croatia, a major corridor for the spread of the Neolithic through Europe, offers a key setting to study these interactions. The Neolithization in Croatia itself was complex, with varying rates of adoption and adaptation of the “Neolithic package” influenced by local climates and cultures. Zooarchaeological data reveal distinct trends: the Adriatic coast shows consistent early Neolithic faunal assemblages dominated by ovicaprines, while inland regions show diverse assemblages with varied proportions of wild and domestic species. However, zooarchaeology alone cannot fully capture how animal husbandry was integrated and managed by human communities. Integrating stable isotope analysis with zooarchaeological data can significantly enhance our understanding of how the Neolithic package was adopted and adapted over time. This study presents the largest isotopic dataset for the Neolithic in Croatia to date, including 65 human and 46 faunal remains from the Early to the Late Neolithic. Our findings further our understanding of Neolithic practices in Croatia, revealing both continuity and change in animal husbandry throughout the period, and underscore the complex interplay between human communities and their environment.

Martinón-Torres, Marcos (University of Cambridge), Borja Legarra Herrero (UCL Institute of Archaeology), Agnese Benzonelli (University of Cambridge), Jasmine Vieri (University of Cambridge), and Maria Uribe Villegas (Museo del Oro, Bogota)

[49] *Gold and Heterarchy: From Crete to Colombia*

The role of metals in prehistoric societies is typically linked to concepts of power and hierarchy. Challenging established assumptions, the project led by Vince Piggott and colleagues in the KWPV of Thailand was one of the first to introduce heterarchy in archaeometallurgy. They demonstrated that large-scale, complex metallurgical technologies could be sustained in societies that were not dominated by vertical and coercive power structures. Following in their footsteps, the REVERSEACTION project (www.reverseaction.org) focuses on the study of luxury technologies in heterarchical societies. We investigate craft organization, technological sustainability, and the consumption of exotic materials in social organizations without state structures. This presentation will outline some contextual studies of the production and consumption of goldwork in Prepalatial Crete and prehispanic Colombia. Object biographies illustrate that, while gold can be understood as a luxury material, its provision, manufacture, and use were not restricted to political elites. Rather than power and social stratification, concepts of collective action and sharing become more useful to explain the archaeological record.

Martinón-Torres, Marcos [374] see Benzonelli, Agnese

Martinón-Torres, Marcos [392] see Li, Xiuzhen

Martinón-Torres, Marcos [308] see Lu, QinQin

Marty, Johanna [125] see Leiva, Jennifer

Maryon, Sarah, Sally Christine Reynolds (Bournemouth University), and Matthew Bennett (Bournemouth University)

[211] *Investigating the Morphology of Shod Footprints: An Experimental Approach*

The archaeological record for ancient shoes is minimal, due to their organic composition and therefore perishable nature. Comparatively, fossil footprints have a better record of preservation. Therefore, to ascertain the longevity of footwear, the best chance of doing so is through the identification of shod footprints. Here, an experimental approach was used to investigate the morphology of shod footprints by recreating examples of ancient footwear and testing these in sandy substrates with different moisture conditions. The results of these experiments demonstrate that a woven jute twine sandal will obscure the natural features of the foot and will imprint the shape of the shoe, whereas a supple leather moccasin will only blur the natural features of the foot at best, leaving a foot shape that will remain visible in the impression. Using these results will allow us to identify shod footprints in the ichnological record much earlier than the archaeological record for ancient footwear, using the footprints as a proxy for ascertaining when footwear appeared.

Maschek, Dominik (Leibniz Zentrum Fuer Archaeologie [LEIZA])

[170] *Are Rebellions Visible in the Archaeological Record? The Case of Fregellae in Latium, 125 BCE*

Violence and warfare can be counted among Michael Schiffer's "cultural" factors or transforms that influence the formation of the archaeological record. Although the application of violence itself is commonly a short-term process, it causes substantial impact on landscapes on both a human and an environmental scale. In many cases, this leaves behind structural evidence. The impact of violence on individuals, and social groups can manifest itself in changing modes of production and consumption, land use, belief systems, and styles of representation, such as inscriptions, artworks, and monumental architecture. Moreover, it can cause fundamental changes or additions to existing settlement patterns, such as the eradication of old settlements and the appearance of new central places. In extreme cases, violence leads to a veritable extinction of sociocultural practices or to their replacement with other ways of living and thinking, a process that Dan-el Padilla Peralta has recently described as "epistemicide." Through the specific case study of Fregellae in Latium, destroyed 125 BCE after a short-lived "rebellion" against Rome, this paper will explore how the integration of archaeology with other literary and documentary sources makes it possible to arrive at a differentiated picture of the scale and processual nature of such events.

Masinton, Anthony [225] see Nicholson, Christopher

Masson, Marilyn (University at Albany SUNY)

[387] *Archaic Stone Tools from the Belize Archaic Project*

Analysis of a large sample of Late Archaic tools from the multiyear Belize Archaic Project at Progreso Lagoon provides an updated assessment of formal (and especially) informal flake tools utilized by Preceramic peoples extensively occupying the lagoon shore. Primarily from habitation sites, this analysis assesses the types of activities conducted as well as the production technologies reflected by the characteristics of debitage, utilized flakes, retouched flakes, unifaces, and bifaces. This first effort contributes a holistic assessment of the strategies and adaptations of this population, best known for a unifacial macroflake tradition that is now understood to reflect the most diagnostic aspect of lithic assemblages that reflect diverse activities including food production, preparation, and crafting. This analysis expands understanding of semi-sedentary, horticultural peoples living in northern Belize prior to the emergence of Maya society.

Matadamas-Gomora, Diego (Tulane University)

[48] *A Rural Community within an Urban Center: The Postclassic Occupation at the Site of Tlalancaleca, Puebla*

The site of Tlalancaleca, located in the western portion of the Puebla-Tlaxcala Valley, is recognized as one of the earliest urban centers in central Mexico. Archaeological evidence indicates that this long history started with its foundation during the Middle Formative period (ca. 750 BCE) and culminated with its abandonment during the Terminal Formative (ca. 250 CE). Research by the Tlalancaleca Archaeological Project has focused on the study of the development and transformation of the site during this period. However, recent explorations allowed the identification of Postclassic architecture and artifacts (ca. 900–1521 CE), which

indicate an episode of reoccupation after more than 800 years. The absence of monumental architecture, administrative buildings, or a grid plan suggests that the settlement was modest, likely rural. In this paper, I will present the results of the analysis of Postclassic ceramics and lithics to explore the community's lifeways and the interactions between Tlalancaleca and the major urban centers in the region, deepening the understanding of the sociopolitical dynamics between urban and rural communities in Postclassic central Mexico.

Mather, Caroline [174] see Gliganic, Luke

Mather, David

[74] *Archaeological Bear Ceremonialism Interpreted through Tooth Measurements and Wear from Black Bears of Known Life History*

Concentrations of black bear (*Ursus americanus*) remains were examined from four Late Woodland archaeological features related to Kathio National Landmark in Minnesota, representing single ceremonial events in the history of the Dakota Nation. Archaeologically, they were superficially similar, consisting of fragmented bear cranial bone and teeth, with the cheek teeth (molars 1–3 and 4th premolar) most consistently well preserved. The analytical power of these teeth as datasets was realized through comparative study with recent skulls from black bears of known life history, derived from a long-term wildlife biology project. This identified statistically significant differences in tooth size for male and female bears, and a reference for Mary Stiner's ursid tooth wear index developed to assess the relative age at death for Late Pleistocene bears. Combined with archaeological context, this revealed zooarchaeological variability in the feature assemblages related to the purpose of the rituals, within and beyond the scope of A. Irving Hallowell's classic anthropological concept of bear ceremonialism.

Mathews, Beth (Antiquity Consulting)

[122] *Quantifying South Basin Salish Sea Midden Sites: Empirical Data for Cultural Resource Management*

Shell midden sites on the Salish Sea record the history of Coast Salish shellfish harvesting and can contain objects and features associated with seasonal camping and long-term residence. These places represent patterns of Coast Salish prehistory/history (Criterion A of the National Register of Historic Places), provide important archaeological data on Coast Salish heritage (Criterion D of the National Register of Historic Places), and are protected against unmitigated impacts in Washington State under RCW 27.53.060. Hundreds of these sites are recorded along the Puget Sound shoreline, where they are susceptible to impacts from development, shoreline armoring, erosion, and even shoreline restoration efforts. What methods are we using to identify these places in cultural resource management, and how can we better predict the locations of these sites? This poster presents the results of our research into shell midden archaeological site patterns in the southern Puget Sound.

Mathews, Jennifer [223] see Kingery, Adam

Mathiowetz, Michael (Getty Research Institute), and Meradeth Snow (University of Montana)

[316] *Art and Science Collide: Investigating Demography, Population Circulation, and Cultural Change in the Aztlán Region of West Mexico through Humanistic and Scientific Approaches*

In late 2024, the Getty in partnership with museums and scientific institutions across Southern California launched the initiative "PST ART: Art & Science Collide" as part of their landmark Pacific Standard Time (PST) series. The program's goal is to investigate the intersection of art and science in collaborative projects that address questions on human expressions of culture and biological relations to the environment in the past and present. In a separate endeavor but with a similar collaborative spirit, the present authors initiated a project funded in 2020 by the National Science Foundation that bridges the arts and sciences in examining prehispanic demographics and population circulation in the Aztlán region (AD 850/900–1350+) of west Mexico. This project engages legacy collections at the UCLA Fowler Museum derived from the Anthropology department's past research in West Mexico. We focus on the Aztlán sites of Amapa and Peñitas on the Nayarit coastal plain and Tizapán el Alto in highland Jalisco and provide some recent results on the scientific study of ancient DNA and the results of direct AMS dating together with insights from the study of art,

symbolism, cosmology, and landscape ritualism in a step toward bridging scientific and humanistic approaches to the past.

Mathiowetz, Michael [36] see Darlington, Emily

Mathiowetz, Michael [297] see Zoiss, Emma

Mathison, Erin [300] see Medlin, Ashley

Mathison, Erin [96] see Smith, Heather

Mathwich, Nicole (San Diego State University)

[376] *Herd Management Strategies in Colonial Sonora: Regional Trends and Emergent Shared Practices*

The introduction of livestock in colonial Pimería Alta, today southern Arizona, laid the foundation for the modern economies of Sonora and Arizona, and the introduction of European livestock and agricultural practices by Jesuit missions transformed the region's economy. This study explores the herd management strategies in the Pimería Alta by comparing them with other mission rectorates (religious administrative districts) in northern colonial Sonora. Using historical inventories and statistical analyses, this research highlights the central role of cattle, sheep, and horses in the colonial economy and identifies emergent trends. The results indicate regional differences in livestock management and a general decline in herd sizes over time, influenced by environmental and sociopolitical factors such as raiding pressures. Notably, there were strong regional distinctions in equine management. There were overall large patterns regionally in cattle and caprine management that transcended districts, suggestive of an emergent regional ranching culture. Despite linguistic and cultural differences among indigenous groups in the region, the desert environment and colonial economic pressures produced similar management patterns in all four districts. This study contributes to understandings of colonial livestock management and the foundations of the cattle industry and ranching cultures of the US-Mexico borderlands.

Matisoo-Smith, Lisa (School of Biomedical Sciences, University of Otago), Tristan Paulino (University of Otago), Bwenaua Biiri (University of Otago), and Anna Gosling (University of Otago)

[173] *Mind the Gaps: The Value of a Holistic Approach to Understanding Pacific Settlement History*

In 2010, Addison and Matisoo-Smith published a paper challenging the widely accepted model regarding the settlement of East Polynesia, specifically addressing the origin of East Polynesian colonists and identifying possible drivers for the resumption of the eastward expansion of Pacific peoples around 1500 BP. The paper originated from discussions around how we might explain various "gaps" in the archaeological and zooarchaeological record in the Pacific. It also identified that much of Micronesia appeared to be a geographical gap in Pacific research. Here we will review the linguistic, archaeological, and genomic evidence that has accumulated in the last 15 years, including our recent genomic research in Micronesia, to see if we are any closer to understanding and reconstructing Pacific settlement history.

Matson, R. G. [55] see Simon, Katie

Matsuda, Marie (ERO Resources), Tiana Duncan (ERO Resources), and Jonathan Hedlund

[230] *Through All Seasons: Changing Subsistence during the Middle Archaic Period across the Palmer Divide, Colorado*

The Palmer Divide is a geologic region east of the Front Range of Colorado that separates the South Platte River Basin to the north and Arkansas River Basin to the south. The region is an ecological island with a rich history dating from the Late Paleoindian to the Middle Ceramic. Numerous sites have been documented and excavated in the region, providing invaluable data to the area amid rapid development and the loss of these archaeological resources. Excavated sites dating to the Middle Archaic (5000–3000 years BP) are the most prevalent and are comprised of densely clustered hearths, potential shallow pithouses, and evidence of broad-based subsistence strategies. Previous research within the region has suggested this period may be the first time permanent, full-time occupation occurred in the Denver Basin. However, the data from these excavations have yet to be synthesized and remains primarily in gray literature. This presentation aims to

contextualize the Middle Archaic period in the Palmer Divide to expand our current understanding of lifeways within the region and examine whether Indigenous groups began to establish year-round subsistence.

Matsumoto, Mallory

[200] *Inter-dynastic Ritual Exchange among the Classic Maya: Brides, Gods, and Deity Impersonation*

The Classic Maya (250–900 CE) lowlands of Mesoamerica were occupied by dozens of interconnected polities whose elites shared a common intellectual and material culture, as well as sociopolitical institutions like divine kingship and the role of ritual performance in legitimating dynastic rule. This paper suggests that an important context for maintaining this shared culture through inter-dynastic exchange was exogamous marriage. Using the example of deity concurrence or impersonation, I argue that noblewomen who married into a foreign polity brought with them cultural knowledge that included ritual practices with which members of the royal family negotiated their dynastic identity. By performing deity concurrence themselves and sharing their understanding of the ritual with their partners and offspring, foreign queens contributed to development of local dynastic ritual and to ongoing maintenance of a regionally shared elite culture. This perspective on exogamous marriage recasts Classic Maya exogamous brides as cultural actors who shaped the identity of dynastic communities into which they married.

Matsumoto, Yuichi (National Museum of Ethnology), and Yuri Cavero Palomino (Universidad Nacional Mayor de San Marcos)

[282] *Recent Excavations at Campanayuq Rumi and Chupas: Implications for Understanding Socioeconomic Transformations during the Late Initial Period and Early Horizon in the Peruvian South-Central Highlands*

Recent investigations in the south-central highlands of Peru demonstrate that this region played an important role in the early formation of complex societies in the Andes. Our excavations at Campanayuq Rumi strongly suggest that the emergence of socioeconomic differentiations in this region was related to the acceleration and intensification of interregional interaction, which can be related to the Chavín Phenomenon. According to the data from Campanayuq Rumi, this process went through two important transitions; one around 1000 BC and the other around 800 BC. However, the scarcity of AMS dates from the possible contemporary centers in the Ayacucho region made it difficult to fully evaluate this process in a wider level. For the purpose of considering this theme from a regional and diachronic perspectives, we carried out an archaeological investigation at the site of Chupas, located about 60 km to the northwest of Campanayuq Rumi. The preliminary results from Chupas suggest that the relationships between Campanayuq Rumi and Chupas were not hierarchical, and they participated in the network of interregional interactions independently. A tentative comparison between these sites allows us to reconsider the nature of the emergence of early complex societies in the Peruvian south-central highlands.

Matsumoto, Yuichi [66] see Druc, Isabelle

Matsumoto, Yuichi [191] see Sjodahl, Julia

Mattson, Hannah (University of New Mexico)

[274] *The Tonque Agrarian Landscape Project: Small Structures, Field Houses, and the Organization of Rural Settlement in the Eastern Sandia Foothills*

Between 2012 and 2024, portions of a large parcel of private land near Placitas, New Mexico, were investigated as part of four seasons of the University of New Mexico field school and several CRM projects. This area, located south of Tonque Pueblo along the eastern Sandia foothills, was found to contain a high density of small structures dating to the Classic period, particularly the fourteenth through early sixteenth centuries. Both survey and excavation reveal that these structures exhibit significant variability in size, construction, occupational span and intensity, and association with agricultural features and natural hydrologic features. This calls into question the utility of the monolithic category of “field house,” as well as our understanding of the use of the landscapes surrounding large Classic period communities in the Middle Rio Grande Valley.

Mattson, Hannah [42] see Schleher, Kari

Matveeva, Anastasia (University of Tulsa), Danielle Macdonald (University of Tulsa), and Lisa Maher (University of California, Berkeley)

[85] *Exploring Personal Ornamentation at Kharaneh IV: An Aesthetic Analysis of the Shell Bead Assemblage*

About 20,000 cal BP, the presently arid desert environment at Kharaneh IV, Jordan, is thought to have been a resource-rich wetland, yet only 12% of the examined shell bead assemblage is associated with terrestrial/freshwater species—the remaining 88% is attributed to marine species sourced from either the Mediterranean or Red Sea, both over 200 km away. Past research has argued that this supports the existence of a trade network within the region, and that variations in bead design over the site's thousands of years of occupation may correlate with unique sociocultural meanings. Aesthetics as an analytical lens may help uncover what “rules,” if any, governed mollusk selection, discern stylistic trends, and aid in comprehending the apparent preference for marine mollusks over freshwater/terrestrial species. By better understanding the personal ornamentation practices of the people living at Kharaneh IV, we may gain more insight into the evolution of human behavior and aesthetic sense during the Epipaleolithic period.

Maughan, William, David Byers (Utah State University), and Colter Hoyt

[64] *Field Methods and Discoveries at Utah State University's Archaeological Field School*

Utah State University conducted an investigation of a formative period site outside of Boulder, Utah, on private land. This field school took place on 14 acres of unsurveyed land within close proximity to Anasazi State Park. Students learned how to properly conduct pedestrian surveys, record sites using official Utah archaeological site forms, excavate features visible on the surface and subsequent subsurface deposits, and record in situ artifacts with various tools such as a total station. These processes resulted in the recording of four new surface sites, one presenting upright stones suggesting a feature of some kind, two block excavations, and the collection of artifacts such as various stone tools/debitage, pottery fragments, animal bones, and corn cob remnants. Ceramics suggest a mixed Fremont/Puebloan occupation of small housepit domiciles likely part of the broader community associated with the standing structures found at nearby Anasazi State Park.

Mauldin, Raymond [300] see Wigley, Sarah

Mauran, Guilhem [69] see Shang, Xiaozheng

Mauricio, Ana (Pontificia Universidad Católica del Perú)

[370] *Role(s), Development, and Perspectives of the Boletín de Arqueología PUCP in Peruvian and Andean Archaeology*

The *Boletín de Arqueología PUCP* is an open-access archaeology journal published by the Humanities Department of the Pontificia Universidad Católica del Perú (PUCP). This journal started in 1997 publishing the results of thematic Andean archaeology symposia carried out at the PUCP. Since 2013, this journal has implemented a series of changes in its editorial policies such as peer-review evaluations, the inclusion of a wider variety of topics, and the publication of non-thematic issues. This presentation will summarize the transformation and challenges experienced over the last 10 years, both in the editorial and academic aspects, and it will discuss the role of this publication within Peruvian archaeology and its perspectives and role in a more general Andean context.

Mauricio, Ana [123] see Hoover, Kelly

Mauricio, Douglas (Mirador Basin)

[383] *Poder, religión y gobernanza representada en las cabezas de estuco de El Mirador, Petén.*

Como resultado del hallazgo de varias cabezas de estuco modelado en una de las trincheras de saqueo en la estructura principal del Grupo Casa del Coral, El Mirador, Petén. Se han llevado a cabo investigaciones intensivas y extensivas en la estructura principal del grupo para poder determinar la procedencia de los mismos, dando como resultado en el descubrimiento de más de 40 cabezas de estuco modelado de seres antropomorfos y mitológicos que representan el poder de gobernar y la religión de la cosmovisión maya en cada uno de estos personajes. Son varias las interrogantes que han surgido sobre el descubrimiento y la

importancia de este hallazgo para el área. En esta ponencia se darán a conocer los descubrimientos en el Grupo Casa del Coral y las interpretaciones preliminares de estas cabezas de estuco modelado.

Mauricio, Douglas [383] see Hernández, Enrique

May, J. (Schiele Museum of Natural History)

[299] *Recovering Catawba Fiber Technologies: Positive Cast Analysis of Ceramics from the LaFar Site (3IGS30)*
Fiber perishable industries such as basketry and textile production were nearly universal among the late precontact period Indigenous Peoples of North America. Humidity and acidic soil conditions in the Catawba Valley of the North Carolina piedmont region inhibit the recovery of precontact period fiber perishables, and consequently such substantial industries are frequently underrepresented in the archaeological record. However, secondary archaeological correlates including negative fiber impressions on ceramics have been used to compensate for the lack of primary samples in this area. Positive cast analysis of cord-marked, fabric-impressed, and net-impressed potsherds from the LaFar Site (3IGS30) provides a history of Late Woodland period Catawba Valley fiber technology in the context of ceramic surface design. At least 14 distinct fiber technologies have been documented, including cordage, knotted and knotless net, and several varieties of twined textiles. A definitive cordage twist preference has also been identified from the LaFar assemblage. These data can now be applied in regional studies to better define spheres of cultural communication in the Catawba Valley and may contribute to the ongoing cultural preservation work of the Catawba Nation.

May, Jamie [75] see Derry, Emma

Mayer, Aaron [125] see Merchant, McKenzie

Mayes, Arion (San Diego State University), Katherin Diaz (San Diego State University), Arthur Joyce (University of Colorado, Boulder), and Akira Ichikawa

[290] *Biological History of the lower Río Verde Valley, Oaxaca, Mexico: An Investigation into Infectious Disease during the Classic–Postclassic Transition at Río Viejo*

This research investigates population health and infectious disease at the site of Río Viejo during the Classic–Postclassic transition; testing the hypothesis that treponema was endemic in Oaxaca, specifically the lower Río Verde Valley along the Pacific coast, and identifiable in a congenital New World form through dental stigmata, as well as the adult form through focused periostitis. Dental stigmata due to a congenital form of endemic treponemal infection has been documented at early and late Formative period sites in the lower Río Verde Valley (Barber et al. 2013; Mayes et al. 2009; Mayes et al. 2014; Mayes and Joyce 2017). Ongoing debates within bioarchaeology make this identification an important avenue to pursue in the history of the disease in New World populations. Anthropogenic changes to the landscape affect local ecology. These alterations to the environment, including flora, fauna, and vectors, should also be reflected in the rate of infectious disease or lack thereof. It would follow that the frequencies of boney changes indicative of infectious disease would also vary. *****This presentation will include images of human remains.**

Mayes, Arion [290] see Aguayo Ortiz, Elaine

Mayes, Arion [290] see Ayala, Abilene

Mayes, Arion [290] see Clow, Zachery

Mayfield, Tracie [125] see Gilmore, Ariel

Mayhew, Melanie (State Museum of Pennsylvania)

[291] *Learning to See: Rock Art, Cave Art, and Stone Landscapes in Pennsylvania*

Historically, rock art has been only a footnote to Pennsylvania's belowground archaeology. As a result, more enigmatic aspects of the cultural landscape, including cave art and stone landscapes, were either overlooked, not looked for at all, or dismissed because they did not fit into the viewer's limited concept of how rock art "should" look. By adopting the practice of slow looking, a technique that encourages viewers to deeply engage with the subject matter through observation, we can see that Indigenous forms of visual

communication are infused into the landscape with great frequency and variation. These cultural landscapes speak to the exceptional knowledge and abilities held by the Indigenous people who once lived here. This presentation will discuss the approaches used to identify new sites, revisit previously documented sites, and foster an appreciation of the importance of this region as a cultural crossroads.

Mayo, Katherine [179] see Chance, John

Mayo Torné, Julia (Fundación El Caño)

[378] *Archaeometric Study of Pyrite Tesserae Mosaics from El Caño (750–1100 CE), Panama: Evidence of Interactions between the Coclé and Maya Regions*

The study aims to identify the origin of mosaic stone tesserae mirrors discovered in El Caño, Gran Coclé (750–1100 CE). It is part of a broader research effort aimed at understanding the exchange system between the central region of the Isthmus and the northern and southern parts of the American continent. The research objectives include (1) typological classification of the mirrors from El Caño by measuring the degree of similarity using the Jaccard coefficient; (2) characterization of the materials used to make their stone bases, involving analyses such as optical microscopy, thin sections (petrography), Energy Dispersive Spectroscopy (EDS), X-ray diffraction (XRD); and (3) identification of the tools used in their manufacture, through observations of marks using optical microscope and electron microscopy (SEM and Back Scattered Electron Detector [BSE]). The results indicate that (1) the mirrors are typologically similar to Maya mirrors from the Late Classic and Postclassic periods, (2) the rocks used to manufacture the mirror bases are a special type of sandstone not observed in the geological formations in the Isthmus, and (3) the tools used for shaping were limestone abrasives, consistent with the limestone tools used by the Maya for shaping the stone bases of their mirrors.

Mayta Campos, Daniel, José María Alva Núñez (Zona Arqueológica Caral), Miguel Valqui Güimack (Zona Arqueológica Caral), and Tatiana Cindy Abad Lezama (Zona Arqueológica Caral)

[172] *Una aproximación a la relación percepción humana-paisaje-arquitectura en el sitio formativo de Pampa de las Llamas – Moxeke, valle de Casma, Perú*

Durante el Periodo Formativo Temprano (1800-1200 aC) en el valle de Casma, surgió un complejo sistema de asentamientos con arquitectura monumental de diversas escalas y magnitudes, las cuales se ubicaron tanto en el litoral como en el valle. Uno de estos sitios es Pampa de las Llamas – Moxeke, cuyos dos principales edificios monumentales (Moxeke y Huaca A) configuraron el eje del asentamiento, los cuales estuvieron intercomunicados por una serie de plazas rectangulares contiguas; mientras que a los lados del asentamiento se construyeron “edificios de tamaño intermedio” y áreas residenciales. Estas construcciones evidencian una planificación compleja en sintonía con el entorno geográfico y ecológico, siendo factores que condicionaron dicha planificación. En la presente ponencia, nos centraremos en entender como la población que habitó en Pampa de las Llamas – Moxeke percibió el espacio construido y la circulación dentro y fuera del sitio, tomando en cuenta su relación con el paisaje circundante. Esto nos permitirá entender como la arquitectura y el paisaje influyó en la forma de vida de sus habitantes y sus relaciones sociales.

Mazow, Laura (East Carolina University)

[81] *Of Musicians and Weavers: Multivalent Symbols in the Monkey Frieze from Xeste 3, Akrotiri*

A reanalysis of the monkey frieze in Xeste 3 suggests deciphers several enigmatic symbols and suggests room function. In the image's center, two monkeys face off, each wielding an object overhead. The monkey on the right holds a sword. The one on the left holds what has been interpreted as a scabbard. Two additional monkeys are on either side. One cradles a lyre-like instrument, which has influenced interpretation of these monkeys as entertainers, but claims that the scene reflects a ritual duel or ceremonial weapons dance, or a cultural relationship between weapons, music, and rituals, particularly female ones, lack supporting evidence and misinterpret monkey symbols in Egyptian iconography. I propose this is a weaving scene where the dueling monkeys grip a spindle and weaving sword, and a third monkey embraces a frame loom. Frame looms are used to weave stretchy fabrics like caps and hairnets, as depicted by women in a nearby fresco.

Additionally, this is a narrative scene. Weaving scenes of opposing figures wielding weaving tools likely reflect

the myth of the weaving contest between Athena and Arachne. Finally, the visual similarity of looms and lyres was intentionally used to create multivalent images of weaving, music, and dancing.

McAlister, Victoria (Towson University), and Jennifer Immich (University of Colorado, Boulder)

[107] *Multidisciplinary Methodologies in Archaeology: Digital Analysis of Settlement in the Landscapes of Medieval Ireland*

The HELM Project has developed an innovative digital methodology that combines evidence from the archaeological record, the historic written record, and UAV (drone) imagery to identify previously unknown deserted settlements. To date, this women-led multidisciplinary project has successfully analyzed seven settlements dating to the medieval period (ca. 1000–1600 CE) in Ireland. By collecting photogrammetry data via UAV we create high-spatial resolution views of the current Irish landscape with GIS modeling. The level of detail created, combined with the project methodology, has enabled the identification of archaeological legacies of everyday life, including vernacular housing, house plots, and field systems. This is significant, as a familiar problem within Irish archaeology is that historic settlement is often mentioned in documentation, but unidentifiable on the ground—we know there were ordinary people inhabiting the medieval landscape, but we have struggled to precisely locate them. The HELM Project therefore provides a solution to this long-standing conundrum, showing that we previously simply lacked the technological and methodological means to isolate medieval archaeological sites within the modern landscape. This paper highlights the project's multidisciplinary methodology, its case studies, and key results. It concludes with an exploration of how the methodology might be adapted in other archaeological landscapes.

McAllister, Christine (Mesa Verde National Park), Donna Glowacki (University of Notre Dame), Sheldon Baker (Mesa Verde National Park), Cindy Cooperider (Mesa Verde National Park), and Laura Brumbaugh (Washington State University)

[326] *Cultural Change and Continuity on Chapin Mesa Redux*

Nearly 50 years ago, Art Rohn (1977) published “Cultural Change and Continuity on Chapin Mesa.” It was a landmark study focused on using the archaeological record to assess cultural change in relation to continuity of Pueblo communities on Chapin Mesa on the Mesa Verde cuesta. Since that time not only has there been nine major survey projects producing new site data but also the development of new technologies and methods for analyzing settlement patterns including climate reconstructions, demographic modeling, and lidar scanning that were not available to Rohn. Today, there are now over 1,200 known sites on Chapin Mesa. This paper presents the preliminary results of a new effort to reevaluate the Chapin Mesa settlement trends that incorporates systematic seriation and demographic analysis with climatic reconstructions. It shows that Chapin Mesa was one of the most densely populated areas in Central Mesa Verde between 750 and 1100 CE. This highly connected social landscape played a critical role in the subsequent cultural changes on the Mesa Verde cuesta, when central mesa top communities dispersed, and alcove villages emerged in response to climatic and social stresses.

McAtackney, Laura (University College Cork)

[342] *Political Archaeologies that Matter: Randy McGuire and His Contributions to Archaeologies of the Recent Past*

Randy McGuire is an archaeologist who lives and works his politics. Nowhere is this embodiment of the political in the discipline of archaeology more evident than in McGuire's many contributions to our understandings of how archaeology can be conducted to illuminate social injustice in the recent past. This paper will explore two examples of Randy McGuire's archaeologies of the recent past—the Colorado Coal Field War Project and archaeologies of the US-Mexico border—to discuss two specific aspects of his contribution to archaeology more broadly. First, the political nature of his engagement with the material remains of the recent past, which reveals an aptitude in locating material traces of those otherwise marginalized or conveniently forgotten. Second, the breadth of McGuire's vision in articulating how his projects can be used as inspiration to consider wider application of archaeology to understanding key contemporary issues, such as working-class rights and the experience of those crossing increasingly securitized borders.

McAvoy, Scott [381] see Clark, Loren

McBride, Mike (Gault School of Archaeological Research), Jon Lohse, Victoria Pagano, and Sebastien Perrot-Minnot

[236] *Complex Late Paleoindian Period Bifaces from Central America: Recent Findings from August Pine Ridge, Belize*
Recent and ongoing research at August Pine Ridge, Belize, is documenting an astonishing assemblage of complex bifaces representing human occupation and social interactions that took place in Central America from approximately 13,000 to 8,000 years ago. As the Fluted Biface Horizon and the Pan-American production of such fluted bifaces ceased, we see new distinctive regional lithic technologies emerge in the Late Paleoindian and Early Archaic periods (ca. 12,000–8,000 years ago). Rather than ranges of thousands of kilometers of fluted biface technological behaviors, we observe these new and varied applications in ranges of hundreds of kilometers or less. Key research goals of the Pine Ridge Preceramic Project include the documentation and analysis of at least five under-studied or completely novel biface morphologies. With scores of lithic specimens recovered locally from the August Pine Ridge area available for study, we endeavor to advance new diagnostic elements in order to group various “types” and show possible developmental progressions among similar morphologies. We additionally propose evidence of these technological behaviors being shared among the Early Holocene occupants of northern Belize and other areas of northern South America, Central America, and the Caribbean.

McBride, Mike [236] see Lohse, Jon

McBride, Mike [387] see Pagano, Victoria

McCafferty, Geoffrey (University of Calgary)

[48] *Meanings and Meanderings at the Pinche Pirámide: Reflections on 50 Frustrating Years at Cholula's Great Pyramid*

I first “discovered” Cholula’s Great Pyramid as a first-year student at the University of the Americas in the early 1970s when, with pilfered light bulbs from the dorms, we would explore the 8 km of darkened tunnels beyond the official tourist path. Since that time the pinche pirámide has haunted my archaeological dreams, through numerous research trips to Cholula and countless sangrias at the corner table at La Lunita, from which vantage I would ponder the mysteries concealed beneath the vegetation and piled adobe bricks. I returned to Cholula for graduate studies in the early 1980s, ultimately completing both my MA and PhD theses based on research conducted in the UDLA laboratory based on a salvage project conducted in the late 1960s. I continued to visit in subsequent years, often working alongside INAH archaeologists on rescue projects and laboratory analyses. This engagement culminated as I retired from the University of Calgary when I received a multiyear grant designed to resolve questions about the Classic to Postclassic transition in the ceremonial center around the Great Pyramid. This presentation summarizes some of the highlights from my long infatuation with the site and raises questions that still remain to be investigated.

McCafferty, Geoffrey [228] see Whitten, Ashley

McCafferty, Sharisse (University of Kentucky)

[295] *Close Encounters with Alice Beck Kehoe*

Alice Beck Kehoe has been a multidimensional scholar throughout her amazing career in anthropology and archaeology. She has authored and/or edited over 20 books, the newest boldly titled *Truth and Power in American Archaeology*. Her interests are truly diverse, covering Native American nations (Blackfoot, Cree, Osage), Mississippian, and Mesoamerican archaeologies, precolumbian voyaging and contacts, Shamanism, and not least of all engendering archaeology. Alice has been an ice breaker through the frozen tundra of the “Old Boys Network” from the 1950s through to the current day. She has been a strong model for women in anthropology and archaeology, and it is high time that Alice Beck Kehoe be honored for all her struggles and successes in academia. She is an omnipresent participant in conferences where she consistently challenges other scholars to think critically and creatively. In this SAA session we hope to highlight the many facets and influences of her illustrious career.

McCartha, Katharine Grace [216] see Cossin, Zev

McCartin, Madison (University of California, Davis), Erin Mooneyham, and Teresa Steele (University of California, Davis)

[373] *An Introduction to Animal Matters*

As in other disciplines, ethics has become a central topic among zooarchaeologists; however, many of these conversations occur between a small handful of individuals. Here, we aim to bring together diverse zooarchaeologists in a large, communal venue to highlight the ethical considerations we face as a discipline. We hope to discuss important questions such as, When/why do we divide human from animal? What is the value of animal-centric research? How can we work toward decolonizing our work? What does ethical specimen acquisition and sampling look like? How can we make the most responsible use of our reference collections? And what can the ethically minded zooarchaeology instructor bring to the classroom? These topics, and more, establish the ethical considerations of our field and some possible directions for the future.

McCartin, Madison [373] see Mooneyham, Erin

McCarty, Sue

[178] *Little Bluestem: A Zooarchaeological Pathology Analysis of the World's Saddest Draft Horse from the Longdale Mining Complex, Virginia*

In 1994 students from Washington and Lee University excavated a complete horse at the Longdale Mining Complex, an early industrial mining furnace and associated domestic structures in Allegheny County, Virginia, in use from 1871 to 1911. Although we tend to focus on the technologies of automation that slowly replaced some facets of human labor in the early years of the Industrial Revolution, animal labor remained pivotal. This equid dramatically displays the bodily costs of iron smelting labor and possibly later agriculture. Injuries from repetitive movements hauling heavy loads of ore, timber, and supplies up and down hillslopes for the entire life of the animal, as well as congenital defects and possible signs of disease, left profound pathologies that demonstrate what these animals endured. This zooarchaeological presentation attempts to reconstruct the life history of the horse from Longdale Structure 13 Feature 1, which provides a global example of the extreme pathologies this labor can reproduce on the bodies of equids. In other times and places, we often ask what signs account for early indicators of animal traction; here we have an early twentieth-century horse that performed well-documented types of labor and therefore can provide a model for working horses elsewhere.

McCauley, Brea (Simon Fraser University), and Mark Collard (Simon Fraser University)

[82] *Permanent Body Modification: Archaeological and Early Historical Evidence*

Today, permanent body modification (PBM) is very popular. Studies suggest that billions of people have experienced one or more types of PBM. But what is the history of PBM? When did the different types originate? Were they invented recently, or do they have a long history? Did they appear simultaneously or at different times? In this presentation, we shed some light on these questions. We begin by considering whether there is any evidence of PBM in nonhuman animals or our extinct hominin relatives. From there, we discuss the early archaeological and historical evidence of seven of the main types of PBM practiced by modern humans: tattooing, scarification, amputation, piercing, genital modification, dental modification, and bone shaping. We first outline some of the earliest possible evidence of the types, followed by some of the later, yet more secure, evidence for them. There is, we show, strong evidence indicating that humans have been practicing PBM for at least 15,000 years. We also show that there is weaker but still intriguing evidence suggesting that PBM has a much deeper antiquity in human history, perhaps dating as far back as 80,000 years ago. ***This presentation will include images of human remains.

McClain, Brittany (Desert Sage Osteology)

[367] *Preliminary Bioarchaeological Results from the Alamo Church and Long Barrack Restoration Project at the Mission San Antonio de Valero, San Antonio, Texas*

Twelve historic burial features were recovered from within the Alamo Church during the 2019–2020 archaeological investigations at Mission San Antonio de Valero in San Antonio, Texas. The 12 exhumed

historic burials represented a minimum number of 14 individuals, comprising nine adults and five subadults. Interments included both primary and secondary burials. Osteological preservation varied across the site due to environmental conditions, taphonomic effects, and vertical placement of interments presenting methodological challenges. To address these challenges a multifactorial approach was employed to estimate the biological profile, providing new insights into the demography of these historic individuals and illuminating new perspectives on mission life and its inherent hardships. This presentation will explore the preliminary findings related to the recovered burial features, osteological data results, and will discuss the methodological challenges encountered in reconstructing the biological profiles of these mission-era individuals. Representative illustrations of human remains will be present in this presentation to support osteological interpretations. *****This presentation will include images of human remains.**

McClung de Tapia, Emily (Universidad Nacional Autónoma de México), Diana Martínez-Yrizar (Universidad Nacional Autónoma de México), and Carmen Cristina Adriano Morán (Universidad Nacional Autónoma de México)

[289] *Prehispanic Subsistence in the Teotihuacan Valley, Mexico: Insights from the Long-Term Analysis of Plant Remains*

The recovery and analysis of macro- and microbotanical evidence for plant use carried out over several decades represents an occupational sequence of approximately 3,000 years (ca. 1500 BCE–1500 ACE) in the Teotihuacan Valley, Mexico. Well-known domesticates (e.g., maize, beans, squash) are contrasted with a broad array of gathered and, possibly, cultivated plant taxa (e.g., amaranth, chenopods, chia, and purslane, among others). The consistent presence of these taxa throughout the prehispanic occupation of the area argues for a diverse subsistence base, partially but not totally dependent on agricultural production. The sequence begins (Altica, Early-Middle Formative period) and ends (Otumba, Late Postclassic period) with plant remains recovered from excavations codirected by Deb Nichols, while the study of the intervening periods benefited from her enthusiasm and encouragement over four decades of botanical and environmental research in the valley.

McClure, Heather (New Mexico History Museum)

[377] *1938 Excavations at Tajumulco, Guatemala*

It all started modestly enough. A September 1937 drive to New Orleans from Santa Fe and then passage on the United Fruit Company liner *Tivives* with the ultimate destinations of Quirigua and Guatemala City. This small group of 10 with their leader Dr. Edgar L. Hewett traveled as a class sponsored by the School of American Research (SAR). Among the party was graduate student Bertha P. Dutton. Already a field school veteran and a museum professional, Dutton had first worked with Hewett at Chaco Canyon. Hewett and SAR students had only recently begun traveling again to Guatemala after a long hiatus. The 1937 trip yielded a potentially interesting site in Tajumulco, at the foot of a volcano, ignored by previous archaeologists but having already yielded carved stone objects and intriguing mound structures. Dutton returned in 1938 and sent letters from the site, now viewable in the Hewett Digital Archive. Dutton, with two other talented women archaeologists and a local labor force, excavated what became one of the most significant locales for Late Postclassic stone and ceramic works, capturing the transition of a culture under the influence of Mexico and soon to be overwhelmed by Spanish conquest.

McConnell, Ryun (MSU Denver), Michael Kolb (MSU Denver), Paula Leek, April Hill (MSU Denver), and Gene Wheaton (Community College of Denver)

[336] *The Use-Life of a Denver Cistern: A Multiproxy Geochemical and Micromorphological Study*

A multiproxy artifactual, sedimentological, micromorphological, and geochemical investigation of soils collected from a community cistern (Denver, USA) elucidate its use-life regarding westward late nineteenth-century Euro-American settlement and early twentieth-century residential household and industrial activities. This analysis identifies 15 depositional strata within the cistern to clarify site formation and evolution over time. Results reveal distinct phases of use, obsolescence, and reuse that inform us about neighborhood water management practices, the impact of technological advancements, and the evolving needs of communities. The preservation and study of cisterns offer important lessons for the study of urban soil development and household practices.

McCool, Weston (University of Utah), Kenneth Vernon (Center for Collaborative Synthesis in Archaeology), Ishmael Medina (University of Utah), Joan Coltrain (University of Utah), and Brian Codding

[126] *Drought, Population Pressure, and Inequality Drive Intergroup Conflict in the Precontact US Southwest*

To anticipate relationships between future climate change and societal violence, we need theory to establish causal links and case studies to estimate interactions between driving forces. Here, we couple theory from human behavioral ecology with a machine-learning approach to investigate the long-term effects of climate change, population size, and inequality on conflict among subsistence farmers in the precontact Southwest. Through field investigations we generate a new archaeological dataset of settlements in the Bears Ears National Monument spanning 0–1300 CE to evaluate the direct and interactive effects of precipitation, temperature, climate shocks, demography, and inequality on habitation site defensibility, our proxy for intergroup conflict. We find that conflict peaked during dry, warm conditions when population density and inequality were highest. Results support theoretical predictions, and suggest cascading effects, whereby xeric conditions favored population aggregation into an increasingly small, heterogeneous area, which increased resource stress and inequality and promoted intergroup conflict over limited productive patches. This dynamic likely initiated positive feedback loops, whereby conflict exacerbated shortfalls and fostered mistrust, which drove further aggregation and competition. Results reveal complex interactions among socio-climatological conditions that led to conflict, all of which may have contributed to regional depopulation during the thirteenth century CE.

McCool, Weston [126] see Codding, Brian

McCormick, Michael [316] see Moses, Victoria

McCormick Alcorta, David Rafael (Mohegan Tribal Historic Preservation Office)

[284] *Provisioning Production: Obsidian Sources and Industries at Cotzumalhuapa Lithic Workshops*

Obsidian sourcing studies have a long history in Mesoamerica, but few have concentrated on the Pacific Slope of Guatemala. Here, I present the results of sourcing analyses of obsidian artifacts excavated from Late to Terminal Classic (650–950 CE) manufacturing contexts at Cotzumalhuapa and its hinterland in Guatemala. Chemical compositions of archaeological specimens analyzed via portable X-ray fluorescence spectrometry (pXRF) and instrumental neutron activation analysis (INAA) were compared with existing geological datasets to identify the geological source of obsidian artifacts. Because the region lacks suitable raw materials for chipped stone tools, Cotzumalhuapa relied entirely on imported obsidian for cutting edges. Large amounts of manufacturing debris indicate that unfinished obsidian came, minimally, from three sources. The results demonstrate that obsidian tool manufacturers primarily utilized material from two sources modeled as having been distributed by different networks in earlier periods and a third rarely exploited source. Each production unit produced evidence of differential use of each source.

McCormick Alcorta, David Rafael [85] see Smith, Desiree

McCoy, Mark [87] see Lambert, Spencer

McCracken, Zane [361] see Pflieger, Gabriella

McCrane, Samantha [226] see Thomson, Isabella

McCray, Brian (Indiana University East)

[122] *Sorting through Time: R-Driven Categorical Analysis of Ceramic Sherds from Late Prehispanic Amazonas, Peru*

Intensive analyses like *chaîne opératoire* studies are not always feasible during preliminary ceramic assessments within larger archaeological projects. In our excavation of the late prehispanic site Wimba, in the Mendoza region of Amazonas Province, Peru, we collected a wide range of quantitative and categorical measurements from ceramic sherds, storing this data in a relational database for future analysis. This poster presents our innovative approach to sorting these sherds using R, a statistical programming language, to conduct a *chaîne*

opératoire–based analysis. Comprehensive ceramic studies in the Chachapoyas region and its contemporary time period are relatively scarce, with existing classifications primarily based on decoration types. Our method aims to expand this approach by considering multiple attributes of ceramic production. We compare our findings to existing ceramic studies from Chachapoyas and adjacent regions, contributing to a more nuanced understanding of local pottery traditions.

McCreary, Elizabeth (Indiana University of Pennsylvania)

[128] *A Geophysical Survey of a French and Indian War Friendly Fire Incident Site*

Fort Ligonier was the last supply fort constructed for Brigadier-General John Forbes's expedition to take Fort Duquesne during the French and Indian War. On November 12, 1758, a skirmish between a British Virginia regiment and the French Army and their Native American allies occurred near Fort Ligonier. A young Col. George Washington was sent to aid Mercer's men. During the skirmish, the two Virginian regiments inadvertently fired on each other leaving approximately 20 dead. Washington's notes indicate that the men were to be buried the next morning, but it was not documented where. A noninvasive geophysical survey using both ground-penetrating radar and a gradiometer were conducted to find any potential burials or features associated with the incident in addition to any other features on the landscape. Ground truthing was conducted to confirm the presence of some anomalies found in the geophysical survey. The project provided an objective for a Veterans Initiative Program that the veterans especially related to. Results showed that there are features related to the friendly fire incident. The results also provided a comparison of geophysical methods and further evidence that minimally invasive methods can be successful in providing important and new information about archaeological sites.

McCuition, Ashley (Colonial Williamsburg Foundation)

[313] *"By Some Little Compositions of Their Own": The Archaeology of Literacy at the Williamsburg Bray School*

The curriculum of the Williamsburg Bray School is discussed in several correspondences between the school's trustees and sponsors, and inventories of the textbooks provided to the school offer additional insight into what the students were learning. While these resources clearly indicate the purpose of the school was to indoctrinate Black children into the Anglican faith and to teach them reading, spelling, sewing, and "such other things as may be useful to their owners," the subject of writing is never explicitly mentioned. This omission has sparked debate among scholars regarding whether writing was taught at the school, and Colonial Williamsburg archaeologists have been asked to weigh in using archaeological data from the site. This paper explores the complexities of identifying literacy in the archaeological record, discusses evidence of writing at the Williamsburg Bray School, and reviews the results of a comparative analysis of slate writing artifacts from various sites.

McDonald, Holli (University of Montana), Lacy Hazelwood (University of Montana), and Meradeth Snow (University of Montana)

[194] *Children of Casas Grandes: An Osteological Examination of Subadults at Convento and Paquimé*

Bioarchaeological research has played a significant role in understanding the Casas Grandes region of Northwest Mexico. Excavations at the archaeological sites of Convento and Paquimé recovered at least 652 burials dating to AD 700–1450, almost half of which were designated as subadult burials based on original site documents. This provides a robust skeletal population for subadult investigations, including research on population demographics, patterns of violence, and social stratification. While there is extensive literature on these individuals, research focusing solely on subadults has been nearly nonexistent. This study focuses on the construction of biological profiles through osteological analyses to gain further understanding of experienced trauma, disease, and demographic information of the subadult population at Convento and Paquimé. Combined with molecular data, the resulting information is used to address key issues involving Casas Grandes population demographics. The integration of research of subadults with those of adults is necessary for a more comprehensive understanding of past societies and is particularly useful in understanding the prehispanic Casas Grandes perception of childhood, social organization, and violence. *****This presentation will include images of human remains.**

McDonald, Jo**[174]** *Dating Rock Art: Context Is Everything*

The developments of microscopy and in other scientific fields over the last five decades have changed the face of rock art research enabling researchers to make huge leaps and bounds in understanding early human artmaking. Long-term collaborations with Aboriginal communities in Australia have also allowed for continuing research into how and why rock art was made, and even to explore the chronological age of rock art, even where this requires some impact on the art to pursue the question. This paper describes projects underway in the northwest of Australia where we are contextualizing regional rock art sequences by sourcing pigments and dating a range of environmental proxies and archaeological features. Some new results are announced!

McDonald, Jo [174] see Gliganic, Luke

McDonald, Jo [174] see Hellstrom, John

McDonald, Jo [174] see Wu, Ying-Li

McDonough, Katelyn, Madeline Mackie, Emily Milton (Michigan State University), and Daniela Paz Osorio (Universidad de Tarapacá)**[382]** *Transcontinental Perspectives on Pleistocene Plant Foods*

Foodways reflect many aspects of people's lives, cultures, and environments. Despite a rich history of subsistence studies, Pleistocene dietary information from across the Americas has yet to be systematically compiled. This project aims to consolidate that information, focusing first on plant foods in arid regions of western North and South America. Although Pleistocene archaeological research in the Americas has historically underrepresented plant foods, recent advancements are beginning to fill this gap, and our understanding of ancient diets is expanding. We will study these data to explore how plant foods may reflect regional environments, subsistence strategies, and archaeological biases. This project seeks to create a comprehensive database that will enhance our view of foodways, identify productive areas for future inquiry, and highlight the enduring connections between Indigenous peoples and their traditional foods.

McEnroe, Katherine (Colonial Williamsburg Foundation)**[33]** *Presenting the Artifacts: Considerations for Archaeological Exhibitions*

Beginning in 2021, a team of stakeholders worked to develop an exhibition to showcase the breadth and wonder of archaeological materials excavated at Colonial Williamsburg. This exhibition, *Worlds Collide*, is the first installation in the newly established Margaret Moore Hall gallery in the Art Museums of Colonial Williamsburg. Our team worked collaboratively to select, prepare, and mount the materials. Ultimately, we had two goals: ensure the long-term preservation of the artifacts while pursuing a dynamic presentation of material that focused more on creating a broad understanding of life and less on the location or manner of excavation. This paper will focus on how the principles of preventive conservation, particularly light sensitivity, material interactions, and conservation-grade support materials provide guardrails for the safe display of artifacts. It will also highlight the conservation of several artifacts in the exhibition as a way to discuss the contemporary ethics of reconstruction and display. The principles presented can be applied to any archaeological display, regardless of scale or location, and by doing so, can help to minimize the risk to artifacts while maximizing the public benefit of being able to examine archaeological artifacts in contextualized settings.

McFadden, Leslie**[98]** *Dr. Bruce Huckell: Geoarchaeologist, Colleague, and Friend*

My association with Bruce Huckell began in 1994 after he acquired positions as a coordinator in the Maxwell Museum of Anthropology and research assistant professor in the Department of Anthropology at the University of New Mexico. Coincidentally, we had earned our PhDs at the University of Arizona, where we had the opportunity to take classes from CV Haynes and appreciate the significance of Quaternary geologic contributions to archaeological studies. We engaged in research in several projects, in which my principal role was to provide soil geomorphic and soil stratigraphic input into studies at archaeological sites in New Mexico. These studies resulted in the publication of several papers, the last concerning studies of a mammoth

skeleton discovered in a highly unusual geomorphic setting. This study especially well exemplifies the value of interdisciplinary research, including his extensive collaboration with Dr. Vance Holliday. I also co-taught a geoarchaeological course with Bruce. I greatly admired his substantial teaching skills. His ability to effectively integrate principles of soil genesis and stratigraphy and paleoclimate and paleoenvironmental science in his archaeological research was truly remarkable. However, what I most appreciated was the friendship we developed over those several decades, which included a great deal of volleyball.

McGehee, Kelly (University of Central Florida), and John Schultz (University of Kentucky)

[323] *Differentiating Chopping/Hacking Sharp Force Trauma Characteristics on Bone Following Burning of Remains*
Bioarchaeologists and forensic anthropologists are often involved in the analysis and interpretation of perimortem trauma occurring to human remains with the goal of recognizing trauma characteristics that can be utilized in understanding the tool class used to inflict the trauma. Accurate interpretation of skeletal trauma also relies on the correct assessment of taphonomic factors such as the burning of remains as burning can modify perimortem trauma. However, minimal research examines the impact that the burning of bone has on the examination of chopping/hacking sharp force trauma cut mark characteristics for the purpose of tool class differentiation. Additionally, the inconsistency in experimental standardization of these limited chopping/hacking taphonomic studies makes comparing the results difficult. Therefore, the purpose of this research is to assess how burning impacts the recognition of macroscopic and microscopic characteristics left on partially fleshed pig (*Sus scrofa domesticus*) bones by several chopping/hacking tool classes (axe, hatchet, and cleaver). The goal of this experiment is to evaluate how burning affects the recognition of chopping/hacking tool class characteristics on long bones. This research also aims to develop a standardized protocol for evaluation of chopping/hacking characteristics that have undergone burning to provide more appropriate comparisons between the results of experimental studies.

McGrath, James [69] see Shang, Xiaozheng

McGrath, Ryan (Utah State Historic Preservation Office)

[202] *Geographic Patterning in Classic Vernal Style and Uinta Fremont Rock Imagery: An Exploratory GIS Analysis*
This study uses geographic information systems (GIS) to explore the spatial distribution of Classic Vernal Style and Uinta Fremont Rock imagery. The objective is to identify patterns and influences in their placement, considering factors such as proximity to water sources, types of sites, and potential constraining elements. The analysis utilizes spatial data to investigate whether these rock imagery sites are randomly distributed or deliberately placed. This exploration aims to answer critical questions such as whether these sites tend to cluster near specific environmental features like water bodies or landforms and whether some areas or factors have been intentionally avoided. By leveraging GIS tools, the investigation takes an exploratory approach rather than a hypothesis-driven one, endeavoring to reveal underlying spatial relationships and contributing factors that have shaped the distribution of these ancient images. The findings have the potential to significantly enhance our understanding of the cultural and environmental considerations of the Uinta Fremont people, offering more profound insights into their interaction with the landscape.

McGrath, Ryan [126] see Byers, David

McIntosh, Teagan, and Michael Waters (Center for the Study of the First Americans)

[125] *A Spatial Analysis of World War II Artifacts at Camp Hearne, Texas*
This study examines the archaeological findings from a World War II prisoner of war (POW) camp in Hearne, Texas. From 1943 to 1945, the camp held over 4,800 German soldiers and about 500 Japanese soldiers. Archaeological investigations conducted between 1996 and 1997 at the site focused on the southern sections of Compounds 2 and 3, where German non-commissioned officers and Japanese soldiers were held. Over 1,400 artifacts were recovered from excavations and surveys, including materials from uniforms, personal items, identification tags, military insignia, field equipment, POW-made items, and other objects. While these artifacts provide insight into the lives of the German POWs, a spatial analysis of them has yet to be completed. This study aims to elucidate the German POW experience through a spatial analysis of the artifacts found at Camp Hearne and contribute to the archaeology of World War II.

McKechnie, Iain [288] see Hilsden, Jay

McKee, Brian

[335] *El Salvador's Civil War: Sites Related to Combat and to the Peace Process*

The civil war of El Salvador lasted from 1979 to 1992. More than 75,000 people, primarily civilians, perished. Morazán, in northeastern El Salvador, experienced some of the worst fighting and atrocities of the war. This study integrates archaeological, historical, and interview data to elucidate aspects of the war and the subsequent peace process. The author documented two war-related sites in Morazán in 2015 and 2016. One, an encampment and battlefield site, is located on Cerro Pelón, a defensible hilltop that was under the control of FMLN insurgents for much of the war. Civil war-era features there include trenches, foxholes, a stone wall, an air raid shelter (*tatu*), and a bomb crater. The second site is a shipping container used during the disarmament of the FMLN following the January 1992 Chapultepec Peace Agreement. It was monitored by UN observers and representatives of both sides and was used to deposit arms prior to their decommissioning. Interviews of civilians and combatants conducted in 2019 reveal details of the use of both sites.

McKenna, Moriah (University of Pennsylvania)

[128] *Social Soils: Geoarchaeological Analysis of Land Use and Soil Movement in Prehistoric South India*

The cause and extent of ancient erosion intrigues archaeologists and earth scientists alike as soil is a crucial resource for grazing and plant cultivation. Some scholars connect unchecked erosion to societal collapse while others suggest a more complex scenario where a combination of human action and local pedogenic processes remove soil from some locations and contribute to its production in others. In semiarid northern Karnataka, India, erosion is both a modern and prehistoric issue where previous archaeological research indicates prehistorically occupied hills (circa 3000 BC) are more likely to be eroded. More specific connections between land-use types and erosion and the affordances of anthropogenically altered soil patterns are relevant to modern land management. Using geophysical and pedological analysis, this research will compare soil sequences along hillslopes (catenas) to microbotanical sequences at three northern Karnataka sites to examine relationships between erosional episodes and land uses. Catena analysis will include horizon descriptions, benchmark identification, particle size analysis, magnetic susceptibility, and radiocarbon dating to distinguish depositional episodes and characterize their formation. The catena and microbotanical data will be compared to archaeological urbanization sequences and associated changing subsistence (i.e., land use) patterns over time to understand social responses to anthropogenic soil movement.

McKenna, Moriah [350] see Feng, Jennifer

McKenzie, Dustin (Cabrillo College)

[56] *When No Technology Is the Best Technology*

Ichthyofaunal data indicate an increased exploitation of small bodied intertidal fish along the shore of Central California during the Late Holocene period. Fish including pricklebacks (*Xiphister* spp.) were unlikely caught with known types of precolonial fishing technology used by indigenous Californians but were rather captured by hand. Foraging experiments suggest that hand-capturing small intertidal fish is associated with reduced caloric payoffs when compared to larger fish caught with hook and line or small schooling fish procured with nets. In fact, caloric return rates for small intertidal fish is comparable to low-ranked shellfish species such as turban snails and small crabs, which also increase in frequency within the Late Holocene archaeological record. It is argued here that increased reliance on low return-rate methods and taxa is the result of regional trends that included resource intensification and territorial circumscription. In addition, the minimal technological investments and reduced risk associated with hand capturing fish in the intertidal zone presumably appealed to an expanded demographic of foragers including women (specifically mothers), children, the elderly, and others with reduced mobility.

McKeown, Ashley [75] see Derry, Emma

McKillop, Heather (LSU), E. Cory Sills (University of Texas, Tyler), and Rachel Watson (LA State Division of Archaeology)**[283]** *A Thousand Years of the Maritime Maya in Southern Belize*

The sea provided opportunities for the maritime Maya, including a transportation highway, seafood, resources for building construction and tools, and ritual paraphernalia. Maritime settlement in southern Belize endured for at least a millennium, from a Middle Preclassic shell midden at Ich'aktun, to Classic period salt works, and Terminal Classic through Postclassic sea trade. The modern mangrove landscape is virtually devoid of settlement. Ancient settlements submerged by sea-level rise are underwater or buried in mangroves and invisible in the modern landscape. However, the submerged sites include anaerobic deposits with exceptional preservation of organic material, including waterlogged alkaline deposits at Wild Cane Cay and acidic mangrove peat at the Paynes Creek Salt Works. Mangrove peat preserved wooden posts from pole and thatch buildings, the ancient Maya canoe paddle at the K'ak' Naab' site, and a canoe from the Eleanor Betty Site. The acidic sediment did not preserve bone, microfossils, or calcium carbonate temper in pottery. In contrast, the alkaline soil at Wild Cane Cay preserved fish bones, palm fruits, and other plant food remains. This paper provides an overview of the use of the sea by the maritime Maya of southern Belize.

McKillop, Heather [283] see Foster, Cheryl

McKillop, Heather [283] see Meaux, Amanda

McKinney, Taylor [390] see Martin, Montana

McKnight, Justine [101] see Jenkins, Jessica

McLeester, Madeleine [365] see Alperstein, Jonathan

McLellan, Alec [296] see Koch, Timothy

McMahon, Henry, and Olivia Navarro-Farr (College of Wooster)**[323]** *In the King's Wake: An Analysis of Emerging Maya Political Systems during the Terminal Classic Period*

As the prolonged experiment of divine rulership began to lose its effectiveness across the Maya world, the Maya people began reshaping their political systems in an attempt to address the conditions through which they were living. As the shift to the Terminal Classic period began at sites like Waka, new forms of governance began to take shape, and political power was shifted to new parties. This study aims to answer the following questions: (1) Was this an effort at transitioning power from singular authority to a more collective form of governance? (2) If so, what might this transition of power have looked like? This study seeks to answer these questions with the backdrop of new evidence supporting a possible *popol nah*, or council house, uncovered from the center of Waka's regal-ritual landscape, Plaza 4. This may point to the coexistence of two or more political systems or parties during Waka's last phases of occupation. This study analyzes which social groups would have been the most likely actors, responsible for commissioning such changes—either independently or in conjunction with the courtly authority of the period.

McMurry, Sean, and Tyler Molter (SWCA)**[70]** *Ethnicity and the San Pedro, Los Angeles, and Salt Lake Railroad in Nevada*

On January 30, 1905, in an inauspicious, unmarked location in the Nevada desert, a momentous event occurred: the San Pedro, Los Angeles, and Salt Lake Railroad crews completed the "Salt Lake Route" between Salt Lake City, Utah, and Los Angeles, California. The railroad's construction, controversial largely because of competition between two rival companies, occurred on two fronts: one "northern" group built south from Salt Lake and the other "southern" group built north and northeast from Los Angeles. As the "northern" and "southern" parts of what would eventually become the line raced toward each other, they faced labor shortages, which they filled in unique ways. The "northern" railroad workers were predominately Greek, while the "southern" side employed mostly Mexican laborers. Therefore, the meeting of the two lines represented a confluence of ethnic groups. This paper traces historical and archaeological expressions of ethnic identity associated with the San Pedro, Los Angeles, and Salt Lake Railroad in Nevada.

McNeil, Cameron, Edy Barrios, Kenia Chacón (USAC), and Samuel Pinto Carballo (PAPC)**[100]** *Wondrous Was This Wall-Stone, Till Fates Wrecked It: The Citadel of Plan de las Mesas, Copan*

The remains of the citadel of Plan de las Mesas rest above the Copan Valley, 2.5 km northwest of the Acropolis. This site may have been inhabited as far back as the Archaic period when it was likely a refuge, but by the Early Classic period evidence suggests that it functioned as a fortress, or citadel, and that it was likely occupied by Teotihuacan-associated warriors, who may have had connections to Tikal. The construction and occupation of the Teotihuacan-associated sections of the site pre-date the arrival of K'inich Yax K'uk' Mo', the founder of Copan's Classic period Maya dynasty. The strategically placed Group 12 contains houses where warriors could sleep and watch the community below, and the upper Plazas A and B have revealed extensive ritual activity involving the sacrifice of vessels, jade, and a dog. The largest percentage of Pachuca obsidian in the Copan Valley is found at this site, emphasizing its trade links with Teotihuacan, although ceramics connected to the highland Mexican site have yet to be identified. Plan de las Mesas represents an unparalleled opportunity to understand the machinations that lead to the development of Copan's Classic period Maya dynasty.

McNeil, Lynda (University of Colorado, Boulder)**[202]** *Classic Vernal Style Necklaced Anthropomorphs: Continuity and Change, AD 500–1300*

The Northern Uinta Basin Rock Image Recording Project (NURIRP) documents 451 anthropomorphs representing an array of attributes, most importantly necklace types. In this presentation, I identify three sub-styles of CVS anthros wearing necklaces: (1) seven variants of a solid-pecked or abraded "collar" necklace, often with a vertical midline and horizontal belt, in addition to a free-floating symbolic complex comprised of collar, vertical midline (torso), and horizontal line (belt); (2) anthros wearing small beaded necklaces with one or more strands; and (3) single strands of large pendants. CVS anthros wearing necklaces appear in three phases: Early CVS anthros wearing collars (AD 500–750), perhaps sharing ethnicity with BM II–III. Middle period CVS anthros (AD 750–1000) wearing small beaded necklaces. Late CVS anthros (AD 1000–1300) representing a distinct ethnic group identified by single-strand large pendant necklaces. Superpositioning of large pendant necklaces over earlier collars suggests that tension may have existed between two associated ethnically distinct groups. I interpret the symbolic significance of collars and small bead necklaces to represent change in the depiction of an extinct Hopi New Moon clan symbol that still holds significance for the Hopi agricultural calendar and related ceremonies.

McNeill, Patricia (University of California Davis), Xueye Wang (University of California, Santa Cruz), Alex MacKay (University of Wollongong, New South Wales, Australia), Vicky Oelze (University of California, Santa Cruz), and Teresa Steele (University of California, Davis)**[69]** *Human Mobility and Ostrich Habitat Use Revealed by Strontium Isotope Analysis*

Understanding a population's mobility patterns is key to reconstructing how a group gains resources and adapts to changing contexts. Strontium isotope ($^{87}\text{Sr}/^{86}\text{Sr}$) analysis is a powerful tool in archaeology to investigate past movements of humans and animals in relation to bioavailable $^{87}\text{Sr}/^{86}\text{Sr}$ maps (isoscapes). To investigate potential changes in resource catchment during the Later Stone Age, we analyzed $^{87}\text{Sr}/^{86}\text{Sr}$ ratios in ostrich eggshell (OES) fragments from the Varsche River (VR) rockshelter sites in southern Namaqualand (South Africa) and identified their source via a regional Sr isoscape from environmental samples. Preliminary data suggests the OES samples originated from a region 30–35 km from the sites. Indeed, we recently discovered modern eggshell and wild ostriches there, confirming the area as a potential source of past ostrich eggs. Results also provide a way for historical ecologists to reconstruct past animal locations when the extant animals' distributions have been disrupted.

McNulty, Delaney**[186]** *The Right to Destroy Cultural Property and NAGPRA*

This submission explores the right to destroy cultural property, which is a distinctive aspect of Native American cultural sovereignty embedded in the Native American Graves Protection and Repatriation Act (NAGPRA). The right to destroy is an understudied but recognized property right; when property becomes distinguished as culturally or historically significant, deep concerns arise about its destruction. I draw two critical conclusions by analyzing domestic and international perspectives on the destruction of cultural

property. First, the Western-centric ethos of preservation often overlooks the potential for destruction to serve as a powerful, expressive, and cathartic act, offering practical benefits unrealizable through preservation alone. Second, acts of destruction, such as burial, intentional omission from preservation, and ceremonial destruction, represent Native Americans' ultimate assertion of control over their cultural property. The right to destroy property can be further understood as an extreme exercise of the property rights of use, exclusion, and alienation. I urge a reevaluation of preservation-centric approaches. This shift is not just a suggestion but a necessity in favor of acknowledging and respecting Native American agency and their right to destroy. This understanding of the right to destroy is imperative for Native Nations to leverage this right in international repatriation efforts strategically.

McWilliams, Tyler [183] see Buvit, Ian

Meanwell, Jennifer (MIT), and William Gilstrap (MIT)

[66] *Pots Are (Still) Not Rocks: Important Considerations When Teaching and Learning Ceramic Petrography*

It has been said in the past that “a pot is not a rock,” and this statement still rings true. Ceramics are complex, composite materials with incredibly variable combinations of basic production techniques. In recognizing this, archaeology has had a demonstrable shift in ceramic analysis toward a reliance on petrography. Ceramic petrographers have demonstrated time and again that with proper training and application this technique is vital to interpretations of raw materials and source identification as well as more nuanced areas of identity, organization, skill, and transmission. Despite the power of this technique, especially when employed as part of a holistic materials analytical program, educational opportunities for students are rare—especially in the United States. While opportunities abound in mineralogy and petrology, these kinds of courses do not include training in the characterization of microstructural features linked to technological behavior and therefore are not effective in preparing archaeologists to understand the complexities of composite materials. In this poster, we share some of the important lessons learned through teaching formal courses in ceramic petrography and offer suggestions for those who wish to pursue learning this increasingly essential analytical framework.

Meaux, Amanda, Heather McKillop (LSU), E. Cory Sills (University of Texas, Tyler), Rachel Watson (LA State Division of Archaeology), and Hollie Lincoln (Louisiana State University)

[283] *Desalinating Ceramics in the Field from the Underwater Maya Project*

This study reports on the desalination of pottery collected from seafloor mapping and underwater excavation from Site 8 in Paynes Creek National Park, Belize. Because the pottery was saturated with saltwater, leaving it out without desalination results in the formation of salt crystals, which expand and crack the pottery. We selected samples from the thousands of salt-making artifacts and other diagnostic ceramics. The artifacts were soaked in bags and containers filled with fresh water with the timing based on lab studies at LSU. With the two-week desalination, all types of pottery were desalinated, including the fine volcanic ash-tempered Belize red and sand-tempered coarse Punta Ycacos briquetage / salt-making pottery. Each artifact was wrapped with labeled flagging tape while immersed in water to maintain provenience. Most artifacts were soaked in fresh water for two weeks and then placed on trays in the sun to bake and dry out thoroughly. Although we 3D scanned the artifacts, desalinating them makes it possible to further study the actual artifacts in Belize in the future.

Medina, Ishmael (University of Utah), Kenneth Vernon (Center for Collaborative Synthesis in Archaeology), Jerry Spangler (Colorado Plateau Archaeological Alliance), and Brian Coddling

[126] *Reconstructing the Indigenous Maize Farming Niche of Utah*

Maize (*Zea mays* spp. *mays*) was one of the most widespread domesticated plants in the Americas before European colonization. Despite its widespread distribution, explaining how and why ancient maize farming spread into the greater American Southwest and Utah remains a central research question in archaeology. To understand how ancient maize spread, we need a comprehensive suitability model for maize agriculture, using multiple ecological variables, that accurately predicts where maize farming was suitable. Using a novel machine-learning approach, we employ species distribution modeling to produce the first suitability model for reconstructing the Indigenous maize niche of Utah (ca. 3200–500 BP). This research builds on ecological

theory recently applied to archaeological data by utilizing Ideal Distribution Modeling to help explain ancestral farmer settlement patterns observed in the archaeological record throughout the northwestern limit of Indigenous maize farming.

Medina, Ishmael [126] see Coddling, Brian

Medina, Ishmael [126] see McCool, Weston

Medlin, Ashley, Erin Mathison (Texas State University), and Heather Smith (Texas State University)

[300] *Synthesizing 50 Years of Data: A Spatial Analysis of Investigations at the Spring Lake Site, Texas*

The Spring Lake site, located in San Marcos, Texas, is a multicomponent site that contains artifacts dating from the Late Pleistocene to the Historic Era. Fluted points and the remains of Ice Age megafauna were discovered in the lake in the late 1970s. Since then, various institutions have conducted archaeological work around and within the lake utilizing excavation, remote sensing, and geoarchaeological approaches to understand the cultural deposits preserved there. In 2023, new archaeological excavations were conducted as part of a field school taught by the Anthropology Department at Texas State University. Using GIS, we are generating a digital map and database of the spatial distribution of all artifacts, features, and cultural strata documented at the site to date. The goal of this project is to develop a means to understand the spatial relationships among the cultural deposits discovered during decades of investigation at the site. Initial spatial analyses inform on the time periods preserved in the upper strata of the northeast area of the site, how they relate to historic-era materials found in the central and southwest areas of the site, and how the location of activities changed through time around Spring Lake.

Mehta, Jayur (Florida State University), Kendall Holland (Florida State University), Mary Krause (Florida State University), Stuart Nolan (LSU Stephenson Disaster Management Institute), and Owen Stoker (Florida State University)

[101] *The Historical Ecology of Shell, Water, and Land in the Atchafalaya Basin*

From archaeology to ethnohistory to ethnography, studies of Indigenous Gulf Coast communities have revealed remarkable watery landscapes of earth and shell. Throughout the Atchafalaya Basin, a dynamic and rapidly changing floodplain intersected by lakes, bayous, and marshes, and surrounding drainages, hunter-fisher-gatherer communities created monumental villages which provide material records of subsistence, settlement sustainability, adaptation, and mobility. In addition, colonial narratives highlight Indigenous adaptations to environment, especially when juxtaposed against settler colonist attitudes toward “the swamp.” Crumley suggests historical ecology can build “ideas for the durable future of contemporary landscapes,” and in this paper, we integrate multiple strands of inquiry developed from our recent work in the region to offer insights into existing vulnerabilities, strategies for resilience, and sustainable futures.

Meier, Trenton, Edward Herrmann, Simon Brassell, Nicholas Toth, and Kathy Schick

[229] *Reconstructing the Paleoenvironment at Olduvai Gorge, Tanzania, during the Technological Evolution of the Oldowan to Acheulean: A Geochemical and Geoarchaeological Study*

This research focuses on deciphering the paleoenvironments associated with lower Bed II (1.8–1.6 Ma) of Olduvai Gorge, Tanzania in Eastern Africa. This dynamic time period includes multiple tectonic and volcanic events, the Oldowan to Acheulean technological transition, and the arrival of *Homo erectus* on the landscape. While research has been conducted using faunal analysis to infer a regional drying of the landscape, less is known about the local environments during this time period. We use isotopic and biomarker data from both core and outcrop samples to reconstruct the paleoenvironments of lower Bed II. The rationale for the research facilitates comparison of sediment core and local outcrop samples, and their preservation and presence of biomarkers and isotopes. We hypothesize local variations in vegetation and precipitation to give context to archaeological sites, landscape positions, and technological evolution. These findings will extend the detailed record of paleoenvironmental changes of Olduvai Gorge associated with biomarker and isotopic data by 200 kyr and provide further context for the Oldowan to Acheulean transition.

Meierhoff, James (University of Illinois, Chicago), Paula Bryant (Illinois State Archaeology Survey), and Artur Stasiak (Independent Researcher)

[379] *Provisioning World War II German Prisoner of War Camps in Chicago's Suburbs*

As Europe was being destroyed for the second time in 40 years, American cities and their hinterlands during World War II lay unscathed. The war would eventually come to Chicago's northwest suburbs in the spring of 1945 when German prisoners of war (POWs) occupied Camp Pine, a small, repurposed labor camp in the woods in Des Plaines, Illinois. This camp was one of hundreds across the country that together contained over 400,000 German POWs who were brought to America over the course of the war to alleviate pressure on the resources of our allies. The story of these men, and the United States' methods of housing and caring for them, is largely forgotten amid the larger and more dramatic events that occurred 1941–1946. Initially, America was unprepared to deal with the increasing numbers of POWs under its care and utilized a wide range of materials and installations to accommodate the enemy on its home soil. This paper discusses the results from analyzing ceramic artifacts recovered from a sheet midden at Camp Pine, which demonstrates that this problem became more acute as “branch” camps were established to alleviate overcrowding in larger base camps and put POWs closer to labor-short industries.

Meierotto, Kelly [92] see Hardy, Heather

Meinekat, Sarah, Emily Milton (Michigan State University), Susan Mentzer, Christopher Miller, and Kurt Rademaker (Center for the Study of the First Americans)

[53] *Geoarchaeological Contributions to the Study of the Initial Settlement of the Southern Peruvian Andes*

Here, we present geoarchaeological results from the sites of Quebrada Jaguay-280 on the Pacific coast and Cuncaicha rockshelter in the high puna. We applied a multimethodological, micro-contextual approach to inform on site formation processes, evaluate archaeological evidence and dating strategies, and assess site integrity. This site-focused geoarchaeological approach is complemented by regional, landscape-scale understandings of resource availability and use during the initial peopling of the southern Peruvian Andes. At both sites, the combination of macroscopic observations, microscopic (micromorphological) insights, and elemental (μ XRF) and mineralogical (FTIR) analyses allows us to refine our understanding of site formation and human occupation. For both sites, we demonstrate integrity of the deposits, while acknowledging the presence and extent of bioturbation. Both Cuncaicha and QJ-280 exhibit signs of postdepositional processes and pedogenesis—though pedofeatures vary significantly between sites due to their contrasted geographic settings. Anthropogenic features can be analyzed at a resolution that allows us to identify distinct human behaviors, such as combustion practices and dumping. These geoarchaeological investigations highlight how a micro-contextual approach may yield insights into human behavior, occupation intensity, and paleoclimate signatures, contributing a holistic approach to the study of early peopling of the Andes.

Meinekat, Sarah [382] see Milton, Emily

Meinekat, Sarah [382] see Rademaker, Kurt

Meinsen, Jamie (American Heritage Archaeology)

[365] *The Wilemantown Farm Site and the Historic Settlement of the Hudson River Valley*

Between 1995 and 1998, archaeological fieldwork was conducted by Martin Pickands, MA, and the New York State Museum Cultural Resource Survey Program at the request of the town governments of Montgomery and Shawangunk in New York State. Among several sites identified over the course of this fieldwork, the Wilemantown Farm Site (NYSM #10485) provided some of the most conclusive material culture that can be associated with the early European settlement and occupation in New York State. Located along the Tim Brook in Walden, New York, the Wilemantown Farm Site revealed both precontact artifacts as well as historic artifacts and features. The Wilemantown Farm Site is perhaps one of the original European settlements for the area that can be identified through a combination of artifact analysis and documentary research. Using the Wilemantown Farm Site as a case study, the site is placed within a larger context for the European colonization of the region through the identification and study of historic settlement patterns in the Hudson River Valley.

Mejía Ramón, Andrés (Universitat Autònoma de Barcelona)**[289]** *Teotihuacan Was Not a City*

In one of her final SAA presentations, Professor Nichols and colleagues described demographic and chronological issues in current models of the Teotihuacan-period Basin of Mexico. They note that Teotihuacan's population trajectory implies it was a major resource and demographic sink in the basin, questioning the hinterland's capacity to sustain the city's growth and mere existence. While they suggested intergenerational mobility into Teotihuacan as a possible solution to the demographic sink, it would only serve to exacerbate the resource sink reducing cultivated suitable lands around the basin. Given the myriad of "pulsating ceremonial centers" documented around the Ancient Americas, I argue that seasonal migrations to and from Teotihuacan by most of its alleged full-time residents were the norm until its collapse. I evaluate the agronomic, architectural, political, linguistic-epigraphic, and isotopic evidence for permanent settlement at the ancient city, finding that seasonal mobility better-explains Teotihuacan's peculiarities versus a status as a "capital." I close with a comparison to Ibiza and Palma de Mallorca—two party towns in the Balearic Islands, Spain, with a significant pulsating population, monumental architecture, numerous high-class immigrants, high-quality durable housing and infrastructure, and significant political and ritual importance, yet behaving fundamentally unlike what archaeologists expect cities to be.

Mejía Ramón, Andrés [67] see Dudgeon, Kate

Melanson, David [108] see Perry, Elizabeth

Meltzer, David [179] see Andrews, Brian

Menager, Matthieu (CEMCA), Chloé Andrieu (CNRS), and Silvia Salgado (Universidad de Costa Rica)**[378]** *Prestige Materials and Artifacts Exchanged between the Maya Area and the Precolumbian Costa Rica: Presentation of the MayaCosta Project and Its First Results*

Between 500 BC and AD 700, important quantities of iron ore mirrors and jade plaques, associated with the Maya elites and kings, were found in northwestern Costa Rica some 1,000 km away from the Mayan area (BC 500–AD 700). Since 2023, the MayaCosta Project brings together archaeologists, archaeometers, traceologists, and archaeozoologists to review all the available archaeological data on these objects in order to document their contexts and chronological frameworks. This work involves the chemical analyses of the stones and adhesives by a set of complementary spectroscopic, datation, and isotopic techniques. It also involves the characterization of the lapidary traditions by the study of the manufacturing microtraces, as well as the malacological and isotopic analyses of the *Spondylus* shells found in both regions. Finally, all data will be cross-referenced by being placed in geographic and chronological contexts in order to understand the distributions, productions, reuse, and functions of these goods in the two areas. By understanding the nature and modalities of the relations between the two regions, this project will enable us to rethink the old distinctions between what is called Mesoamerica and what is still often considered as an "intermediate area."

Menaker, Alexander**[80]** *More Than a Pile of Iron Scraps: Understanding the Archaeology of Blacksmith Shops*

This paper explores the archaeology of blacksmithing through examining the Tom Cook Blacksmith Shop in Texas with excavations yielding more than 25,000 artifacts. This research is part of the Bolivar Archaeological Project, a collaborative, multidisciplinary project that attends to marginalized histories to offer a model for how publicly funded cultural resource management can incorporate descendant communities and local stakeholders into the fabric of the research design and planning for a state infrastructure project. Located along the Chisholm Trail and belonging to Tom Cook, an African American freedman, the archaeological assemblage of the blacksmith shop offers insight into life and blacksmithing along the Texas frontier. Once ubiquitous, blacksmiths and their associated archaeological assemblages embody the historical processes of craft and industry. Bridging the craft and archaeology of blacksmithing, this study involves collaboration with professional blacksmiths and stakeholder communities. Building on foundational research and the Tom Cook archaeological assemblage, this research addresses how to archaeologically identify blacksmithing, types of

archaeological evidence, layout of a blacksmith shop, and the different methods and approaches. An archaeology of blacksmithing offers multiple scales of resolution, from identifying the individual signature of a blacksmith to the range of materials and spheres of activities of broader regional contexts.

Menchelli, Simonetta [193] see Carmody, Stephen

Mendenhall, Phillip (Carnegie Museum of Natural History)

[241] *Applying Slow Science and the Ethics of Community Engagement: An Eastern Woodland Case Study of Indigenous Incorporation with the Acquisition of Archaeological Knowledge*

This presentation explores the implementation of the “slow science” method, termed to incorporate meaningful Indigenous community involvement into archaeological research. Recent initiatives involving descendant Indigenous communities through land acknowledgment and explanatory descriptions of research topics do little to advance the interests of the communities involved, of which the use of affiliated material culture and the direct involvement of tribal time and resources, the research would not be possible. Slow science methods are meant to remedy one-way beneficial research cooperations by including all affiliated parties during every phase of research. This case study will highlight the incorporation of Cherokee and Haudenosaunee Nation staff and recognized potters into the study of Early and Middle Woodland ceramic analysis, which benefits the research project by valued interpretations and added meaning to ceramic components. Reciprocally, the development of cultural phylogenetics as a method measuring ceramic attributes, which adds to our understanding of how *communities of practice* form, is thus developed in a repeatable format useful to all involved participants. Through the mutual acquisition and use of archaeological knowledge and affiliated community input, the slow science strategy can finally begin to answer the question posed by our Indigenous colleagues, “What can this project do for us?”

Méndez, César [191] see Morello Repetto, Flavia

Menéndez-Blanco, Andrés (University of Oviedo), Laura Gago-Chorén (University of Genoa, Italy), and Riccardo Santeramo

[168] *Dynamic Landscapes on the Margins: Changes in Settlement and Resource Management Practices in the Mountains of Southwestern Europe (Sixteenth to Twentieth Centuries)*

In Europe, numerous rural regions are frequently interpreted as “marginal” or “peripheral” in relation to the significant transformations that occurred during the sixteenth to twenty-first centuries. This idea is largely due to the fact that the material evidence of “modernization” is less visible than in major urban and commercial centers. Nevertheless, a comprehensive examination through the frameworks of Landscape Archaeology and Environmental Archaeology reveals the significant dynamism of these spaces and their intimate linkage with global transformations. This contribution aims to present a reading of a rural area in Asturias (southwestern Europe), a region that is geographically distant from the major Spanish ports and cities of the Modern period. By employing a multiscale and long-term methodology, the profound transformations in settlements and in the management of environmental resources since the sixteenth century can be elucidated. This approach enables the reconstruction of the long processes that give rise to significant challenges in contemporary rural Europe, including depopulation and the erosion of collective rights over resources.

Menéndez Iglesias, Beatriz, Guillermo Acosta-Ochoa (Universidad Nacional Autónoma de México), and Patricia Pérez-Martínez (Laboratorio de Tecnología de Cazadores Recolectores, ENAH-INAH)

[291] *Archaeometric Analysis of Pigments, Cueva Higuierillas Rock Art Site (Sonora, Mexico)*

Cucurpe is in northwestern Sonora (Mexico), in the lower foothills of the Sierra Madre Occidental. The region is characterized by rock art in small caves and rockshelters of volcanic tuff with a higher concentration of paintings than engravings. During the recording of one of these rock art sites, Cueva Higuierillas, small fragments of what appeared to contain traces of pigment were located on the surface of the rockshelter floor. In this paper we present new analyses of the samples, and the results obtained, both from XRF observations and from metallographic and scanning electron microscope observations of the samples, as well as from the cross-

sections that were carried out. These analyses were complemented by analyses of the pigment particles. This has allowed us to have an approach to the general composition of the samples, as well as to observe their microstratigraphy, which provides us with information about their possible origin and formation.

Menéndez Pereda, Alba (University of California, Los Angeles)

[374] *Metals at the Sacred Heart of the Inca Empire*

As a product of the earth and the exuviae of the sun, the Inca held gold in high regard as a material used in the creation of sacred spaces, individuals, and performances. However, Inca state metalworkers rarely used gold on its own. Instead, they often combined it with alloys to achieve specific colors and sounds. The resulting objects were the materialization of the knowledge and technical skill of these specialists combined with Inca ontologies of metal and the larger world. Thus, Inca metalworks did not only serve as adornments or utilitarian items but acted as potent vessels of symbolic meaning, political goals, and social identification. To better understand how the Inca conceived of metals, in this presentation, I will focus on the metal assemblage of the Coricancha, the sacred heart of the empire. I approach this corpus through a documentary, archaeological, and architectural lens to bring together those objects recovered through excavation as well as those that have not survived. Ultimately, my goal is to explore the life history of these metal entities from their extraction as raw minerals to their transformation by specialist makers, their Inca users and uses, and their afterlife as colonial loot, scientific evidence, and artworks.

Meng, Fanxiu (ENMU)

[191] *Lithic Patterns from the North Bank of the Blackwater Draw Site*

Blackwater Draw Locality No.1, the Clovis type site located in eastern New Mexico, is one of the most important Paleoindian kill and campsites in North America. Several episodes of archaeological investigations have occurred at the site, but analyses of cultural materials and dissemination of results remain in varied stages of completion. For example, the systematic analysis of lithic artifacts recovered from excavations at the site's "north bank" are still lacking. The goal of this project is to explore Paleoindian behavior by examining patterns in lithic tools and debitage through macroanalysis. My methodology consist of metric and non-metric attribute analysis of debitage and flaked stone tools to examine patterns potentially evident of Paleoindians' technological organization. This study and its results will increase our knowledge of the lithic activities at the North Bank of the Blackwater Draw site.

Menkina, Ekaterina (University of Alabama), and Thuy Vo (Institute of History, Vietnam Academy of Social Sciences)

[61] *3D Visualization of the Ancient Capital of Hoa Lu Enclosures in Northern Vietnam*

Hoa Lu was the capital of Vietnam in the tenth century and is now the core area of the Trang An UNESCO world heritage site. In collaboration with Dr. Thuy, we focus on the visualization of Hoa Lu enclosures. Oral traditions, illustrations, and archaeological evidence of the ring-based walls provide an insight into the architectural practices of the ancient capital, resembling the defensible architecture of the Forbidden City and other Vietnamese royal centers. We seek to explore two primary wall systems of Hoa Lu using 3D modeling software and lidar data. Integral part of the research explores the utility of an advanced architect software LUMION to create and observe Hoa Lu in 3D. This research aims to bridge the gap between historical research and modern technologies, as we attempt to utilize historically accurate colors and textures on the enclosures. Local managers are implementing a comprehensive heritage management plan in Hoa Lu. The first-ever modeling of the ancient capital relics based on the latest research results will help managers easily plan for heritage conservation. These models will also help tourists visualize and access more easily a large-scale heritage site that is more than 1,000 years old.

Menkina, Ekaterina [291] see Amezcua, Vera

Menn, Sascha, and Justin Lowry (SUNY Plattsburgh)

[74] *Determining Minimum Number of Individuals by Weight: A Case Study from Clinton County, New York*

For any faunal osteologist MNI is key to help identify the context of burials, mass graves, archaeological sites, food processing, etc. There is great difficulty in identifying the MNI with unidentifiable bone fragments. Here

we present a study of prehistoric *Odocoileus virginianus* (white-tailed deer) bones from SUNY Plattsburgh archaeological field school as compared to the modern deer bones in the Hunter comparative faunal collection at SUNY Plattsburgh. By estimating the average degradation of bones over time and comparing them to our modern collections we are able to create a ballpark estimate for our calculation-based approach to MNI. This process is in the early stages of development and can only account for one prehistoric collection and diagenetic context. Here we will present this method and findings to illustrate how understanding one degradation average may be a useful tool to use in combination with MNI as an alternative measure, especially when bone identification is impossible due to fragmentation.

Mentesana, Roberta [89] see Pujals Blanch, Sonia

Mentzer, Susan [53] see Meinekat, Sarah

Merchant, McKenzie, Aaron Mayer (Augustana University), Emma Byrne (University of South Dakota), Angel Vazquez (University of South Dakota), and Ben Livermont (University of South Dakota)

[125] *2024 Archaeological Excavations of Laundress Housing at Old Fort Meade, Sturgis, SD*

The University of South Dakota (USD) archaeological field school in summer 2024 took place at the Soapsuds Row area of Fort Meade at the Bear Butte Creek Historic Preserve in Sturgis, South Dakota. The term “Soapsuds Row” refers to the housing originally used by laundresses employed by Fort Meade in the late AD 1800s. The 2024 archaeological work focused on surveying and excavating surface depressions that may represent historic features. Building on previous 1 × 1 m unit excavations, nine 1 × 1 m units were opened in 2024 to investigate a log house and possible privy. The diagnostic artifacts recovered date primarily to the 1870s–1910s and include domestic household items, food debris, children’s toys, and military clothing. This work advances the broad goal of learning more about the history of Fort Meade and the longer human use of the valley of Bear Butte Creek. Additionally, the project is in support of development of a natural and historical park on land formerly included in the Fort Meade Military Reservation, as well as providing an education experience for South Dakota archaeology students and volunteers.

Meredith, Tricia [99] see Napora, Katharine

Merewether, Jamie [111] see Arakawa, Fumi

Merewether, Jamie [86] see Satterwhite, R. David

Merino Andrade, Gabriel [393] see Lozada, Josuhé

Merriman, Christopher (Adams State University), and Vance Holliday (University of Arizona)

[57] *Terminal Pleistocene-Early Holocene Paleoenvironmental Conditions in the Northern Jornada del Muerto, South-Central New Mexico*

The northern Jornada del Muerto in south-central New Mexico is home to the Mockingbird Gap Clovis site and over 65 other Paleoamerican loci. Most of this record is concentrated along Chupadera Draw, the highest order drainage in the Jornada, and in proximity to a series of playas primarily near the margins of the basin. Understanding the environmental context of the Paleoamerican occupation in the Jornada, and the Southwest in general, had been a long-term goal of Bruce’s and several of his colleagues and students. This paper contributes to this objective by presenting new paleoenvironmental data from two playas and compares them to previous work in Chupadera Draw. Although not entirely congruent, the paleoenvironmental records from the playas and Chupadera Draw suggest increased biological productivity during the Younger Dryas Chronozone, coeval with late Clovis, Folsom, and possibly the early part of the Plainview occupation, while the Late Paleoamerican Cody Complex occurred during increased aridity and diminishing biological productivity.

Merriman, Christopher [57] see Hamilton, Marcus

Merriman, Christopher [57] see Kilby, David

Merritt, Chris (Utah State Historic Preservation Office)**[340]** *Terrace, Utah: Population 0*

In 2020 and 2021, staff with the Utah State Historic Preservation Office and Bureau of Land Management conducted excavations in the ghost town of Terrace, located in northwestern Utah. Key to this project was a deep collaborative effort between the archaeologists and the Chinese descendant community, organized through the Chinese Railroad Workers Descendants Association. By the end of the second field session we had fully excavated one Chinese home from the 1870s to 1890s, and the excavation yielded significant amounts of information on various topics that bring to better focus the Chinese experience in Utah and on the railroad.

Merritt, Chris [87] see Wismer, Meredith

Mertz, Victor [332] see Dupuy, Paula

Mesia-Montenegro, Christian (Universidad Privada del Norte), Angel Sanchez-Borjas (Pontificia Universidad Católica del Perú), and Jose Narvaez**[195]** *Geoglyphs in the Andean Central Coast: Combining Digital and Traditional Survey Techniques*

In our research, we have identified over 113 geoglyphs in the middle Chillón Valley, located on the Andean Central Coast, with chronological spans ranging from the Formative period (1800–100 BC) to the Inka period (AD 1470–1532). This project utilized advanced digital technologies, including Remotely Piloted Airborne Systems (RPAS), to systematically locate and document these geoglyphs. In addition to the geoglyphs, we have uncovered associated ceramic assemblages and complex road systems, which further support the hypothesis that these sites represent carefully constructed and highly ritualized landscapes. The intricate integration of these features suggests that the geoglyphs were not isolated phenomena but part of broader cultural practices, possibly linked to ceremonial activities, pilgrimage routes, or territorial markers within the region. This interdisciplinary approach combining aerial technology with archaeological survey has provided new insights into the cultural and spatial organization of ancient societies on the Central Coast. Further analysis of the ceramics and road networks will contribute to understanding the sociopolitical and religious functions of these geoglyphs within their respective periods.

Mesia-Montenegro, Christian [334] see Sanchez-Borjas, Angel

Mesterházy, Gábor [31] see Gyucha, Attila

Metz, Rebekah [324] see Mixter, David

Meyer, Brett (Museum of Anthropological Archaeology, University of Michigan), Claire Ebert (University of Pittsburgh), Julie Hoggarth (Baylor University), John Walden, and Jaime Awe (Northern Arizona University)**[325]** *Modeling Resilience: Zooarchaeological Insights into Subsistence Diversity and Land-Use Practices of the Ancient Maya in the Upper Belize River Valley*

Many models have been proposed to explain the disintegration of Classic Maya polities including those based on climate change, inter-site competition, warfare, and environmental degradation. It is now clear, however, that multiple simultaneous factors were involved, and the combination of factors varied from one region to another during the Late to Terminal Classic periods (AD 750–900/1000). As such, each region must be examined individually to understand the processes that contributed to depopulation to explain why some regions were more resilient than others. In the upper Belize River Valley, a series of droughts during the Terminal Classic has been attributed as one factor underlying the abandonment of centers. Using Hill diversity metrics (richness, Shannon diversity, and Simpson diversity) as measurements of diet diversity, our study analyzes Preclassic (1100/1000 BC–AD 300) and Late/Terminal Classic fauna from the sites of Baking Pot, Cahal Pech, Lower Dover, and Xunantunich to test models of environmental degradation and the adaptive cycle. The results show that the ancient Maya responded to climate stresses through environmental resource management. Any rigidity in dietary preferences was mitigated by utilizing a broad spectrum of animal and plant resources.

Meyer, Kelton (Colorado State University)**[179]** *Time Perspectives and Folsom Residential Stability at the Reddin Site, San Luis Valley, Colorado*

For the past 20 years, Folsom archaeology has been principally concerned with documenting variation in mobility choices—and the largest sites have served a central role in this pursuit. We routinely ask questions about the interplay between residential and logistical movements, whether aggregations between microbands occurred, or if complex site deposits represent the cyclical use of a location over time. Folsom lithic scatters have played a minor role in this research given the analytical challenges of precise chronological dating and questionable spatial integrity of nonstratified artifacts. This paper takes a different perspective and explores the utility of surface scatters for modeling variation in Folsom mobility patterns. The Reddin site is a large (80+ acres) artifact scatter in the San Luis Valley of southern Colorado with more than 700 Folsom lithics distributed along the edge of a relic interfluvial wetland. Spatial statistical modeling of Folsom weapon production at the site, coupled with analysis of conjoining artifact pairs (averaging 140 m distant), raw materials, and burned lithics, suggests a dynamic scenario of Folsom campsite reconfiguration over time. Folsom nomads visited Reddin for logistical purposes on a semi-routine basis but also shifted campsites toward a long-term residential center over multiple occupations.

Meyer, Kelton [280] see LaBelle, Jason

Meyer, Matthew (University of Kentucky)**[344]** *Drucker Revisited: Assessing the Postclassic Ceramic Assemblage at San Marcos, Veracruz, Mexico*

Despite advances in the last two decades, the Postclassic period remains an elusive and understudied period in the Tuxtlas region of southern Veracruz. In 1940, archaeologist Philip Drucker conducted a field survey at San Marcos, a small mound center at the foot of the extinct Cerro el Vigía volcano in the Western Tuxtlas of southern Veracruz, Mexico. Part of this work was conducted to assist in the analysis of ceramics found at Tres Zapotes, where Drucker identified a small intrusive component, called the Soncautla Complex, that he tentatively assigned to the thirteenth century AD. More recent studies at San Marcos and nearby Totogal, a regional center that was part of the Aztec frontier during the Late Postclassic period, have identified more artifact types associated with the Postclassic period that Drucker did not identify. In this presentation, I reexamine Drucker's datasets using the same typological assignments used in more recent studies to allow further comparability between old and new data. In doing so, I aim to reassess the Postclassic period through the lens of San Marcos as a long-standing center on the western edge of the Tuxtlas.

Meyer, Nicholas [125] see Ranney, William

Meyer-Lorey, Robin (University of California, Los Angeles)**[390]** *Memories of Tulare Lake: Archaeological Survey of California's Irrigation Empire*

Tulare Lake was once the largest freshwater lake west of the Mississippi; the 700-square-mile inland sea was the most populous region in California prior to contact with Europeans. Now, the Tulare Lake basin contains some of the most intensely modified land in the world, served by the largest irrigation system in the world as part of the most productive agricultural region in the world. Periodically over the last 100 years, drought has strained irrigation systems and flood has revealed a revenant lake. A theoretical approach grounded in contemporary, historical, industrial, and landscape archaeologies will allow this project to engage with discussions about the role of irrigation in society and the nature of American empire. To address the cultural and environmental impacts of the American frontier concept and the global entanglements it produces, this project will prioritize Indigenous histories for historical background, process archival photographs with GIS, use hydrological and ecological modeling, and place the present landscape in conversation with archaeological evidence by using survey, satellite, and drone imaging. These approaches are aimed at understanding how American empire bridged lives and landscapes of the past through settlement, displacement, landscape modification, and irrigation, to contemporary conditions in California.

Meyers, Stephanie**[239]** *Maya Forest Management Practices at the Ancient City of Calakmul as Revealed by Analysis of Environmental DNA, Ambient Pollen, and Macrobotanical Remains*

Strategic forest management was imperative for the survival of inhabitants of the ancient Maya city of Calakmul. How were the inhabitants of this great polity able to support a sizable population for over 1,600 years in a challenging environment? Environmental DNA (eDNA), pollen, and macrobotanical remains from various archaeological contexts were analyzed to identify useful species that were maintained in the Maya agroforestry system. Changes in species composition through time based on eDNA and pollen data were used to estimate forest clearance and wood biomass production capability during the ancient Maya occupation. EDNA collections from residential and ceremonial archaeological contexts supplement our understanding of forest resource utilization and cultural value of agroforestry products. The successes of ancient Maya agroforestry practices may provide valuable insights for conservation advocates in the modern neotropics.

Mezzell, Madelyn, and Holley Marie Soro

[241] *Interpreting Exotic Animals in Etruria: Why Species Recognition Matters*

This presentation explores the roles of animals and fantastical beasts in Etruscan iconography from the Archaic to the Late Orientalizing period and the manner in which their misinterpretation, or complete lack thereof, affects our understanding of communities who inhabited very different ecosystems than today. Like many cultures without an extensive written record, the interpretation of iconographic depiction and symbolism is critical to our knowledge of Etruscan beliefs, customs, social institutions, and environmental values. Using case studies from the Villa Giulia and the National Archaeological Museum in Florence, we will examine the origins of these depictions. These animals may have been crafted in a local setting, arrived in Etruria by foreign trade, or crafted locally but of an animal that did not live nearby, either from firsthand memory or from storytelling or oral histories of magical, powerful creatures, real or mythological. The media in/on which they are rendered and use context can inform our understanding of patterns of iconographic importation, and this potentially allows us to interpret their symbolic functions, either as local beings directly linked to local lifeways or as symbolic ideas within Etruscan culture.

Michael, Amy [226] see Thomson, Isabella

Michelaki, Kostalena [346] see Ruth, Alissa

Micheletti, George (University of Central Florida), and Terry Powis (Kennesaw State University)

[296] *Exploring the Sociocontextual and Sociocultural Significance of Preclassic Round Structures of the Maya Lowlands*

Ancient Maya Preclassic round structures without a superstructure are generally believed to have functioned as performance stages, denoting their role as social settings. However, the meager sample size of identified round structures and the limited exposure of their surroundings have led to sociocontextual and sociocultural incongruencies, particularly concerning the scale of participation and scope of social significance. Our investigations of five round structures at Pacbitun, Belize, and a reexamination of other lowland round structures suggest that while this archetype and its rituals were incorporated into residential contexts for supra-household scale ritual, the monumentality and isolated contexts of many early round structures support an initial public function. Architectural, spatial, and material attributes of many Preclassic round structures suggest they may represent the earliest monumental archetype in the Maya lowlands—their special-purpose function and construction metrics supporting community-wide ritual engagement. Contextual evidence also suggests that many Preclassic round structures were initially peripheral to contemporary domestic space, isolated on prominent natural features, formally establishing public domain. While some locations do become domestic settings, their round structures were typically abandoned simultaneously or shortly thereafter. The semi-public nature of these converted domestic settings implies a continued social significance, now more localized and ascribed to the inhabitants.

Mihailovic, Dušan (University of Belgrade)

[175] *New Insight into the Middle and Upper Paleolithic Settlement of the Central Balkans*

Over the last 15 years, the Faculty of Philosophy in Belgrade, in cooperation with the University of Arizona in Tucson, has conducted systematic survey and excavations of Paleolithic sites in eastern Serbia. This

geographic region includes all the main corridors that connected Southwest Asia and Central Europe in the Pleistocene. A hotspot of diversity, the Balkans could have represented a glacial refugium for flora, fauna, and human communities throughout the Pleistocene glaciations. A very early appearance of Quina and Levallois technology was recorded at sites dated to MIS 9-6, while the sites dated in MIS 5-3 demonstrate that quartz industries of Quina type occur not only in Central Europe but also in the area south of the Sava and Danube. Proto-Aurignacian sites dated to the period before the Campanian Ignimbrite eruption were confirmed downstream of the Iron Gates, which supports the hypothesis of the role of the Danube corridor at the transition from the Middle to the Upper Paleolithic. An unexpectedly large concentration of Gravettian and Epigravettian sites was recorded in the area, indicating that the central Balkans were populated both before and at the beginning of the Last Glacial Maximum.

Milanich, Jerald (Florida Museum of Natural History)

[111] *Timothy A. Kohler: The Early Academic Years*

In 1968, Timothy Kohler was one of 672 students graduating from the Davenport (Iowa) Central High School. He then headed east and south to Sarasota, Florida, where he enrolled in New College, a progressive liberal arts institution whose total student body numbered fewer than 500. While an undergraduate he traveled to France and stayed at Hotel Cro-Magnon in the Dordogne amid numerous Upper Paleolithic archaeological sites. The rest, as they say, is history, or, in this case, archaeology. After graduating New College in 1972, it was a short trip north on Interstate 75 to the University of Florida's Anthropology Department. As Tim walked in the front door as a new graduate student, I came in the back as a new faculty member. Tim's largely self-directed dissertation research in Florida set the stage for theoretical and methodological approaches he refined, improved, and incorporated in projects throughout his career.

Milbrath, Susan (Florida Museum of Natural History, University of Florida)

[97] *Aztec Royalty in the Imperial Court of Carlos V*

A painting in the Ambras Castle (Innsbruck), dating between 1538 and 1556, includes a previously unrecognized portrait of Moctezuma's son, don Pedro. This identification is based on comparisons with the Codex Cozcatzin (1v), which represents the place glyph of Tenochtitlan and the emperor Moctezuma with his daughter, doña Isabel, and don Pedro, here wearing a *tilmatli* with black and red horizontal stripes on a white ground with a border design known as *tenixyo* ("having eyes on the edge") characteristic of cloaks worn by royalty and royal deities. The Ambras painting may provide evidence that don Pedro was in the court of Charles V as late as 1541, and it shows that don Pedro with a companion who wears only a loin cloth. The Aztec men represent miniature portraits of sorts, for they are authentically costumed. They appear in the court of Charles V, thinly disguised as the court of Xerxes, to show the breadth of his empire, in the tradition of the Holy Roman Emperor, Maximilian I.

Milburn, Zoe (University of West Florida)

[186] *NAGPRA Survey Results on "Investigating Barriers to NAGPRA Compliance" from the 2024 SAA Meeting*

At the 2024 meeting, data relating to NAGPRA compliance were collected from the membership during a poster presentation, an IRB approved digital survey, and ethnographic interviews. The survey sought to quantify and clarify barriers faced during the NAGPRA process. This presentation will present the results from more than 100 survey responses and three ethnographic interviews conducted at the SAAs and NAGPRA interested organizations. A diversity of perspectives was apparent among respondents from museum, academic, and tribal groups. Commonly identified hurdles include insufficient funding, inadequate staffing, a lack of institutional will, a dearth of training opportunities, and confusion around implementing the 2023 Final Rule. While various hurdles exist, and institutions face unique challenges, a better understanding of these barriers can help us move toward a more expedient and effective NAGPRA process.

Milek, Karen [107] see Catlin, Kathryn

Millán-Pascual, Rafael

[168] *Unraveling the American Hegemony: A Historical Archaeology of the Temporalities of Rural Modernization under the Francoist Dictatorship (1950–1970)*

In 1953 Franco signed an economic-military agreement with the US administration that accelerated the international recognition of the dictatorship. Contrary to the political premises of the World War II allies, the Cold War opened (again) the recognition of totalitarian regimes as long as they were firmly capitalist. That resulted in the subaltern insertion of Spain into the American hegemony through expansive economic measures without any democratic orientation. This pact paved the way of “*desarrollismo*”—the Spanish technocratic version of capitalist modernization—that finally provided the dictatorship with its “apparent” legitimacy. That shows the dangerous translations of modern capitalism on both sides of the Atlantic. The experiences of the New Deal ended up in Spain as one antidemocratic Americanization—nowadays, defended by far-right American and European movements. This paper examines rural modernization in the light of the politics of time of this historical background. The Francoist political economy implied the forced displacement of six million people from rural to urban areas and so the abandonment of their villages and cultural landscapes. Rural areas became “underdeveloped” but also “anachronic”—with any political value. Based on different case studies, we will challenge this “imposed” perception recovering alternative temporalities and memories from the land.

Miller, Bethany [380] see Richards, Katie

Miller, Christopher [53] see Meinekat, Sarah

Miller, D. Shane (Mississippi State University), Ashley Smallwood (University of Louisville), Thomas Jennings (University of Louisville), and Jesse Tune (University of Mississippi)

[175] *All Kinds of Interesting Possibilities: Tracking the Division of Labor from the Late Pleistocene to Middle Holocene in the American Southeast*

Kuhn and Stiner (2006) argued that an overlooked but salient difference between Neanderthals and modern humans was their approaches to dividing labor. Kuhn and Stiner contend that modern humans were “diverse specialists” that may have aided in their ability to adapt to novel and changing environments and outcompete generalists. Here, we adopt a similar approach to examine how people responded to changes in resource structure from the Late Pleistocene to Early Holocene in the American Southeast. We argue that warming temperatures and the expansion of oak/hickory forests created the context for gendered task specialization which prefaced the emergence of the Eastern Agricultural Complex.

Miller, D. Shane [101] see Strawn, James

Miller, D. Shane [96] see Tune, Jesse

Miller, D. Shane [88] see Weaver, Jesse

Miller, D. Shane [343] see Zuckerman, Molly

Miller, Elena, Victor Prieto, and David Hansen (University of Colorado, Boulder)

[238] *Mapping Mortality in Late Nineteenth-Century Madison County, NY*

Where an individual lives affects the shape and path of that person’s life including their death. Looking at rural towns in Madison County, New York, in the late 1800s, we focus on the spatial components related to the causes of death to further understand health and mortality at this time. We do this by connecting mortality records from the 1850–1880 censuses and information from obituaries and other newspaper articles on the deceased to historic maps from the same time within a GIS and then examining the spatial relationships between households and other landscape features. Much of the discussion about nineteenth-century mortality and communicable diseases in the United States has focused on early cities as opposed to rural communities. Supplementing the existing work on urban mortality with that from rural locals can allow for a fuller understanding of the second epidemiological transition that accompanied the Industrial Revolution. This not only brings in an understanding of the spread of illnesses but also a social understanding, allowing us to see who was connected to whom, and what parts of people’s lives were shared.

Miller, Eli [381] see Ratcliffe, Jessica

Miller, G. Logan**[37]** *Middle Woodland Bifaces with Glossy Polish: Adzes, Hoes, or Other?*

Chipped stone bifaces with macroscopically visible glossy polish have been reported from Middle Woodland period sites across the Eastern Woodlands for decades. These are typically referred to as adzes or hoes but have also been classified as celts, gouges, and chisels. Yet few formal studies have been applied to examine the nature of this gloss and the concomitant function of these tools. As an initial step in addressing this deficiency, this paper presents morphological and functional data from three dozen bifaces, and a handful of polished flakes, from the Crane site, a Middle Woodland settlement along the lower Illinois River tributary of Macoupin Creek. Results illustrate the diversity of form and function present in this sample, providing preliminary data to help further understand this enigmatic class of chipped stone tools and the broader activities they represent.

Miller, Jennifer [69] see Wilkin, Shevan

Miller, Maya**[119]** *Power and Gender in Weaving*

Spinning and weaving is an activity that has occurred throughout Mesoamerica in the production of textiles. Throughout the Formative, Classic, and Postclassic periods and into the modern day, textile production has played a large part in the power structure divisions of society and gender roles in Mesoamerica. Remnants of textile production can be seen in the archaeological record in the form of weaving tools, such as spindle whorls. Through the examination of the archaeological record, the symbolism and meaning of the act of weaving can be pieced together for each time period in Mesoamerican history. Over the course of time in Mesoamerica, the meaning of weaving and textile production changed. At its initial stages, archaeologists hypothesize that it was an activity conducted by the elites in society. This trend continues into the Classic period. The act of weaving, however, changes in the Postclassic period when the primary producers of fabrics are women regardless of social status. By this time in Mesoamerica, weaving is no longer a symbol of class, but a symbol of gender.

Miller, Mel [340] see Hawkins, Rebecca

Miller, Myles [380] see Walker, William

Miller, Sarah (Florida Public Archaeology Network), and Glenda Simmons Jenkins (Gullah Geechee Cultural Community Trust)**[99]** *Serving Gullah/Geechee Communities in Northeast Florida: A Case Study in Environmental Justice and African American Heritage at Risk*

The Gullah/Geechee people in Nassau County, Florida, have an uphill battle when it comes to cultural continuity and preservation of their historic black landscapes. Heirs' properties and taxation are complicated issues that threaten coastal African American communities throughout the Southeast. The federal government, private corporations, and individual speculators absconded with and dispossessed Gullah/Geechee people of millions of acres; they were squeezed out many of the community strongholds in Florida, as was done at Mt. Pleasant, Hilton Head, Sapelo, and countless other sea islands. To add to this, impacts of climate change disproportionately threaten low lying areas where the Gullah/Geechee people have been twice and in some instances thrice relocated. This paper will share the preliminary results of five years of the collaborative partnership between the Gullah/Geechee Nation and the Florida Public Archaeology Network. Further research into Black Geography and Gullah/Geechee studies help frame the urgency to document historic black landscapes in northeast Florida before they are lost to climate change. With such studies we hope to create pathways to cultural conservation in the future.

Miller, Sophie (University of Oregon)**[54]** *Clawing at Uncertainty: Challenges to Understanding Cat Domestication*

It is inarguable that domestic cats (*Felis catus*) are incredibly prolific and popular parts of modern human lives. This is unsurprising given how incredibly well-adapted to anthropogenic environments cats are, thriving and

breeding with often minimal-to-no interference necessary by humans. However, despite preoccupation with these charismatic creatures, cat domestication remains poorly understood and largely under-theorized. There is much uncertainty and inconsistency in how we define cat domestication, as process, and domestic cats, as individuals and agents. Traditionally, the domestication of cats is surmised through generalized frameworks that often rely on assumptions about interactions between ancient peoples and animal commensals and/or synanthropes. Furthermore, establishing the applicability of such frameworks to cats often remains speculative. In this talk, I overview some of the complexities and shortfalls in our present understanding of cat domestication, arguing that while cats benefit from an overabundance of interest, they are also buried under a palimpsest of definitions. I also argue we need to reevaluate how we interpret human-cat interfaces to avoid defining cat domestication with a problematic Cartesian nature-culture binary. To better explicate ambiguous interspecies dynamics as with humans and cats, we need continuing, holistic, multidisciplinary discourse and to strive for more flexible interpretations of the past.

Miller Wolf, Katie, Cesia Isamar Flores, Kenia Chacón (Copan Ruinas Pueblo), Mariana Siliezar Martinez (National Autonomous University of Honduras), Jorge Ramos (Honduran Institute of Anthropology and History), and Eva Martinez Ordoñez (National Autonomous University of Honduras)

[26] *The View from Honduras: The Emergence and Importance of the Study of Human Skeletal Remains* Archaeological investigations in Honduras began in the mid-nineteenth century, with projects led by foreign institutions with hierarchical relationships toward local colleagues. Recently, archaeology has been transformed by those committed to strengthening the discipline in-country through projects and the anthropology bachelor's at the Universidad Nacional Autónoma de Honduras. Efforts ensure practice and theory reach local and descendant communities to foster education and professionalization of bio/archaeologists. Projects are now Honduran-led and include local and descendant communities, a pattern often absent in North America. Ancient Mesoamericans buried their dead in residential and public spaces, so archaeologists regularly encounter skeletal remains, but the story of the dead is not viewed as profane or problematic. There exists profound interest in the stories of the dead, viewed as essential to reconstructing the past to connect with ancestors. Honduran archaeologists are devoted to the holistic, contextualized study of past experiences through skeletal remains as sociocultural attitudes toward the dead are markedly different. Concerns about cultural imperialism from the USA or elsewhere that could limit within-community decision-making related to Honduran bio/archaeology exist. Even so, bio/archaeology is complex as it relates to education, academic silos, and resources for the study and curation of remains deeply valued by Hondurans. *****This presentation will include images of human remains.**

Miller Wolf, Katie [194] see Barreiro Castro, Ahalisharaeyli

Miller Wolf, Katie [321] see Bello-Hernandez, Cynthia

Miller Wolf, Katie [194] see Flynn-Arajdal, Yasmine

Miller Wolf, Katie [36] see Schwartz, Aliana

Mills, Barbara (University of Arizona), Kyle Bocinsky (University of Montana), Jeffery Clark (Archaeology Southwest), Kaitlyn Davis (Northern Arizona University; Chronicle Heritage), and Sarah Oas (Archaeology Southwest)

[385] *Cotton Production and Regional Distribution for Western Pueblo Cultural and Ritual Sustainability, 1150–1450 CE*

Most archaeological research on sustainability focuses on how human groups maintained adequate access to food resources, especially during climatic downturns. In this paper, we look beyond food resources to examine evidence for cotton production and distribution and ritual textile production, which formed the basis for exchange networks that sustained cultures in the Western Pueblo Southwest despite climatic variation and demographic upheaval. By comparing areas in the Western Pueblo Southwest with cotton-growing potential, as identified in the cotton niche model developed from the PaleoCAR 3.0 dataset, to settlements in this area with architectural evidence for ritual cotton weaving, we identify where and when cotton-utilizing settlements fell outside the niche, thus likely relying on exchange to obtain this valuable resource. Using cyberSW 2.0, we then examine cotton ubiquity and ceramic data from dated features within

settlements in the Tonto Basin, a likely exporter of cotton, to look at the timing and directionality of exchange with Pueblo settlements on the Colorado Plateau and in the Transition Zone. To maintain cultural sustainability, Western Pueblo cotton production and exchange was concentrated in the Hopi area when the Tonto Basin and Transition Zone were depopulated by the mid-fifteenth century.

Mills, Barbara [385] see Giomi, Evan

Milton, Emily (Michigan State University), Victoria Schwarz (Michigan State University), Daniela Osorio (Universidad de Tarapacá), Sarah Meinekat, and Kurt Rademaker (Center for the Study of the First Americans)

[382] *Fremen and Frost: An Arrakis Model of Early Human-Water Dynamics in the Central Andes*

Water is essential for life. Forager research demonstrates that communities adjust mobility strategies in arid regions, often tethering to water sources. This talk investigates human-water relationships in multiple arid environments. We argue that, as the most critical resource for humans, water played a pivotal role in early settlement dynamics. Using Arrakis as an analog for the Central Andes, we hypothesize how water use and technologies may have varied across diverse ecosystems, and discuss the implications for the archaeological record. We use examples from two Pleistocene-Holocene sites in southern Peru, the high-elevation Cuncaicha rockshelter and Quebrada Jaguay 280 near the Pacific coast, to explore how water availability may have impacted site selection, occupation intensity, and settlement strategies.

Milton, Emily [88] see Barker, Kristin

Milton, Emily [382] see McDonough, Katelyn

Milton, Emily [53] see Meinekat, Sarah

Milton, Emily [193] see Osborn, Jo

Milton, Emily [382] see Osorio, Daniela

Milton, Emily [382] see Rademaker, Kurt

Minette, Ellie

[33] *The Evolution of Public Archaeology in Pensacola*

Pensacola has been invested in public archaeology since the 1980s when Dr. Judith Bense began the Hawkshaw Project. Since then, archaeologists have continued to prioritize and promote public engagement, education, and stewardship through books, exhibitions, presentations, field trips, and a variety of other methods. This research examines the evolution of public archaeology in Pensacola from the Hawkshaw Project, through the creation of the Florida Public Archaeology Network, and what it means to do public archaeology today. Using the diverse assemblage of prehistoric and historic artifacts recovered during the Hawkshaw excavation and later displayed in a public-turned-private office space, publicly accessible physical and digital exhibitions were created. This research is aimed at bringing legacy collections back to the public sphere to tell new and relevant stories while simultaneously exploring best practices in exhibit design and collections-based research.

Mink, Philip (UK WS Webb Museum Anthropology), Sean Bailey (University of Kentucky), Ryan Nolin (University of Kentucky), and Brian Mabelitini (Kentucky Transportation Cabinet)

[75] *Finding the Forgotten: Using Aerial and Terrestrial Remote Sensing to Search for a Civil War Mass Grave near Simpsonville, Kentucky*

On January 25, 1865, Company E of the 5th United States Colored Cavalry (USCC) was ambushed near the town of Simpsonville, Kentucky, by a group of Confederate guerrillas. Twenty-two of the USCC troops were killed, and another eight were severely injured. The dead were hastily gathered and buried by the local residents and the wounded were taken to Louisville. A 2009 geophysical survey in the Trim #2 United Brothers of Friendship Cemetery near the site of the ambush was unsuccessful in locating the mass grave. However, a recently uncovered 1936 highway map provided a new location for us to examine with more updated technologies. This presentation presents the results of both aerial and terrestrial remote sensing surveys conducted in March 2024 at this new locale.

Mireles Salcedo, Camilo (McGill University)**[180]** *Household Production of Obsidian Artifacts and Everyday Practices at Los Guachimontones, Mexico*

In this presentation, I analyze the production and consumption of obsidian artifacts among groups of varying social statuses at Guachimontones, Jalisco, Mexico, from 350 BCE to 450 CE. I then discuss what these practices reveal about power negotiations and resource control in the region. My study is based on an analysis of 6,624 obsidian artifacts collected from two residential areas: La Joyita, a high-status compound, and Group 39, a low-status group of structures. The results reveal that elites and commoners acquired obsidian from similar sources and employed similar lithic technology, characterized by opportunistic flake production. This suggests both groups had comparable access to obsidian sources and production technologies. However, the collection from La Joyita displayed larger, heavier obsidian objects and a greater diversity of bifaces and scrapers, while Group 39 featured a higher proportion of ritual objects, such as jewelry and perforators. These variations suggest that each group had distinct acquisition strategies and everyday practices related to obsidian artifacts, reflecting diverse social experiences. Contrary to previous assumptions, I contend that leaders did not monopolize obsidian circulation. Instead, commoners and elites mobilized, produced, and consumed obsidian artifacts according to their agendas within a more horizontally structured society than previously thought.

Mirro, Michael [284] see Tibbits, Tawny

Mirza, Sara [85] see Knutson, Teagan

Misarti, Nicole [194] see Alfonso-Durruty, Marta

Misra, Shikha (Chronicle Heritage [formerly PaleoWest])**[68]** *Old Growth Pinyon-Juniper Woodlands and Historic Properties in Colorado*

The Bureau of Land Management contracted Chronicle Heritage to help plan vegetation treatments on a landscape level by creating and utilizing a GIS model that informs planners and management the locations of old growth trees and associated historic properties. This model incorporated existing data on historic landscape modifications, current vegetation treatments, known fire history, and data publicly available on databases to identify pinyon-juniper woodlands, vegetation communities known to contain significant resources for the Ute people. Archaeologists conducted a Class III cultural inventory of 1,000 acres of lands managed by Upper Colorado River District to test the validity of the model. This poster presents the results of Chronicle Heritage's survey.

Mitchell, Douglas [188] see Gilpin, Dennis

Mitchell, Juliette (SCAPE Trust, University of St. Andrews), Joanna Hambley (SCAPE Trust, University of St. Andrews), and Tom Dawson (SCAPE Trust, University of St. Andrews)**[99]** *Surveying Scotland's Coast: How the Integration of Scientific Models and Community Heritage Knowledge Is Helping Coastal Communities Address the Realities of Climate Change*

Scotland benefits from having a mature methodology for the national assessment of threats to coastal heritage. Coastal surveys now incorporate community participation and a process of ongoing prioritization. The approach has been highly effective in engaging the public in thoughtful dialogue and practical action relating to the effects of climate change on heritage. For the past 25 years, much of this work has been conducted by the SCAPE Trust, a research team at the University of St. Andrews. Our work is enabled by the support of Historic Environment Scotland, together with a legislative tradition of open access to heritage records and a right to roam. This paper presents a further evolution of SCAPE's approach, which now deploys recently available models of coastline vulnerability and future change to focus fieldwork in areas most threatened by erosion and puts community knowledge to the fore. Using examples from recent fieldwork in the Northern and Western Isles we will demonstrate how the combination of scientific information and local heritage knowledge is informing how climate change is being conceptualized and experienced by coastal communities. We consider how this could enrich action in addressing the realities of climate change on the coastal heritage resource.

Mitchell, Juliette [320] see Hamilton, Derek

Mitchell, Piers [288] see Rabinow, Sophie

Mitchem, Alexandria

[293] *Macrobotanicals from the Attic: Legacy Data at Bartram's Garden (Philadelphia, PA)*

In 1977, historic preservation specialists working at Bartram's Garden (Philadelphia, PA) uncovered a surprising find under the floorboards of the attic of the family home. Over 5 kg of material had been cached by rodents over the late eighteenth and early nineteenth centuries. Established in 1728 by botanist John Bartram, the garden is the oldest surviving botanic garden in North America. Many botanical taxa, botanically curious people, and other creatures in a Middle Atlantic homestead and garden passed through this tract of land on the Schuylkill River. Traces of their comings and goings were inadvertently preserved by these rodents. Beginning in 2018, the macrobotanicals present in this material have been extensively analyzed, providing information about the family's diet, business, and scientific endeavors. This paper takes a step back from the results of this project to ask an additional, and adjacent set of questions. In what ways is rodent collected archaeobotanical data, like legacy data, an alternative archive? Does this kind of research reproduce the affordances and harms of other legacy research? Finally, how should we be asking other historic sites to save these types of data when they uncover them, and who should be analyzing these finds?

Miulli, Alyssa [188] see Winter, Margaret

Mixer, David (Binghamton University), Kara Fulton, Rebekah Metz, and Theresa Heindel (Webb School)

[324] *Watering the Community: Preliminary Research into the Aguada Group at Actuncan, Belize*

In the Maya Lowlands, water is a precious but fickle natural resource. Too little water shrivels crops and leads to hunger, while too much water washes away fields and houses, transforming the land to mud and misery. To help manage these challenges, some ancestral Maya captured water into reservoirs, holding excess for times of need. Unlike at some Maya sites, water storage at Actuncan, Belize, was not existential due to its location just above the western bank of the Mopan River. However, residents still built a central reservoir at the western edge of the site's elevated ceremonial center. This location would have provided more convenient access to water for residents in comparison to schlepping down to the river. It also would have facilitated year-round watering of garden plots located along its drainage. In this poster, we present preliminary results from our investigations of this *aguada* and 2024 excavations by the Actuncan Archaeological Project into its surrounding architecture. Hydrological modeling shows how the *aguada*'s water may have been used, while excavations into the large platform between the *aguada* and the site's probable market plaza aim to understand how stored water was sustainably administered and accessed from the Preclassic to Postclassic periods.

Mixer, David [188] see Angell, Emma

Moes, Emily [36] see Cerezo-Román, Jessica

Moes, Emily [104] see Pearson, Osbjorn

Moes, Emily [104] see Rangel, Esteban

Moffett, Abigail (McDonald Institute for Archaeological Research, University of Cambridge), Scott Dunleavy (McDonald Institute for Archaeological Research, University of Cambridge), Celso Simbine (Eduardo Mondlane University), and Solange Macamo (Eduardo Mondlane University)

[59] *Entangling the Maritime Trade Routes of the Indian Ocean World: A View from Southern Mozambique*

Despite evidence of contact between southern African coastal communities and Indian Ocean maritime networks from 600 CE, the connections between these coastal groups, the communities of the interior, and oceanic maritime routes during the Global Middle Ages remain poorly understood. Our current project, ENTANGLED, employs an interdisciplinary methodology of archaeological, historical, and ethnographic data

to explore the development of maritime economies in southern Mozambique as well as the nature and directionality of coastal-interior trade routes. We aim here to provide a brief overview of the project and our preliminary findings in this region. Early Arabic and Portuguese accounts identify the Bay area with a sustained maritime economy prior to 1500 CE, a dynamic also reflected in preliminary historical and ethnographic interviews. Our initial surveys in the region have identified several areas of long-standing human activity on the mainland and the adjacent Bazaruto Archipelago, while excavations at the recently identified Zimbabwe type site at Ngomene have yielded significant finds that shed light on coastal interior connections. Drawing on these findings, we discuss the overlapping networks of interaction that linked various coastal and inland communities of the region, bringing to the fore the entangled nature of early Indian Ocean maritime economies.

Mofidi, Ethan (University of Oklahoma), and Jeffrey Lewis (University of Oklahoma)

[225] *Results of Pre-graduation Support Initiatives at the University of Oklahoma*

A common complaint among employers and recent graduates is how anthropology students, particularly those focusing on the subfield of archaeology, are not prepared to meet the demands of the positions available. While there are debates as to who is to blame for this, the primary focus should be on how both cultural resource management firms and universities can foster better communication with students. As students are typically unaware of which skills are needed to be successful in a future career, it is crucial to facilitate early communication. This poster discusses preliminary results and strategies of events at the University of Oklahoma held through the Anthropology Graduate Student Association in coordination to increase engagement between future employers and students.

Mogesie, Seminev (Sapienza University of Rome), Mary Anne Tafuri, Patrick Roberts (Stable Isotope Laboratory), Marina Gallinaro, and Enza Spinapolicce (Sapienza University of Rome)

[167] *A Multi-isotopic Approach of Understanding Human Paleoecology and Land Use during the MIS 3 at the Gotera Site, Southern Ethiopia*

The Late Pleistocene saw major developments in human behavior including technological transition, behavioral modernity, range expansion, and dispersal within and beyond Africa, which broadly overlapped with ecological and climatic fluctuations. However, we know little about the ecological and environmental settings through which *H. sapiens* thrived, expanded, and contracted into novel environments. To address this issue, we employed stable carbon ($\delta^{13}\text{C}$), oxygen ($\delta^{18}\text{O}$), and strontium ($^{87}\text{Sr}/^{86}\text{Sr}$) isotope analysis of mammalian tooth enamel from the Gotera MSA site in southern Ethiopia. Our stable isotope analysis reveals the presence of an open and predominantly C_4 grassland environment. A minimum extent of woody habitat ecology has been inferred from the $\delta^{13}\text{C}$ values of mixed feeders. The $\delta^{13}\text{C}$ values are in agreement with the $\delta^{18}\text{O}$ values suggesting a semiarid climatic condition. The $^{87}\text{Sr}/^{86}\text{Sr}$ isotope ratio reveals the Gotera faunas are of predominantly local origin suggesting limited mobility patterns and exploitation of local resources in the Gotera area. Our stable isotope analysis along with sedimentological, zooarchaeological, and archaeological data demonstrates the Gotera site may have offered a lakeside refugia for hunter-gatherers by providing locally available resources such as water, raw material, and open and semiarid environmental settings.

Mogetta, Marcello [76] see Pallas, Caitlyn

Mohammadi, Justin [340] see Woehlke, Stefan

Moline, Mark [114] see Character, Leila

Molle, Guillaume (CIRAP, University of French Polynesia), Eric Conte (CIRAP, University of French Polynesia), and Barry Rolett (University of Hawaii Manoa)

[173] *Chronology Building for the Marquesas Islands (Eastern Polynesia): The Emerging Consensus*

Since publication of the first radiocarbon dates from the Ha'atuatua (Nuku Hiva) and Hane (Ua Huna) sites, the Marquesas Islands, *te henua 'enana*, have played a critical role in the construction of settlement models for Eastern Polynesia. However, the chronology of Polynesian arrivals in the Marquesas and the subsequent cultural sequence have been largely debated for more than 50 years. Research led by Melinda Allen and her

team on Nuku Hiva over the past two decades has contributed to major advancements such as improving the radiocarbon chronologies and acquiring new archaeological and paleoecological evidence to document the long history of this archipelago. Here we review the most recent studies including the reinvestigation of key sites in both the northern (Hane on Ua Huna) and southern group (Hanamiai on Tahuata) along with results from M. Allen's fieldwork on Nuku Hiva. Almost 70 years following R. C. Suggs's pioneering stratigraphic excavations, a growing consensus now shows that the first human installations in the Marquesas Islands occurred by the eleventh or twelfth century AD, a framework coherent with current views on the colonization of Eastern Polynesia as a whole.

Molter, Tyler [192] see Contenti, Dustin

Molter, Tyler [70] see McMurry, Sean

Monaghan, John [379] see Kestle, Caleb

Monetti, Lisa [321] see Protopapadakis, Michail

Monge, Susan (University of Illinois, Chicago)

[85] *Ceremonial Fowl: An Iconographic Analysis of Turkey Effigy Vessels from Greater Nicoya, Costa Rica*

Animal imagery is an essential component ubiquitously present in the ancient cultures of southern Central America. Despite the immense variety of local avian species in the tropics, non-native turkeys (*Meleagris gallopavo*) feature prominently in high-quality polychrome ceramics from the Greater Nicoya area in Costa Rica. In this poster, I present an iconographic study of turkey effigy vessels from Costa Rican museum collections. Preliminary results reveal that these birds are depicted almost exclusively on funerary or ceremonial vessels alongside symbols of power and prestige. Moreover, this research explores broader regional interactions by analyzing representations in the stylistic tradition known as the Postclassic International or Mixteca-Puebla style. Coupled with ancient DNA data from archaeological specimens, turkey imagery also suggests an association between feather color variation and adaptations to humid tropical climates, offering new perspectives on how ancient societies may have adapted these birds to a new environment. This analysis aims to contribute to understanding human-animal relationships and their impact on ancient societies along Mesoamerica's southern frontier.

Monge, Susan [288] see Witt, Kelsey

Monroe, Shayla (Harvard University)

[54] *Semi-feral Sacrifices? People, Aurochsen, and Bos taurus in the Early Holocene Eastern Sahara*

The contentious debate over the possibility of an independent domestication event for African cattle has recently been reignited, but the debate continues to hinge on designating early African *Bos* elements to either *Bos taurus* (of Southwest Asian origin) or *Bos primigenius africanus*, the indigenous African aurochs. Problematizing the binary between "wild" and "domestic" might allow us to compare the earliest Nubian Desert *Bos* populations to the "semi-wild" Bovidae populations of the Asian continent (sensu Barbato et al. 2020): animals undergoing the attentive management of human populations without exhibiting the phenotypic or genetic results evidencing that attention. Rather than using the arrival of *B. taurus* on the African continent to bifurcate the relationship between people and cows into "pre-domestication hunter" versus "post-domestication herder," exploring the early mid-Holocene human management of northeast African cattle populations in a "liminal" or semi-wild state can free osteological, aDNA, or genomic/statistical methods of analysis from the dichotomy of wild versus domestic and allow us to understand a continuous, central, and dynamic relationship between northeast African people and the genus *Bos*.

Montenegro, Anly [159] see Canuto, Marcello

Montero, Gabriela

[344] *No Need to Change Our Ollas: The Role of Utilitarian Ceramics in Household Cultural Transmission and Economic Adaptations during the Postclassic Period*

The PAMLAS project examines the cultural continuity of indigenous populations at the Eastern Lower Papaloapan Basin sites of Mazapa, La Sierra, and Escobillal. This paper specifically focuses on the role of utilitarian ceramics at the household level, exploring their significance in cultural transmission during periods of economic adaptation, particularly after the Classic “collapse” and the subsequent arrival of the Aztec Empire. The persistence of continuity, alongside minor changes in the production and consumption practices of these ceramics, reveals strategies employed to navigate sociopolitical transformations. At these sites, traditional ceramic classification is methodologically insufficient for this period, as representative Postclassic types usually acquired and used by elites are scarce. This paper presents the findings from the PAMLAS ceramic attribute analysis of a Postclassic sample, demonstrating how this research contributes to understanding the Gulf Coast’s cultural “patchwork.” This region, inhabited by “ordinary people” for millennia, has preserved cultural traits that remain visible today. *****This presentation will include images of human remains.**

Montero, Gabriela [48] see Cuevas, Mauricio

Montgomery, Darrell [314] see Powis, Terry

Montgomery, Lindsay

[110] *“We Still Do That”*: Braiding Indigenous and Settler Temporalities on the Hopi Reservation

Within settler colonial frameworks, time is abstracted from embodied experiences of place and transformed into a commodity that can be regulated and controlled. These racialized and hierarchical space-time regimes were imposed by the American government onto Native peoples through reservations, schools, and churches. While these assimilationist structures sought to control Indigenous bodies, places, and social practices, Native communities continued to articulate their own space-time regimes grounded within cyclical and relational ontologies. In this talk, I examine temporal metaphors embedded in Bureau of Indian Affairs documents and oral histories to document everyday acts of persistence, resistance, and negotiation on the Hopi reservation during the early twentieth century. Building on the work of Frida Buhre and Collin Bjork around Sami temporalities, I take a braided approach to time that documents the long-term entanglement of Hopi-settler histories and futures. In embracing a pluralistic temporal framework, the concept of braided time rejects colonial narratives of Indigenous disappearance while asserting the contemporaneity of Hopi peoples.

Montoya, Amy [274] see Civitello, Jamie

Montoya, Joaquin [274] see Civitello, Jamie

Montúfar López, Aurora (Instituto Nacional de Antropología e Historia)

[200] *Arqueobotánica del Templo Mayor de Tenochtitlan: Plantas rituales, agrícolas y tipos de vegetación*

Este trabajo informa de la arqueología, historia y etnografía de las principales plantas rituales cuyas estructuras: semillas, frutos, hojas, fibras (textiles) y resinas, fueron recuperadas en contextos de oblación y también en muestras sedimentológicas culturales de los sustratos del subsuelo del Recinto Ceremonial de México-Tenochtitlan, como parte de las excavaciones arqueológicas del Proyecto Templo Mayor, dirigido por el arqueólogo Leonardo López Luján. Los restos vegetales arqueológicos son estudiados para definir su identidad taxonómica. La metodología que se aplica permite la identificación de los materiales botánicos por comparación, utilizando la literatura especializada, relacionada con la morfología de semillas, fibras, resinas, flores y frutos, principalmente. Los datos científicos obtenidos definen las plantas a nivel de género y, en ocasiones de especie; información que muestra las formas de su aprovechamiento, no solo de tipo ritual, también indica las especies agrícolas y de recolección, entre los taxa depositados intencionalmente y los que son de aporte natural. Las plantas identificadas son indicadores de la vegetación local y el intercambio con la flora entre la Cuenca de México y otras regiones. El conocimiento ceremonial y ecológico exhibe rasgos de la tradición religiosa mesoamericana.

Monzón, Elvis [189] see Mullins, Patrick

Mooneyham, Erin, Madison McCartin (UC Davis), and Teresa Steele (University of California, Davis)**[373]** *A Discussion of Animal Matters*

A discussion of ethics in any area of archaeology requires input from a diverse array of people and perspectives. We aim to synthesize the main points from the session and allow a space for individuals to provide their experiences and insights on topics such as decolonization, best practices for specimen acquisition and sampling, and ethical teaching practices. This discussion will facilitate the identification of main ideas and actionable steps that zooarchaeologists can take to continue making the field a more ethical space. To close the session we will open the floor for discussion of other zooarchaeological ethical issues that were not covered in any presentation, such as the emotional experience of the analyst, relational ontologies, and anthropocentric versus animal-centric viewpoints.

Mooneyham, Erin [373] see McCartin, Madison

Moore, David [50] see Rodning, Christopher

Moore, Katherine (UPenn Museum of Archaeology and Anthropology)**[376]** *Andean Hunting and Pastoralism: Measures of Animal Health, Care, and Environmental Change*

The origins of domesticated llamas and alpacas from their wild ancestors took place in arid and rugged environments. Zooarchaeological remains of camelids record the well-being, mobility, and longevity of individual animals. Records from several high-resolution assemblages from the central Andes show different life histories over time, and suggest forces acting on those life histories. Important measures from camelid teeth show how different combinations of forage, water availability, and soil produce different tooth wear rates (mesowear), conditions which probably impacted longevity and productivity of meat and fleece. This paper explores the direction and scale of changes that have been observed in animal life histories using tooth wear. Other aspects of animal health can be traced with tooth eruption data, from bony pathologies on the jaw and on other skeletal elements. Both human influence on animals and dynamic vegetation, rainfall, and pathogens loads impacted camelid well-being. Genetic and isotopic analysis of remains may suggest some of the outcomes but direct measures of life history offer behavioral and environmental aspects of change. Life history data involves different sampling biases and deserves coordinated integration with the new wave of molecular approaches.

Moore, Katherine [87] see Luurtsema, Anna

Moore, Kaylyn (University of Oklahoma)**[198]** *Co-creating a Cultural Heritage Curriculum with the Choctaw Nation of Oklahoma's Historic Preservation Office Using Archaeology as a Tool*

Collaborative archaeology fosters relationships between communities and archaeologists to create new perspectives of the past. This paper examines the collaborative process between archaeologists from the Choctaw Nation of Oklahoma's Historic Preservation Office and me, aiming to develop a curriculum focusing on Choctaw cultural heritage utilizing archaeology as a tool for Oklahoma history classes. In Oklahoma history classrooms Indigenous voices are rarely represented, hindering students' connection to the past. Through embracing Community-Based Participatory Research (CBPR), this project outlined the collaborative process used to create a curriculum focused on Choctaw cultural heritage. This paper seeks to provide new insights into collaborative archaeology and archaeology education and to offer guidance to those interested in pursuing similar projects.

Moore, Kaylyn [346] see Pitblado, Bonnie

Moot, Dana (University of Alabama), Alejandro Patino-Contreras (Independent Researcher), Alexandre Tokovinine (University of Alabama), and Michael Callaghan (University of Central Florida)**[169]** *Defining the Style of Holmul Polychromes at the Early-Late Classic Transition*

The distinct styles of fine polychrome vessels produced by "workshops" of elite artists have been considered

one of the defining traits of the Ancient Maya culture during the Late Classic period (550–850 CE). Yet the sociocultural and political contexts driving the emergence of regional polychrome ceramic styles and the rise of a few Maya polities as focal points of certain regional traditions remain poorly understood. One significant challenge has been that most studies of regional styles dealt with looted vessels attributed based on the dedicatory inscriptions and artists' signatures. The present study addresses this challenge by examining a large sample of Saxche Orange polychrome vessels and vessel fragments excavated in the Holmul region. For the first time, the dataset enables a substantive discussion of the emergence of a regional polychrome style associated with the royal court of Naranjo-Sa'al and its Holmul variants during the Early–Late Classic transition. The findings enable a critical evaluation of prior research on the Naranjo polychrome tradition that was based near-exclusively on looted vessels.

Moragas, Natalia [296] see Torras Freixa, Maria

Morales, Ernesto (Cal State LA)

[381] *A Reassessment of Chalchihuites Mining*

For the last 50 years, the Chalchihuites area of Zacatecas has been intimately associated archaeologically with mining. In the 1960s, Charles Kelley conducted a series of excavations at the site of Alta Vista along with his graduate student Phil C. Weigand. Over 800 subterranean features dating from 350/400 to 900 CE were identified and labeled as “mines” by Kelley and Weigand. The attraction was the application of a world-system model with the Chalchihuites region supplying Teotihuacan with turquoise and other minerals. However, Chalchihuites is not a turquoise producing area, and no convincing evidence of mineral extraction exists, yet the idea of Chalchihuites as a mining area remains firmly entrenched. This paper reexamines Chalchihuites mines in the Gualterio mining group located around 1.6 km southwest of the modern town of Gualterio and around 13 km northeast of the archaeological site of Alta Vista to demonstrate that these features were not mines. A ritual model for these subterranean features is proposed.

Morales-Aguilar, Carlos (University of Texas, Austin), Richard Hansen (Idaho State University; FARES Foundation), Enrique Hernández (Mirador Basin Project), Daniel Salazar (Laboratoire ArchAm, UMR8096-CNRS), and Ivan Šprajc (Research Center of the Slovenian Academy of Sciences and Arts)

[383] *Archaeological Investigations at Chacte: Understanding the Preclassic Suburban Landscape of El Mirador, Petén, Guatemala*

This paper discusses the archaeological findings at Chacte, a significant Preclassic suburban site associated with El Mirador in Petén, Guatemala. Strategically located to control southern routes to El Mirador, Chacte was crucial in the sociopolitical and economic landscape from the Middle to Terminal Preclassic periods. The site is characterized by an E-Group, a monumental ceremonial complex, highlighting its religious and astronomical significance. This complex, along with architectural masks and carved monuments, underscores the role of Chacte in Preclassic rulership and ideology. Notably, an elevated causeway of 4 km long links Chacte and El Mirador, suggesting it functioned as a secondary administrative center for the latter. The orientation of ceremonial structures at Chacte aligns with solar observations, influencing ritual timing and reinforcing the sacred authority of the site. This study not only explores the architectural and spatial organization of Chacte but also places the site within the broader context of Preclassic Maya urban development and state formation. Through a detailed examination of Chacte and its connections to El Mirador, the research contributes to a deeper understanding of regional power dynamics and the role of suburban centers in the development of complex societies in the Maya lowlands during the Preclassic.

Morales-Aguilar, Carlos [325] see Baldwin, J. Dennis

Morales-Aguilar, Carlos [383] see Hernández, Enrique

Morales Chocano, Daniel [282] see Arata, Megumi

Morales Chocano, Daniel [46] see Kanazaki, Yuko

Morales Chocano, Daniel [282] see Nakagawa, Nagisa

Morales Chocano, Daniel [282] see Seki, Yuji

Morales Chocano, Daniel [282] see Takigami, Mai
Morales Chocano, Daniel [282] see Uzawa, Kazuhiro
Morales Chocano, Daniel [282] see Villanueva Hidalgo, Juan Pablo

Morales Forte, Rubén [322] see Lamoureux-St-Hilaire, Maxime

Moran, Alia (Northern Illinois University), Kanjana Thepboriruk (Northern Illinois University), and Dana Bardolph (Northern Illinois University)

[226] *Living Archaeology, Artifacts, and Implications in the Thais in Illinois Oral History Project*

The goal of this project is to document the Thai American immigrant experience, in order to empower Thai American teens today through participation in oral history collection and to educate the public about Thai American culture and language through a moving museum and learning curriculum. To this end, we have conducted ethnographic fieldwork, literature review, and lab work to digitalize, document, and analyze material culture of Thai Americans from the greater Chicagoland area, primarily members of the Chicago Wat Dhammaram (Buddhist Temple). We use a framework of archaeology of the contemporary, including ethnoarchaeology, to interpret modern day materials that have historically not been considered with archaeological methods. This project relies on community members providing artifacts rather than “finding” them in a traditional sense, allowing us to conduct an archaeology of a real-time archive and enabling us to apply retrospective ideas onto a proactive context. The implications of this research are how the larger project and any future projects will be conducted to create a more diverse historical record and teaching material, for the study of Thai Americans and beyond.

Moran-O’Dell, Gabrielle (Michigan State University)

[191] *Indigenous Migratory Route: Preliminary Fieldwork at the USDA-NRCS Rose Lake Plant Materials Center (PMC), Bath, Michigan*

On a 44-acre property located at USDA-NRCS Rose Lake Plant Materials Center (PMC) in Bath, Michigan, is a site that has a rich prehistoric background dating from the Late Woodland to the Late Archaic periods. The PMC has five known archaeological sites across the landscape that have shaped how the property is viewed. Based on pedestrian survey and preliminary dissertation fieldwork, it appears as though the PMC represents an Indigenous migratory route. This poster shares this research’s initial findings, including data recovered via ground-penetrating radar, other geophysical methods, and excavations.

Morehart, Christopher [89] see Blumenfeld, Dean

Moreiras Reynaga, Diana [36] see Alarcón Tinajero, Edgar

Morello Repetto, Flavia (Universidad de Magallanes), César Méndez (Pontificia Universidad Católica de Chile), Omar Reyes (Instituto de la Patagonia, Universidad de Magallanes, Punta Arenas, Chile), Manuel San Roman (Instituto de la Patagonia and Cape Horn International Center, Universidad de Magallanes, Punta Arenas, Chile), and Consuelo Huidobro (Universidad Alberto Hurtado, Chile)

[191] *Maritime Obsidians: Navigating Hunter-Gatherer Archaeology at the Southern Cone of the Americas (38°–56° S)*

The long-distance transport of obsidian is a characteristic feature of the early maritime hunter-gatherer societies that inhabited Patagonia and Tierra del Fuego. Their presence in the archaeological record is assessed in relation to the development of specialized maritime lifeways that extended along the western archipelago of the Southern Cone of America from at least ca. 7000 cal years BP to historic times. The overall integration of studies of mobility, technological organization, use-wear analysis, geochemical studies, and the historical trajectories of the two known obsidian sources is presented. The maritime obsidian industries are concentrated at the geographical extremes of the Patagonian archipelago, thousands of kilometers apart, and played different dynamic roles within these seafaring societies. Chaitén Volcano obsidian and green obsidian from Seno Otway/Riesco Island are discussed in relation to various regional and macrozonal issues, and on a continental scale we consider their role in understanding early archipelagic peopling and the evolution of specialized maritime adaptations during the Middle and Late Holocene. This

presentation is funded by grants: ANID/BASAL FB210018, FONDECYT 1211976, 1210045, 1200857 & 1220219.

Moreno Mayar, José Víctor (University of Copenhagen)

[339] *Ancient Genomics of the Peopling of the Americas*

The Americas were the last continent to be reached by anatomically modern humans. Thanks to large-scale genomic studies, archaeology, anthropology, and geology we have a broad understanding of the process whereby the ancestors of present-day Indigenous Americans originated in Northeast Asia, reached the continent after the Last Glacial Maximum (<25,000, years ago), and rapidly expanded as the glacial ice sheets melted toward the end of the Pleistocene. However, owing to the low archaeological visibility of the first American populations, multiple features of the peopling of the Americas remain contentious. In this talk, I will present our work focused on studying whole genomes from individuals spanning from Alaska to Patagonia and dating from the Terminal Pleistocene to the Late Holocene. By analyzing these genomes and contextualizing them together with archaeological evidence, we have obtained valuable insights into the timing and location of the formation of the Indigenous American gene pool and the populations that contributed to it, the ancient population divergence and admixture patterns within the Americas, and their role in shaping the genomic diversity of present-day Indigenous Americans.

Moretti-Langholtz, Danielle (William & Mary), Buck Woodard (William & Mary), Noel Lopez (National Park Service), Josh Torres (National Park Service), and Martin Gallivan (William & Mary)

[291] *A Tripartite Approach for Determining Tribal Affiliation for Petroglyphs and Rock-Borne Imagery*

Global interest in petroglyphs and rock-borne imagery is arguably at an all-time high as evidenced by scholarly publications, online interest groups, and conferences dedicated to the topic. Methodological approaches to the preservation, conservation, interpretation, and dating of petroglyphs are often the primary foci of such efforts. However, in the United States, with NAGPRA legislation and the mandated regulations for the inclusion of Indigenous perspectives and voices on the preservation, monitoring, and interpretation of petroglyph sites, there is a critical need for defining the Native tribes with likely affiliation to particular petroglyph sites and developing paths to consultation and collaboration. This task is often complicated by a colonial legacy resulting in ruptured connections with Native groups and silences in the historical record. This paper will share a tripartite approach for defining the tribal affiliation for petroglyphs on a complex landscape in the eastern United States.

Morgan, Christopher (University of Nevada, Reno), Seetha Reddy (Reddy Anthropology Consulting Inc.), and Adie Whitaker (Far Western Anthropological Research Group)

[370] *Twenty-First-Century Challenges to Publishing the Journal of California and Great Basin Anthropology*

The *Journal of California and Great Basin Anthropology* faces significant challenges in regard to its mission, digital access and distribution, subscriptions, article submissions, staffing, and especially censorious policies enacted by the state of California that limit academic freedom and therefore the ability to publish. Here we describe these challenges and develop a set of solutions to these ongoing and ominous dilemmas.

Morgan, Christopher [190] see Begg, Sean

Morgan, Christopher [126] see Peng, Ruoyu

Morgan, Crystal

[322] *Grave Consequences: Comparing Nonintrusive Methods for Identifying Unmarked Graves at Maple Grove Cemetery (47AS0012) in Ashland County, WI*

The use of nonintrusive methods to identify unmarked graves, in or outside of a known cemetery, is not a novel pursuit, and many have been utilized to differing degrees of success. This poster will attempt to determine the effectiveness of several of these methods to identify graves at Maple Grove Cemetery (MGC) in Ashland County, WI, where there are rumors of unmarked graves in the unsold northeastern sections. Methods employed at MGC include state-flown lidar, drone-flown lidar, thermal imaging, ground-penetrating radar (GPR), and Total Data Station points. With the exception of GPR, these methods were conducted on

the entire cemetery. After completing these methods, three trenches were dug in the unsold part of MGC to verify the results from the methods above. No ground truthing was conducted in the sold or known part of the cemetery. While the effectiveness of any one method to identify all unmarked graves is contestable, this poster exhibits how the combined methods may be able to produce a more reliable assessment as to whether a grave is present or absent.

Morgan, Molly [112] see Antinossi, Abigail

Morisaki, Kazuki, and Akira Iwase

[292] *Old Enough? Determining the Beginning Age of Bifacial Point Technology in Central Japan*

The bifacial stemmed point (BSP) in Japan is considered to be synchronous with or older than the relevant examples across the northern Pacific Rim, which includes the Japanese archipelago in the west and western North America in the east. Therefore, bifacial point technology in Japan has recently been one of the focal points of discussion on the modern human peopling of Northeast Asia and the Americas. However, the onset age of bifacial point technology and BSPs in Japan is still provisional at present due to the lack of comprehensive radiocarbon chronological study. To contribute to this debate, this presentation attempt to establish a high-resolution radiocarbon chronology of bifacial point technology and BSPs in the Paleo-Honshu Island of central Japan, the largest landmass south of Hokkaido during the glacial period. For the past decades, Japanese CRM has identified more than 15,000 archaeological sites on the Island and performed radiocarbon dating of approximately 3,000 cases ranging from the Upper Paleolithic to the Incipient Jomon. In this presentation, we scrutinize and synthesize these data to provide precise onset ages for bifacial point technology and BSPs, respectively.

Morison, Melissa (Grand Valley State University)

[81] *Down the Drain: Water Management in a Late Roman Urban Space*

This paper presents analyses of Late Roman ceramics from the hydraulic systems of the Gymnasium complex at ancient Corinth, Greece. Ceramic objects from well-stratified deposits in multiple drains, used successively from the late first through late sixth centuries CE, provide evidence for patterns of community resilience and adaptive capacity over a period of significant socioeconomic change. Analysis of the ceramic assemblages from the 12 distinct drain lines reveals significant shifts in the city's management of local water resources, related repurposing of several spaces within the Gymnasium complex, and changes in the role of the complex within the broader urban fabric. These changes in the conception and use of water and space both within and adjacent to the Gymnasium complex, occurring over six centuries—from the expansion and “collapse” of the Roman Empire through the subsequent transition to the new structures of the early Medieval world—help to expand understanding of the role of large multicultural urban centers such as Corinth in mediating regional response to larger-scale processes of ecological and cultural transformation.

Moroni, Adriana [384] see Falcucci, Armando

Morris, Adela

[243] *Evolving Archaeology and Unique Scenarios for HHRD Dogs*

The Historical Human Remains Detection (HHRD) dog profession is evolving and specializing beyond just locating ancient burials. The HHRD dog brings unique information that no other archaeological tool can detect—the scent of ancient human remains. Archaeology is changing to meet new challenges. For example: climate change endangering burials, wildland fires leading to erosion that threatens sacred sites, and museum and academic institutions complying with NAPGRA. The first challenge is locating the remains so they can be protected. HHRD dogs are meeting these new archaeological needs as part of a joint collaborative approach. Specially trained HHRD dogs are now looking for cremated human remains lost during shipping, searching museum and academic collections, and surveying historic church floors and walls and excavated spoils piles looking for human remains scent. Properly trained HHRD dogs can add tools to the changing needs of archaeology.

Morris, Adela [243] see Engelbert, Lynne

Morris, Deianira (University of Arizona)

[125] *A Change in Living: Transforming Cultural Identities and Domestic Architecture in Historic Tucson*
 Following the Gadsden Purchase of 1853, Tucson, Arizona, underwent rapid demographic and cultural change. Over an 80-year period, the Hispanic residents of Tucson were first flooded by Euro-American settlers, and later forcibly integrated into the developing United States. As a result, the existing Hispanic and Indigenous communities in Tucson came in close contact with ever larger Euro-American and Chinese-American communities. This poster examines how the local and immigrant cultures interacted with each other by investigating changes in Tucson's domestic architecture between 1860 and 1920. In particular, this poster compares how the house styles in downtown Tucson changed over this 80-year period to examine how the community and culture of Tucson was influenced by the interaction between the area's local Hispanic and Indigenous communities and the successive waves of Euro-American and Chinese settlers.

Morrison, Alex (International Archaeological Research Institute)

[173] *Dynamic Island Environments: Melinda Allen's Contributions to the Study of Coastal Geomorphology and Pacific Island Colonization and Settlement*

Melinda Allen's contributions to Pacific Island archaeology are far-reaching and varied. Her study on the application of evolutionary theory to fishhook design had a substantial impact on the application of evolutionary principles to understanding variability in artifact design, not only in Oceania but elsewhere. Furthermore, her thoughtful and innovative use of foraging theory to examine patterns in precontact marine resource use on Aitutaki, Cook Islands, became the standard for subsequent applications of human behavioral ecology models in archaeological studies. Of equal influence is her work on coastal geomorphology and landscape evolution, which is the focus of this presentation. In this paper, I discuss how Melinda's ideas about landscape evolution have furthered our understanding of the context and causes of human colonization of remote Pacific Islands. Particular reference is made to her substantive theoretical contributions on the subject, the data requirements, and current data limitations.

Morrison, Alex [173] see Rieth, Timothy

Morrison, Blythe [293] see Ambler, Bridget

Morrison, Kathleen [350] see Feng, Jennifer

Morrow, Giles [172] see Park Huntington, Yumi

Morrow, Juliet (Arkansas Archeological Survey)

[96] *Mistakes Have Been Made: An Archaeo-Logical Assessment of Pre-14,500 cal BP Evidence for Human Presence in the Americas*

Geochemical dating of artifacts, bones, or other materials associated with them is only one step toward proving the age of an archaeological site. The context and association of the artifacts, bones, or other materials purported to be from human activity must also be accurately interpreted. An accurate interpretation is no small feat because there are an infinite number of processes that can act alone or in concert to modify and/or translocate artifacts and associated materials. There are numerous cases where inadequate analysis of stratigraphy and/or inadequate consideration of site formation processes have resulted in claims of extraordinarily ancient human presence in the Americas. There are also paleontological sites where bone fractures or scratches have been interpreted as anthropogenic. Since the 1980s purported human footprints have been cited as evidence and more recently DNA from human feces has been deployed. I will illustrate these fallacious modes of interpretation using widely publicized examples from the Americas.

Morse, Autumn [198] see Lynch, Joshua

Morse, Charles, Rahul Oka (University of Notre Dame), and Chapurukha Kusimba (University of South Florida)

[59] *Regional Coastal Dhow Trade Networks Are Not Limited by Monsoons, Rather Driven by Trade Needs: Implications for the Early Swahili Marinescape*

The nature of how ancestral peoples of the Eastern African coast engaged with their maritime environment remains a source of debate and uncertainty in the archaeological literature. Therein, the alternating monsoon seasons that occur during the winter and summer across the Indian Ocean are often seen as a major roadblock to maritime trade on the coast. This position mirrors the propensity for academics to see environmental factors in Sub-Saharan Africa as a key hindrance to the development of large population centers and robust market economies. This paper challenges this view regarding East Africa by examining the effects of monsoon seasons on the trade activity of small-scale “dhow” sailing ships by examining ship registries recorded at the port of Lamu in Northern Kenya between 1966 and 1976. Contrary to prevailing beliefs that monsoon winds significantly restrict and govern trade activity in specific directions during each monsoon, our findings indicate that local dhow traders engaged in commerce year-round with active trade occurring even during adverse conditions. These findings reveal that regional connections among merchants facilitated consistent and robust supply chains along the coast, thus undermining the view that environmental factors are bound to greatly hinder maritime trade in this region.

Moses, Victoria, Alison Barton (Harvard University), David Reich (Harvard University), and Michael McCormick (Harvard University)

[316] *Movement, Connections, and Cultural Contact between the Near East and Neighbors during Classical Antiquity through Ancient DNA (aDNA)*

Archaeological material and historical records attest contact between the Near East and the broader Mediterranean during Classical Antiquity (ca. eighth century BCE to sixth century CE), but ancient DNA (aDNA) expands our understanding of the extent and nature of these interactions. Due to scholarly focus on earlier periods and poor preservation in the region, aDNA in the Near East during the historical period has received little attention. Inter-site analyses of kinship connections between the Near East and the broader Mediterranean, identification of individuals across the Mediterranean with nonlocal DNA results suggesting origins or ancestry based in the Near East, and case studies from sites around the Mediterranean show new connections and migration from the Iron Age through Late Antiquity. These connections are confirmed through the geneticist’s methods such as principal component analysis (PCA, characterizes genetic diversity), and analyses showing relatedness (i.e., kinship analysis for close relationships and identity-by-descent [IBD] for more distant relatives). By studying a large dataset of published and unpublished data, this research shows aDNA expands, refines, and challenges our current understanding of interactions between the Near East and broader Mediterranean. This presentation includes images of human remains. ***This presentation will include images of human remains.

Moss, Kelly (University of California, San Diego), Weronika Tomczyk (Dartmouth College), Matthew Velasco (Cornell University), Lauren Kohut (Winthrop University), and BrieAnna Langlie (Binghamton University)

[182] *Animal Use in the Late Prehispanic Colca Valley, Arequipa, Peru*

The prehispanic Arequipa region of southern Peru was renowned for its vast camelid herds, but the exact modes of pastoral economies varied between elevations, sites, and periods. This paper examines the extent of reliance on camelids at Uyo Uyo, a significant multicomponent settlement located in the Colca Valley (Arequipa, Peru) and occupied from the Late Intermediate period (AD 1000–1450) through colonial times. The region is known for its extensive irrigated agricultural terracing and numerous camelid herds. Located at approximately 3500 masl, Uyo Uyo sits among dense terracing and is proximate to high-elevation pastures. Standard zooarchaeological analyses conducted on ca. 30% (NISP = 1687) of previously excavated archaeofauna revealed continuous dependence on camelid pastoralism in all aspects of Uyo Uyo’s lifeways. Most of the examined deposits came from post-consumption discards. Despite the lack of corrals in the site’s immediate vicinity, small- and large-body-type camelid remains dominated the examined domestic and funerary contexts. The input of local wildlife was minimal, but a broad range of occasionally procured wild species suggests ongoing reliance on locally available resources. Our preliminary analysis provides the basis

for future comparative studies of change and continuity in pastoralism in the south-central Andes.

Moss, Kelly [184] see Kohut, Lauren

Moss, Savannah [216] see O'Mansky, Matt

Mothes, Patricia (Instituto Geofísico-Quito Ecuador)

[105] *Sizes of Eruptions Count in the Ecuadorian Archaeological Record*

Stratigraphic cuts at archaeological sites in the Northern Highlands or along the coast often display volcanic ash deposits, 10–30 cm thick, produced by large VEI 5–6 explosive eruptions in the Ecuadorian Sierra. Eruptions by Pululahua (2300 years BP), G. Pichincha (1000 years BP), Cotopaxi (1000 years BP), and Quilotoa (800 years BP) pertain to this category. Eleven of these catastrophic mega eruptions occurred during the last 6,000 years and involved dacitic or rhyolitic magmas. Modest-size eruptions (VEI 3–4) were more common, almost all of andesitic composition and whose ashes are scarce in distal areas. Cotopaxi leads the list with ~60 eruptive layers in the past 6,000 years, Cayambe with 20, Tungurahua with 10 following a sector collapse 3000 years BP, Antisana with 14, and both the Cosanga Volcano Cluster and Chacana with five events each. For Reventador, Sangay, and Sumaco volcanoes, the tally is incomplete due to high erosion rates leading to poor tephra preservation. The 125 eruptions are equivalent to an event about every 50 years. Given the high eruption frequency, we assume that early cultures had certain experience in dealing with volcanic phenomena. Future investigations should attempt to determine what were some adaptive strategies used by early cultures to successfully weather eruptions.

Mothes, Patricia [105] see Vallejo, Silvia

Motta, Laura [167] see Heinrich, Frits

Moubtahij, Zineb, Klervia Jaouen (CNRS), and Abdeljalil Bouzouggar (National Institute of Archaeological Science and Heritage)

[281] *Reevaluating the Dietary Role of Coastal Resources in Later Stone Age Hunter-Gatherers of Northwest Morocco: Insights from Isotopic Analyses*

Archaeological sites in Northwest Morocco have provided valuable insights into early modern human behavior, particularly regarding the role of coastal resources, such as shells, in symbolic practices. Although some sites contain mollusk and fish remains, determining the exact dietary contribution of marine resources to ancient human groups has proven challenging. To address this, we conducted isotopic analyses on human remains from the Later Stone Age in Morocco, dating from 15,000 to 8600 cal BP. Here we synthesize recent isotopic data obtained from two key sites, Tatoralt and Kehf el Hammar, located 40 km and 10 km from the Mediterranean coast, respectively. By combining carbon ($\delta^{13}\text{C}$) and nitrogen ($\delta^{15}\text{N}$) isotopic analysis of amino acids on collagen with innovative zinc stable isotope techniques ($\delta^{66}\text{Zn}$) on tooth enamel, we directly quantified the relative contributions of marine versus terrestrial resources to the diets of these hunter-gatherer groups. Our findings suggest that marine resources were minimally exploited for dietary purposes during this period. Instead, these populations predominantly relied on C_3 terrestrial foods, with wild plants making a significant contribution to their diet. *****This presentation will include images of human remains.**

Mouralis, Damas [301] see Martin, Fabiana María

Mousalu, Marineh (California State University, Northridge), Chin-hsin Liu (California State University Northridge), Michele Bleuze (California State University, Los Angeles), and James Brady (California State University, Los Angeles)

[381] *Extra-masticatory Dental Wear: Subconscious Embodiment in a Late Classic Maya Sacrificial Assemblage from Midnight Terror Cave, Belize*

California State University, Los Angeles, conducted archaeological surveys of Midnight Terror Cave (MTC), Belize, between 2008 and 2010 as part of the Western Belize Regional Cave Project directed by Dr. Jaime

Awe. The extensively modified spaces within the cave signify an elite ritual context. Over 10,000 human skeletal elements and teeth were surface collected from the cave floor. Osteological evidence and disposal context are consistent with sacrifice. A central concern is the identity of the individuals selected for such a ritually significant event. The body can be viewed as the subject of culture, and the embodiment of one's identity can be reconstructed from modifications to the body. The extra-masticatory use of teeth results in unique dental wear patterns that, when contextualized within a sociocultural backdrop, can be used to cautiously reconstruct habitual activities. Extra-masticatory incisal grooves are frequently linked to the regular use of the anterior teeth for working materials. This paper presents an analysis of extra-masticatory incisal grooves identified in the MTC dental assemblage and draws on cultural and artifactual data from across Mesoamerica to aid in its interpretation, thus ultimately broadening our understanding of the site's sacrificial identities. *****This presentation will include images of human remains.**

Mroczek, Diana (Adam Mickiewicz University)

[327] *Navigating Ethical Dilemmas in Modern-Day Treasure Hunting in Poland: The Intersection of Social Media, Archaeological Heritage, and Archaeological Practice*

In 2023 the Polish government changed the law regarding protection of monuments, i.e., archaeological heritage in Poland, allowing metal detecting to be legal practice if used in a now much more lenient system. This significant shift in legislation has sparked both much expected excitement from the metal detecting community and many concerns among archaeologists and heritage professionals. With the rise of social media platforms and e-commerce websites, hobbyist metal detectorists and treasure hunters are increasingly showcasing their finds online, often blurring the lines between responsible and legal activities and illegal excavation. This presentation will explore the ethical dilemmas that arise at the intersection of social media usage, archaeological heritage protection, and modern archaeological practice in Poland in the context of rising popularity of metal detecting. It will examine how these platforms influence public perceptions of archaeological artifacts, the commodification of heritage, and how they form antagonistic, sometimes even conspiratory, attitudes toward professional archaeologists and existing practices. Through case studies and analysis of forum posts available on various platforms, mainly Facebook, to show the scale of the hostile remarks. I will propose some ideas for collaboration and dialogue with this, in the end successful, community.

Mtewa, Ezekia (Field Museum of Natural History), and Foreman Bandama

[51] *Dispersed Iron Production in the Urban-Rural Interface of Great Zimbabwe*

Great Zimbabwe, the major civilization south of the pyramids, had a vibrant metallurgical industry within the urban center, but the most significant iron production was located in the hinterland. Here, extensive clusters of natural draft furnaces—some with unique rectangular morphologies—alongside abundant tap slags and highly magnetic iron ores, were recovered. Operating outside of centralized bureaucratic control, these iron producers would have formed a dynamic, collaborative network that facilitated both technological innovation and social cohesion. The decentralized nature of these systems would have allowed for faster technological adaptation, as knowledge and techniques tend to flow freely between communities without the constraints of despotic oversight. This contributed to advancements in furnace design, smelting processes, and resource management. Significantly, our study challenges traditional narratives of centralized control by foregrounding the urban-rural interface, an important zone of production, cooperation, and innovation at Great Zimbabwe. We highlight how dispersed production and reciprocity between metallurgists, producers of other materials and artifacts, traders, and farmers drove both technological progress and resilience within the society.

Mudar, Karen (National Park Service)

[213] *New AMS ¹⁴C Dates from Non Pa Wai: Insights on Stratigraphic Complexity at a Prehistoric Copper Smelting Site in Central Thailand*

Non Pa Wai (NPW), located in the Khao Wong Prachan Valley on the Lopburi Plain in Central Thailand, is a 5 ha copper-smelting site with Bronze Age deposits that overlie an earlier Neolithic occupation. The deposits dating to the earliest settlement are capped by a caliche hardpan that was much disturbed by later smelting activities. Detailed dating of the deposits is complicated by extensive bioturbation and anthropogenic disturbances. This presentation discusses the results of the entire series of ¹⁴C dates (including the newest dates) from the deep sondages on NPW's main mound in relation to stratigraphy and distribution of index

artifacts. Dating this important site contributes to the ongoing discussion of the movement of copper in Thailand and Southeast Asia and facilitates completion of analyses of materials from the site.

Mudar, Karen [213] see Liu, Chin-hsin

Mudar, Karen [213] see Lowe, John

Mueller, Jackson (University of Nevada, Reno)

[317] *Whence Windust: Updates on the Distribution and Chronology of Square Base Stemmed Projectile Points in the Northern Great Basin*

The Western Stemmed Tradition (WST) is the predominant late Pleistocene and early Holocene lithic tradition in the Great Basin. It features long- and short-stemmed projectile point types including Haskett, Cougar Mountain, and Parman. Square base Windust points are often assigned to the WST, but it remains unclear if and how they are related to these other point forms. In this paper, I review the age and distribution of square base Windust points in northern Nevada and southeastern Oregon, where extensive archaeological survey and excavations offer an opportunity to evaluate current models of when and from where the technology originated. My results shed new light on the place of square base points in the WST and as a proxy for relationships between Great Basin people and neighboring groups.

Mueller, Jackson [382] see Smith, Geoffrey

Mueller, Megan (HDR)

[298] *A New Pipeline to Add to the Log: Denver's Historic Pipeline Technologies and Creative Mitigation*

In late 2023 and early 2024, the city and county of Denver discovered a historical wooden water pipeline (5DV55493.1) during construction along Federal Boulevard (SH 287) in the historic Highlands neighborhood. Agency oversight and SHPO consultation under Section 106 for the project is provided by the Colorado Department of Transportation. Historically, Denver has used numerous water pipeline technologies and materials including wood stave and cast iron. However, this pipeline exhibited a technology not yet recorded in Colorado—a pipeline made of tar coated segments of uniformly machined whole logs. Patented in 1864 by Arcalous Wyckoff, the impervious Wyckoff log pipe became a popular alternative to other materials and was advertised as cheaper, durable, leak proof, and safer. The Michigan Pipe Company acquired the Wyckoff patent in 1881 and became a major manufacturer of this technology, supplying mostly midwestern customers. Archival research and tree species identification determined that the Highlands log pipeline elements were manufactured in Michigan and installed between 1887 and 1891. This poster presents a timeline of Denver's water pipeline technologies, how the Highlands Wyckoff pipeline fits into Denver's archaeological record, and offers an overview of potential creative mitigation approaches to share the story of this artifact of early Denver.

Mueller, Rachel (University of Missouri, Columbia), Todd VanPool (University of Missouri), and Christine VanPool (University of Missouri)

[236] *Comparison of Ground Stone Zoomorphic Effigies at Paquimé to Local Rock Art and Ceramics*

This project presents the comparison of ground stone effigies from Paquimé, Chihuahua, Mexico, to ceramic effigies and rock art of the same region. Paquimé was the center of the Medio period (AD 1200–1450) occupation of the Casas Grandes region. These effigies are small figurines ground to resemble animals. Our analysis, based on Di Peso's (1974) report of his excavations at Paquimé, indicate that the ground stone effigies depict different animals than those depicted in rock art and ceramics. The ground stone effigies often depict bears and mountain lions, and the ceramics often depict snakes, owls, and other birds. The context and form of these effigies are consistent with ethnographically documented use of similar effigies among the historic and modern Southwest Native American cultures in which males primarily used these effigies for healing and hunting rituals. In contrast, the ceramic effigies appear to emphasize animals that are significant to the larger integrative religious system.

Mukhtarov, Gayratkhon [332] see Kot, Malgorzata

Mulchrone, Kathleen [188] see Kowalewski, Stephen

Mullins, Patrick (Washington College), Amedeo Sghinolfi, Dana Bardolph (Northern Illinois University), Sintia Santisteban, and Elvis Monzón

[189] *Ancient Landscapes of Carabamba, Peru: The 2024 Summer Field Season of the Carabamba Archaeological Research Project (CARP)*

From May to August 2024, members of the Carabamba Archaeological Research Project (CARP) conducted drone surveys and surface collections at the five largest ancient settlements in the Carabamba Plateau of northern Peru (Cerro Sulcha, Cerro Shamana, Cerro Cuidista, Cerro Paredones-Amarro, and Cerro Quinga). Surface collections at these settlements produced ceramic materials that indicate long occupations, spanning the Initial period (~1800–900 BCE) to the Late Horizon (~1470s–1532 CE). These settlements also feature lithic materials that point to a variety of domestic activities, such as digging implements for cultivation and scrapers for hide and meat processing, along with finished quartz and other debitage. The aerial drone maps of these settlements provide more detail on the nature of the occupations themselves, allowing us to identify a variety of features including large perimeter walls, corrals, domestic patio terrace groups, platform mounds, and water reservoirs and aqueducts. These data point to deep and complex histories of human settlement in the Carabamba Plateau that can be further explored through excavation, settlements that were shaped by exchange, migration, agropastoralism, and imperial expansion.

Mullins, Patrick [195] see Amber, Annalisa

Mullins, Tyler, Morgan Smith, Boris Belinskiy, Chris Cox, and Carla Adamson

[345] *On the Resonant Signatures of Archaeological Materials: Beyond Lithics*

In the last decade, several articles have detailed the possibility of identifying archaeological sites containing lithics remotely using acoustic resonance. However, limited research has been conducted into understanding resonant signatures of other archaeological materials. Resonant signatures of materials that may also be found on submerged landscapes, such as glass, historic ceramics, fossilized bone, wood, shell, and others have yet to be assessed. This paper discusses laboratory and modeling trials, conducted in the Geoarchaeology and Submerged Landscapes Lab at the University of Tennessee, Chattanooga, on the resonant signatures of these materials as confounding variables in the use of lithic resonance for finding archaeological sites underwater.

Mumary Farto, Pablo [303] see Izquierdo, Ana Luisa

Munene, James (University of Michigan, Ann Arbor), Brian Stewart (University of Michigan, Ann Arbor), Stanley Ambrose (University of Michigan, Ann Arbor), Nick Blegen (Texas A&M University, San Antonio), and Jeffrey Ferguson (University of Missouri)

[69] *The Ecological Context of Modern Human Evolution in Central Rift Valley, Kenya, during the Late Quaternary*

Tracking the processes by which *Homo sapiens* acquired our broad ecological niche is key to understanding the evolution of modern human behavior. Modern behaviors include enhanced adaptive technological flexibility, expansion of social interaction and exchange networks, and intensification of symbolic behavior. This project seeks to improve our understanding of the ecological contexts of modern human evolution in the Central Rift Valley, Kenya, by testing hypotheses about whether and how changes in Middle Stone Age lithic technology, ranging patterns, and social connectivity articulate with environmental changes during the Late Quaternary. Four sites with multiple Middle Stone Age occupation horizons and stratified volcanic ashes, paleosols and lacustrine sediments were excavated in the Lake Naivasha Basin. Approximately 9,000 lithic artifacts from seven occupation horizons have been analyzed. A chronostratigraphic history of the region has been developed through chemical fingerprinting of 35 volcanic ashes and $^{40}\text{Ar}/^{39}\text{Ar}$ dating. Obsidian sourcing studies were done using a portable handheld X-ray fluorescence (pXRF) machine while plant wax biomarkers ($\delta^{13}\text{C}_{\text{wax}}$) and carbonate nodules are being analyzed to reconstruct the paleoenvironment of the sites. Once completed, this study will contribute knowledge on whether and how environmental changes precipitated innovation during the behavioral evolution of our species.

Munkhtur, Uuriintuya [79] see Wolin, Daniela

Munoz Pando, Roberto (University of Puerto Rico; RGMP Archaeology)

[232] *Plenty Has Been Excavated, but Not All Has Been Studied: Using Archaeological Deposits for Academic Research*

While digging is an important part of archaeological research, deposits and archives have a very high investigative potential. In general, excavations have focused on a particular set of research questions put forth by the lead archaeologists. These questions, while valid, may not be all that the archaeological site has to offer. Archaeological deposits are full of materials that have not been revisited for years and may be studied from another perspective or using new and improved research methods and technologies. Our archaeological forefathers did their part, we must now do our part to fill in the gaps in their research using current available technology. My doctoral dissertation is an example of an archaeological academic work done solely by examining the artifacts already in an archaeological deposit. My dissertation was approved in 2023 in the University of Florida. This paper is meant to encourage academics to revisit deposits and archives to provide new insights on previous investigations.

Munro, Kimberly (New Mexico Highlands University)

[107] *Personhood of Place in the Central Andes: Syncretism and Subversive Landscapes at the Cosma Complex, Peru*

The Cosma Complex is a multicomponent center located in the upper Nepeña River Valley, Ancash Peru, western flank of the Cordillera Negra Mountains. Archaeological fieldwork over the past decade has documented repeated use throughout a 5,000-year occupation, with historic accounts establishing the founding of the contemporaneous community to the colonial era in 1714. Ethnographic work has also been conducted in conjunction with the excavations. This paper will cover the current interpretation of archaeological data in light of the ethnographic research, examining how the sacred, ancestral components of the basin, in concert with the natural and topographic elements may have empowered the people of Cosma to maintain a degree of autonomy against colonial forces. Moreover, this paper delves into the syncretic and anti-syncretic practices that structured the Catholic and Indigenous beliefs, based on the natural vs. colonial established spaces of ritual practice. This paper will underscore the importance of understanding local landscapes not merely as historical artifacts but as dynamic elements that shape and define the cultural and spiritual lives of the Cosma inhabitants today by offering a deeper appreciation of how landscapes and archaeological remains can structure the ways modern communities interact with their local worlds.

Munro, Natalie [65] see Betts, Chelsea

Munro, Natalie [56] see Cristiani, Emanuela

Munro, Natalie [82] see Lebenzon, Roxanne

Munson, Jessica

[166] *Recent Investigations at Altar de Sacrificios and the Surrounding Region: Settlement Patterns and Chronological Trends*

Although the site of Altar de Sacrificios was originally investigated during the first half of the twentieth century, it has largely been excluded from contemporary narratives about ancient Maya society. Recent research conducted by the Proyecto Arqueológico Altar de Sacrificios (PAALS) aims to reevaluate its role and contributions to interregional exchange, local production, and social interaction throughout the greater Maya world during the Preclassic and Classic periods. To this end, the PAALS has undertaken a regional settlement survey and household excavations in areas beyond the original Harvard study to better understand the political and economic changes that impacted this community from the Late Preclassic (ca. 300 BCE) to the end of the Classic period (ca. 900 CE). This introductory paper provides a brief historical overview of research at Altar de Sacrificios and presents results from our expanded regional survey of the Upper Usumacinta Zone (UUCZ) and refined chronology. A summary of the household excavations and associated remains offer diverse assemblages to examine domestic lifeways in this rural setting, which are explored in more detail throughout other papers in this session.

Munson, Jessica [166] see Scholnick, Jonathan

Murphy, Beau (University of New Mexico), Ryan Brucker (SWCA Environmental Consultants), Joseph Birkmann (UNM), and Thaddeus Liebert (SWCA)

[190] *Projectile Point Distributions and Cultural Implications in Eastern New Mexico: A Preliminary Examination of the SunZia Wind Dataset*

While our knowledge of cultural chronologies and spheres of interaction in the preceramic Southwest rely heavily on analyses of projectile point types, data remains sparse in many key areas. An archaeological survey recently completed for the SunZia Wind project—projected to be among the largest renewable energy arrays in the Western Hemisphere—by SWCA Environmental Consultants inventoried large swaths of land in eastern New Mexico’s Lincoln and Tarrant Counties, where Southern Plains geography becomes intermixed with tablelands outside of the spatial area of New Mexico’s more thoroughly studied lithic traditions. We present a preliminary overview of projectile points documented over the course of the project, with emphasis on their spatial patterning and implications for spheres of cultural activity, contextualized within the findings of other academic and CRM investigations in the region.

Murphy, Hanna [301] see Quinn, Colin

Murphy, Kaitlin (Texas Tech University)

[65] *Eternal Embers: Using Charcoal Analysis to Explore Ancient Maya Tree Use from Chan Chich, Belize*

This research project used scanning electron microscopy (SEM) to identify tree species of 33 charcoal samples from funerary and non-funerary contexts at the ancient Maya site of Chan Chich, Belize. To identify species, we compared SEM images of the plant structures in the charcoal to images from databases and other studies. We were able to identify over 10 different species of tree recovered from three burials, construction and debris fill, and artifact deposits, among other contexts. To look for patterns, we compared the identified species to their contexts. Our analysis reveals tentative patterns of usage from specific contexts, including the Sapotaceae family being the most common, followed by pine (*Pinus* sp.). We compared samples recovered from burial deposits to other ritual and non-ritual contexts and found there are species like pine used specifically in funerary and ritual contexts, while others do not show up in these contexts. This study expands our understanding of how the Precolumbian Maya used different tree species in specific activities and contexts.

Murphy, Morgan [123] see Oré Menéndez, Gabriela

Murphy, Reg [233] see Brown, Matthew

Murphy, Shambri (Chronicle Heritage)

[124] *A Statistical Analysis of Hohokam Pithouse Orientation*

This research investigates the archaeological record of major Hohokam villages in Arizona, including sites like Snaketown, La Plaza, and Las Acequias. Our approach involves statistical analysis to identify trends in the orientation of pithouse entrances. We aim to apply this knowledge to inform future archaeological investigations by furthering our understanding of the relationship of pithouse orientation to known factors. A pithouse entrance is a distinct space for entry that protrudes from the house, typically oriented toward a cardinal direction. The direction in which a house is built—specifically where the entryway extends—may be influenced by various factors, such as social organization, cultural practices, environmental conditions, and functional efficiency. In this study, we explore the relationship between these factors and the orientation of pithouse entryways. By compiling average percentages of each influence on pithouse orientation, we create a comprehensive dataset for further analysis. Our research will examine documented social organization at Hohokam sites to compile data which can be used to predict pithouse orientation based on known influences or, conversely, infer aspects of the environment or village setup from the orientation of a pithouse.

Murray, John (Arizona State University)

[281] *A Proposed Comparative Research Strategy to Investigate the Heat Treatment of Stone Raw Material in Northern and Southern Africa*

The heat treatment of stone is thought to be an important proxy for human cognition and social learning due

to the complex sequence of events that combines multiple unrelated processes and objects. As early as 162,000 years ago humans on the south coast of South Africa were heating a rock called silcrete to improve its quality for tool making. Current research in this area has shifted toward developing proxies for better understanding how Middle Stone Age (MSA) humans were conducting heat treatment and whether this varies across sources and over time. However, little research has been done to test whether contemporaneous *Homo sapiens* in northern Africa were also modifying their lithic raw materials with fire, despite the presence of local raw material that is responsive to heat treatment. Here, I aim to summarize the scholarship of heat treatment research in the MSA of South Africa and propose a potential research strategy to investigate lithic raw material heat treatment in northern Africa, particularly along the north coast. This will include a discussion of potential sites, raw materials, and areas of interest. This research has implications for human behavioral variability during the late Pleistocene and across Africa.

Murray, John [191] see Borges-Eckert, Samantha

Murray, John [299] see Hoelzel, Chloe

Musch, Abigail (Ohio State University), and Mark Hubbe (Ohio State University)

[186] *Literature Trends of NAGPRA*

Archaeology greatly contributed to the presence of Native American ancestral remains held in museum and university collections and recently has been engaged in discussions about the ethical engagement with these collections. An important step in this discussion is to consider how the NAGPRA law, which has been in effect for over 30 years, has been incorporated in the discipline's primary literature. This study aims to understand the trends in the literature regarding mentions of NAGPRA. Keyword searches were conducted using Web of Science to generate a database of articles that referenced the law in any way. The search was restricted to journal articles published between 1990 and 2023 and returned only 102 articles with direct mention to NAGPRA. Results show that few journal articles discussed NAGPRA before the 2010s. The journals aimed at general anthropology disciplines contained 21 articles, archaeology journals had 14 articles, biological anthropology journals had 8 articles, and museum studies journals had 22 articles. This initial result demonstrates that, despite its importance, NAGPRA has not been significantly incorporated in archaeological literature.

Myers, Cecilia [174] see Finch, Damien

Myers, Kelsey (US Army Corps of Engineers, Rock Island District)

[268] *Addressing Tribal Environmental Justice and Historic Preservation for Levee Infrastructure through Value-Added Geospatial Risk Analysis*

This study focuses on concerns for levees that tribal, state, and federal historic preservation staff have anecdotally observed but have not fully quantified. It was designed in direct response Tribal Historic Preservation Officers' concerns following flood events in the Mississippi River Valley in 2019. The research design was developed in coordination with staff at the US Army Corps of Engineers (USACE) Headquarters as well as the USACE Tribal Nations Technical Center for Expertise and completed under a detail assignment with the USACE Institute for Water Resources. The study addressed two problems: (1) USACE-authorized levees vary in their level of compliance with current historic preservation laws and, (2) consulting tribes who were removed historically from the jurisdictional area have never been provided the opportunity to review archaeological or other tribal cultural concerns on a systemic scale. The project delivers an indexed dataset of levees and a geospatial data layer which can be used to make the internal USACE review process more efficient and effective while supporting tribal sovereignty and co-management in preserving culturally significant sites.

Myerscough, Autumn (University of New Mexico)

[326] *Are They All Awls?*

Through conducting a microwear analysis, I argue that the use-wear of the bone tools examined will determine their functional use. The collection of bone tools for this study are from Chacoan (AD 850–1250) and various Mimbres (AD 200–1130) sites (located in the North American Southwest). Traditionally many

bone artifacts with narrow, pointed distal ends are defined as awls. Functionally, awls are generally defined as tools used to pierce holes in leather or other malleable substances. I argue that a detailed microwear analysis may suggest alternative uses of these types of bone tools beyond the narrow category of “awl.” Through this research, I encourage my audience to ask if it is proficient to define awls solely by their morphology (tools with a narrow, pointed distal end) despite these tools possibly having varying functions. Through a comparison of bone tools from both types of sites in the study area, I intend to demonstrate that these bone tools, commonly thought of as awls, may serve a variety of functions rather than the narrowly proscribed categories into which they are often sorted.

Nagaoka, Lisa (University of North Texas)

[173] *Exploring Niche Construction Theory*

Niche construction theory (NCT) has become an interesting evolutionary mechanism for archaeologists interested in understanding human-environment interactions. The idea that humans’ penchant for environmental modification could be understood from an evolutionary model is compelling. However, there has been much discussion and debate about the role and value of NCT. Is NCT a complementary or alternative approach to human behavioral ecology? Are the products evolutionary and scientific, or do they simply produce tautological stories? While some of the conflict lies in ontological differences between anthropological and scientific explanations, many researchers are earnestly trying to understand how best to study the evolutionary processes related to human modification of the environment. In this paper, I explore some of these sticking points of NCT, including the processes involved that link niche construction to fitness, the scales at which it can be applied, and the archaeological measures used.

Nagy, Balázs [31] see Gyucha, Attila

Nagy, Iman (UCLA)

[291] *Rethinking the Function of Rock Inscriptions, from Northeast Africa to Southeast Asia*

Cross-cultural comparative rock art research that incorporates local perspectives is scarce. This research is a reflection of fieldwork conducted at two sacred sites in two culturally distinct regions, in Northeast Africa and Southeast Asia, where the practice of communion with rock faces has persisted through time. These regions, though culturally and geographically distinct, both contain places associated with sacred landscapes where local people practice traditions passed down through ancestors—representing the persistence of cultural continuity. Traditional rock art research tends to hyper-focus on technical aspects or regional distributions of motifs. This research examines how the cross-cultural observance of contemporary traditions can inform rock art research beyond technical frameworks, elucidating how interaction with rock faces persists over time and how local traditions retain knowledge of landscapes in cultural memory. Utilizing Indigenous knowledges through collaborative research in both regions, coupled with multispectral imaging and remote sensing analysis, my doctoral research seeks to develop a praxis that incorporates local knowledge systems with archaeological research design. I utilize a tripartite methodology that incorporates traditional rock art methods, landscape archaeology, and Indigenous ontologies in order to conduct a holistic, inclusive analysis.

Nair, Arvind (Ohio State University), and Robert Cook (Ohio State University)

[85] *A Serpent Runs through It: Toward an Interpretation of the Curvilinear Guilloche Design of the Fort Ancient Culture in Southwest Ohio*

The curvilinear guilloche design on pottery necks is one of the key criteria that has served to define the Fort Ancient culture in the Great Miami Valley of southwest Ohio. Yet, surprisingly, no one has attempted to fully interpret its meaning. Here we take a holistic approach to understanding the symbolic meaning of this design, beginning with foundational literature review assessing the global interpretations behind the meaning of similar design forms. The second portion of our research summarizes an ethnographic literature review of descendant and closely related tribes with ties to the US Southeast—particularly Central Algonquin and Dhegiha Siouan speakers—with a special focus on associations between similar designs and cosmology. The third portion of our project incorporates specific aspects of the landscape along this river drainage to explore the relationship between the potential meanings with specific aspects of nearby rivers and topographical features.

Nakagawa, Nagisa, Daniel Morales Chocano (Universidad Nacional Mayor de San Marcos), and Yuji Seki (National Museum of Ethnology)

[282] *El festín y los muertos: Encontrar dos rituales en la sociedad estratificada*

En esta ponencia, se muestran dos contextos del Periodo Formativo en el sitio arqueológico de Pacopampa: uno de festín y otro de los entierros en la Tercera Plataforma. Basado en los datos arqueológicos, se discutirá la relación entre el festín y el rito relacionado con los muertos en el sitio. El sitio fue utilizado en dos fases: PC-I (1200-700 BC) y PC-II (700-400 BC). La mayoría de los entierros pertenece a PC-II y su ubicación se concentra alrededor del Patio Hundido, en cual se celebraron festines tres veces. Se supone que la realización del primer festín fue relacionada con la instalación de la tumba. En esta presentación se enfocará el análisis de cerámica, la cual es uno de los vestigios de los festines, así como la ofrenda en las tumbas, y se presentará su cambio diacrónico durante los festines el cual se relaciona con la modificación del poder de los líderes que dirigieron los rituales.

Nakazawa, Yuichi, Akira Iwase, Fumito Akai (Hokkaido University), and Masami Izuho (Tokyo Metropolitan University)

[292] *Stone Tool Cache on the Landscape: A Study of the Tomamu-Daichi Cache in Hokkaido, Japan*

A stone-tool cache isolated on a given landscape raises the question as to why hunter-gatherers cached stone tools in a specific location on the given landscape and the extent to which they were transported between a manufactured place (e.g., lithic raw material outcrop) and a location of cache. In this paper, we will summarize recent advancement of the study of the Tomamu-Daichi (T-D) cache, an accidentally found late Upper Paleolithic stone-tool cache unassociated with lithic scatters in eastern Hokkaido (Japan). Based on morphometric observations on the cached tools consisting of bifaces, bifacial projectile points, and blades, we will test predictions on the relationship between utility and transportation cost of stone tools, notably bifaces. Given its comparative nature to the prominent bifacial technology and stone-tool caches in the terminal Pleistocene North American record (i.e., the Clovis complex), results of analysis on the T-D cache will give an insight into the organization of bifacial technology in relation to hunter-gatherers' decision-making regarding mobility and tool curation not only in the regional context but also in the broader context of the hunter-gatherer societies along the northern Pacific.

Nakhai, Beth Alpert (University of Arizona)

[119] *Molly Crowfoot and Elizabeth Crowfoot: Pioneers in Textile Archaeology*

This presentation focuses on Grace Mary Hood Crowfoot (Molly; 1877–1957), whose groundbreaking work was foundational in the field of textile archaeology, and on her daughter Elisabeth Grace Crowfoot (1914–2005). Wife of renowned British archaeologist John Winter Crowfoot, Molly trained as a midwife and became a self-taught ethnographer, archaeologist, ceramic specialist, illustrator, and social advocate. She learned textile production from women she lived and worked with in East Africa and the Levant in the first half of the twentieth century, and she applied her knowledge to the study of ancient textiles. Molly conceptualized new methodologies for studying ancient yarns and fabrics. Utilizing ethnographic comparanda that she collected during her decades in Egypt, Sudan, Palestine, and Transjordan, she published articles treating embroidery, mat making, tent making, spinning, weaving, looms, and tools. Molly reconstructed ancient textile traditions, and preserved knowledge about traditions at risk in the twentieth century. Elisabeth joined her mother in her work on textiles and went on to build her own international reputation, producing more than a hundred publications. This presentation highlights the innovative work done by Molly and Elisabeth, both of whom were instrumental in conceptualizing and developing the field of textile archaeology.

Namen, Abay (Nazarbayev University), Emily Coco (Yale University), Aristeidis Varis, Zhaken Taimagambetov (National Museum of Kazakhstan), and Radu Iovita (New York University)

[332] *Late Upper Paleolithic Evidence of Human Settlement in the Northern Tian Shan (Kazakhstan): New Results from Tikeneki 2*

The northern foothills of the Tian Shan mountains have emerged as a focal point for studying human dispersals and adaptations to climatic changes during the Late Pleistocene. In addition to sites at Maibulq and Rahat, several stratified Paleolithic sites have been discovered, contributing to the discussion on human occupation in the mountainous zones. In this work, we present the results of the latest archaeological

investigations at the site of Tikenekti-2. Excavations conducted in 2024 have identified a cultural layer spanning a meter in thickness, suggesting recurrent human habitation during 10–13 ka BP. Archaeological finds include a diverse array of lithic artifacts, faunal remains, fragments of bones with cut marks, and a combustion feature, shedding light on the adaptive strategies of hunter-gatherers in mid-altitude environments. Additionally, two test pits and one test trench have been excavated along the slope to assess the presence of older cultural remains. Among the three, a test trench measuring 5 × 1 m was excavated to a depth of 3 m and yielded three archaeological layers. In total, over 100 lithic artifacts and several bone fragments were recovered. The assemblage is predominantly composed of large blades and prismatic cores, demonstrating typological differences from the main excavation.

Namen, Abay [332] see Borsodi, Sara

Napora, Katharine (Florida Atlantic University), Tricia Meredith (Florida Atlantic University), Katherine Hendrickson (Florida Atlantic University Lab Schools), Sara Ayers-Rigsby (Florida Public Archaeology Network; Florida Atlantic University), and Lauren Simonitis (Florida Atlantic University)

[99] *Developing Interdisciplinary Climate-Change Education via Experiential Archaeology Learning: A Collaborative Case Study from Southeast Florida*

Archaeology is an ideal discipline by which to introduce students to integrated humanistic and scientific analyses, including those focused on studying the cultural responses regarding, and the modern impacts of, climate change. Here, we discuss the development of an experiential educational archaeological excavation unit at Florida Atlantic University (FAU) Lab Schools in Boca Raton, Florida, a collaborative effort by K–12 and college researcher-educators, Bureau of Land Management experts, and specialists in archaeology, marine biology, engineering, and other fields. The educational unit replicates aspects of a major multiphase archaeological site in Jupiter, Florida, that is highly at-risk of, and in mitigation for, coastal erosion. We aim to expand hands-on learning opportunities to a range of area schools, museums, and other educational venues.

Narganes Storde, Yvonne M. [99] see Wu, Nikki

Narvaez, Jose [195] see Mesia-Montenegro, Christian

Narvaez, Jose [334] see Sanchez-Borjas, Angel

Nash, Brendan (University of Michigan)

[277] *Diverse Technologies at the South Gap Site (20AA232): A 9,000-Year-Old Caribou Hunting Site in Lake Huron*

The South Gap site (20AA232) is a hunting location most likely for targeting caribou ~55 km offshore from mainland Michigan on the Alpena-Amberley Ridge. The site features a sinuous esker that runs north–south and serves as a natural drive line that channeled migrating caribou along a predictable route through the site. Hunters utilizing the site built a series of constructed stone hunting blinds and a drive lane from local materials along this path to effectively create a hunting complex that could be used seasonally. Recovered in association with the constructed features is a small assemblage of stone tools that were used for hunting and subsequent animal processing, confirming the function of the site as a hunting location. The assemblage includes evidence for a diverse set of technologies that are not commonly found together in the Great Lakes region. This includes evidence for bifacial tools, microblades made with a bipolar reduction method, expedient scrapers, and potentially net sinkers. Terrestrial analogies for both constructed hunting features observed at South Gap and the diverse tool assemblage can be found to the northwest in the foothills of the Coastal Range and Interior Plains of Canada.

Nash, Carole (James Madison University)

[99] *Collapsing Spurious Distinctions between Science and Service in Archaeological Climate-Change Work*

The future of American archaeology demands that practitioners identify the distinction between scientific scholarship and service as not only spurious but harmful to our discipline. The academic luxury of privileging scholarship as the driver of disciplinary progress undermines the value of the everyday work, denigrated as “service,” that is involved in addressing the impacts of climate change on heritage resources and engaging

with the communities they represent. From changing our teaching content and methods, to seeking nontraditional research partnerships, to building networks across disciplines, to organizing community-based events, archaeologists are finding that their efforts at integrating expertise and outreach around climate change are building a new practice, one that enhances the relevance of the discipline. These points are illustrated in a case study from the Virginia Blue Ridge, where a Section 106 mitigation project undertaken by the author and her students was interrupted by catastrophic storms and flooding in 2018. While technical reports and scholarly outputs were completed, the lasting impacts of the project are associated with work that raised the profile of climate change (and archaeology) in the local community and with National Park Service managers. Sometimes finding a seat at the table requires that you build the table.

Nash, Donna (Arizona State University)

[380] *Burying Buildings: Ritual Closure as Mortuary Practice (or Not) in the Ancient Andes?*

Ritual closures, temple interments, and construction offerings are a common occurrence in the prehispanic Andes region of South America. This practice became more elaborate over time, and societies selected a wide range of goods for inclusion as offerings, which in some cases included human sacrifices or were accompanied by ancestral remains. Given the diversity of this long-lived tradition, such patterned practices and the resulting ritual deposits can offer a means to track the movement of people and interactions between groups. Seemingly broad ontological understandings of the relations between people, landscape features, and crafted objects, including buildings, may have dictated that some of these entities be treated as people. In this paper, I explore the features of ritual closure traditions among societies of the south-central Andes, who flourished during the first millennium CE to assess the commonalities and differences between groups and the relationship of ritual closure events to mortuary practices. Some buildings seem to be buried because they were burial chambers, whereas others may have required burial because the house or temple was itself laid to rest as a once “living” member of the group. ***This presentation will include images of human remains.

Nash, Stephen (Archaeology Southwest)

[375] *Historically Contingent: Case Studies in the Interpretation of Tree-Ring Date Distributions*

After 95 years of archaeological tree-ring dating in the American Southwest, there are now tens of thousands of tree-ring dates with which scholars can guide their analyses. When dealing with randomly distributed datasets, large sample sizes can mean more reliable statistical inferences. When dealing with spatially, temporally, and historically biased tree-ring datasets, large sample sizes do not (necessarily) mean more reliable inferences. This presentation offers a series of dendroarchaeological case studies to demonstrate that historical and contextual data are essential, indeed critical, to making defensible interpretations about the past based on archaeological tree-ring dates and date distributions.

Natsuki, Daigo [292] see Iizuka, Fumie

Naudinot, Nicolas (Muséum National d'Histoire Naturelle), Morgan Smith, Olivia Hulot, and Alexis Rochat (DRASSM)

[345] *In Search of Submerged Late Glacial Prehistoric Coastal Occupations in the Western Channel: The Contribution of Acoustic Detection of Flint Assemblages*

Research into Late Glacial communities in western France has made great progress in the last 20 years. In addition to being able to characterize the technical and symbolic systems of the various prehistoric communities that succeeded one another during this period of profound climatic instability, the data collected today also enable us to begin sketching out socioeconomic models from a diachronic perspective. These models, however, remain largely biased by the absence of data on maritime environments and coastal sites, which are now submerged by dozens of meters of water due to a shallowly sloping continental shelf in the English Channel and along the French Atlantic seaboard. It is therefore imperative to take into account these sites and their place in the systems. The aim of this presentation is to present a project currently being envisioned that aims to initiate a multistage, submerged landscape campaign in French territorial waters in the Western Channel. Here we review bathymetric data of the study area to identify areas of high potential, with subsequent stages using acoustic site detection methods, sediment coring, and ROV site investigation out to the 100 m bathymetric line.

Naudinot, Nicolas [345] see Marguet, Louis

Nava Esparza, Andrea (Universidad Autónoma de San Luis Potosí)

[290] *Resultados preliminares del proyecto Rio Verde 2022 y 2024, Operación B: Usos y ritualización del espacio*
En Mesoamérica durante los períodos del Clásico y Posclásico existió una época de cambios ecológicos y antropogénicos, los cuales derivaron en conflictos internos en las sociedades y los grupos que las componían. Rio Viejo localizado en la costa Oaxaqueña, es un ejemplo de los cambios existentes entre ambos períodos. Específicamente nos enfocaremos en los hallazgos realizados durante las temporadas de excavación de 2022 y 2024 en la Operación B. Esta se dedicó a contextos domésticos en plataformas bajas residenciales. Entre ambos espacios estudiados se apreció una diferenciación interna en el uso del espacio, así como en los contextos identificados; dichos marcadores diferenciales se observaron mayormente en las actividades de ritualización que indicaban el final de una etapa y que se vieron representados a partir de la colocación de depósitos de terminación, esto durante la transición entre los períodos. Además las diferencias entre áreas se ven representadas por la existencia de hornos y fogones de grandes dimensiones, que varían en su forma, construcción y materiales recolectados, pero que fueron utilizados de manera comunal y para la realización de festines, en algunos casos resultando en la presencia de basureros.

Nava-Sánchez, Enrique [345] see Robles-Montes, Mayra

Navarro, Nadine

[57] *The Blue Canyon Site, a Clovis Quarry and Camp in Central New Mexico*
Opportunities to learn more about Clovis technological behavior at lithic material procurement and workshop sites are rare, particularly in the Southwest. The Blue Canyon site is a rare example of such a site—an artifact scatter covering some 16,000 m² and consisting of Clovis projectile points and preforms, end scrapers, bifaces, and lithic debitage located on BLM land southwest of Socorro, New Mexico. Remarkably, the site contains only Clovis diagnostics. Testing has revealed that the scatter is exposed on the surface of and slightly buried within an alluvial fan situated at the base of the Black Canyon quarry, a source of hydrothermally altered rhyolite commonly known as Socorro Jasper, which comprises over 95% of the total artifact assemblage. The most abundant nonlocal material is obsidian, occurring in the form of small debitage and cores, which has been geochemically characterized and sheds light on Clovis lithic procurement strategy as well as procurement range. This artifact assemblage suggests that both tool manufacture and replacement, as well as domestic tasks, occurred here.

Navarro-Farr, Olivia [226] see Berenson, Sydney

Navarro-Farr, Olivia [85] see Knutson, Teagan

Navarro-Farr, Olivia [323] see McMahon, Henry

Navarro-Farr, Olivia [85] see Smith, Desiree

Navarro Genie, Rigoberto [190] see Rojas, Jean-Paul

Navas-Méndez, Ana

[293] *Challenging the Tales of Extinction: Natives in Historical Representations and the Analysis of Panama Viejo Ceramic Collections*

In this paper, I discuss the process of conducting decolonial research to make visible the contribution of non-European groups in the construction of colonial Panama. In general, archaeologists have researched Spanish settlements in the Caribbean and Pacific coasts, focusing mostly on the restoration and preservation of archaeological sites and examining the Spanish way of living, as well as European materiality. In these contexts, historical narratives tend to present the extinction or assimilation of native communities and the success of the Spanish economic expansion. This abrupt interruption of natives' lives is also implicitly represented in the archaeological gap between precolumbian and colonial Panama. Contrary to this approach, I bring forward the agency of non-European groups through the analysis of production and distribution of ceramics. Compositional and technological analysis through neutron activation and petrographic methods of 192 sherds from Central and Eastern Panama inform the recipes and techniques used for ceramic production

during the precolumbian and colonial periods. Rather than disappearance and replacement, the results show the configuration of new communities of practice for pottery production. The analysis contributes to creating an alternative narrative to include diverse descendants of colonialism.

Navruzbekov, Masnav [160] see Alekseitseva, Valentina

Naya, Michelle [378] see Bernard, Henri

Ndiema, Emmanuel [63] see Grillo, Katherine

Nebbia, Marco (University College London)

[341] *Computational Approaches to a Sustainable Heritage Management of Central Asian Archaeological Landscapes*

The Central Asian Archaeological Landscape (CAAL) project is building a geospatial inventory of archaeological resources for Central Asia. CAAL is developing a two-platform system that addresses the needs of end users. The graph database Arches platform, developed by the Getty Conservation Institute, is being employed for its powerful semantic search engine and multilingual capabilities, while an object-based relational PostGIS database is implemented because of its analytical functionalities and interoperability with other software packages. In this paper, we present the challenges and the technical solutions adopted within a landscape-oriented site recording system that would hold in a single framework the complexity of both the archaeological record and of the archaeological data. The project deals with data coming from six national inventories, several national and international research projects, digitized archival materials, born-digital datasets (e.g., multiscalar UAV outputs), remote sensing mapping, and field survey data. This paper will focus on how the site-centric concept of site can be scaled up to a landscape perspective within a heritage management environment where the multidisciplinary and multivocality of different actors and stakeholders needs to be integrated into a single working framework for archaeological research and heritage legislation.

Needham, Andrew [42] see Hampton, Helen

Neff, Hector (California State University, Long Beach), Chad Rankle (UC San Diego), Humberto Leon Obando (Alcaldia de Managua), Edgar Espinoza (Alcaldia de Managua), and Heather Thakar (Texas A&M University)

[289] *Agricultural Intensification in Another Mesoamerican Lake Basin: Recent Evidence from Pacific Nicaragua*

Deborah Nichols explored the relationship between subsistence, especially agriculture, and changing modes of settlement and social organization throughout her career. For the most part, her contributions on these topics focused on the Basin of Mexico, where early inhabitants clustered along the shores of shallow lakes, taking advantage of resources of the lakes, lakeshore, and adjacent uplands. Archaic period exploitation of wild resources eventually gave way to lake-margin farming, which intensified during Early through Late Formative times. Another large lake basin, that of Lake Xolotlan and Lake Cocibolca, in modern Nicaragua, has not been investigated as intensively as the Basin of Mexico, but recent research shows surprisingly early evidence of maize, continuous lake margin farming during Early and Middle Formative times, and creation of black earth anthrosols for maize, cotton, and probably other crops on the slopes south of Lake Xolotlan. A symposium honoring Deborah Nichols's contributions seems an appropriate venue to present some of these recent results.

Neff, Nadia [36] see Cerezo-Román, Jessica

Neff, Nadia [320] see Tierney, Citlali

Neff, Nadia [320] see Warner, Monica

Negrino, Fabio (University of Genoa), and Julien Riel-Salvatore (Université de Montréal)

[384] *On the Western Edge of Italy: The Site of Riparo Bombrini in the Frame of Early Upper Paleolithic in Italy*

The Riparo Bombrini site is located in the famous Balzi Rossi archaeological area in western Liguria. The site has preserved cultural remains from the Proto-Aurignacian and Classical Aurignacian periods, dating from about 42,000 to 33,000 years ago. The Proto-Aurignacian level testifies to the earliest presence of AMHs in

north-western Italy, thanks to the discovery of a deciduous human tooth. An erosive event separates the units containing remains of the Late Mousterian from the overlying Early Upper Paleolithic. The dates obtained so far, together with the twin sequence from the nearby Riparo Mochi sequence, indicate a possible earliest appearance of the Proto-Aurignacian in this part of Italy. However, the persistence of Mousterian aspects in this area raises questions about the relationship with the Uluzzian documented in northeastern Italy and along the peninsula. It is indeed possible that the latter reached the peninsula from the east and then spread along the great Adriatic plain, whereas the Proto-Aurignacian was a western phenomenon. The site in question is particularly well placed to test this model in the wider context of the Early Italian Upper Paleolithic, as it lies at the western gateway to Italy, on a crucial passage between the Alps and the sea.

Negrino, Fabio [384] see Falcucci, Armando

Negrino, Fabio [384] see Gazzo, Silvia

Neis, Cindy (University of Regina)

[90] *Identifying and Contextualizing Metis, Non-woven (Leather, Bark Cloth, Embroidery) Fiber, and Perishable Processing Technologies in Archaeological Collections Held at the Royal Saskatchewan Museum*

Most archaeological records lack detailed chronologies of fiber and perishable technologies and material types. These artifacts include but are not limited to leather, textiles, and yarns and have been identified as an essential part of the tool kit of Canada's earliest inhabitants. This research will comprise macroscopic and microscopic examination and characterization of non-woven, fiber, and perishable artifacts and their production tools from Metis sites held in the Royal Saskatchewan Museum collection. This work will be supplemented by ethnographic and historiographic research on documented production techniques and with input from Metis community members who still hold traditional knowledge. Archaeological analysis will provide an understanding of the technological foundation of fiber and perishables in the past, while ethnographic research provides current cultural and traditional knowledge, to help us better understand the Metis communities living at these sites.

Nelson, Elizabeth (Southern Methodist University), Nasreen Broomandkhoshbacht (UCSC Paleogenomics, University of California), Eduardo Amorim (California State University, North Ridge), Jane Buikstra (Arizona State University), and Lars Fehren-Schmitz (UCSC)

[316] *Genomic Analysis of a 5,500-Year-Old Case of Treponematosi from Sabana de Bogotá*

The geographic origin, evolution, and spread of treponemal diseases remain highly debated. *Treponema pallidum* subspecies, responsible for modern treponemal diseases, were once believed to be linked to specific clinical manifestations and environmental contexts. However, recent genomic studies have revised this perspective by providing new insights into their evolutionary history and phylogeographic presence. In this study, we present a 5,500-year-old *Treponema pallidum*-like pathogen genome recovered from an individual from a hunter-gatherer community in Sabana de Bogotá, Colombia. This genome, with 1.7-fold coverage, is the oldest reconstructed *Treponema* genome to date and offers the first prehispanic genomic characterization from this region. Our findings expand the dataset of treponemal pathogens by millennia and enhance understanding of past treponematosi. Phylogenomic analysis shows that this pathogen is a basal lineage to all known *Treponema pallidum* subspecies, including ancient strains. Integrating these genomic data with archaeological and paleopathological evidence sheds light on mid-Holocene treponemal diseases in the Americas and the ecological and environmental drivers of pathogen evolution. This research highlights the value of combining genetic, archaeological, and paleopathological evidence to explore the diverse contexts in which treponemal diseases evolved and persisted.

Nelson, Erin [66] see Torvinen, Andrea

Nelson, Fox

[125] *You Are What You Wear: A Comparison of Hide Use in the Archaeological and Ethnographic Record of the Wyoming Basin*

What we wear, and why we choose to wear it, is a visual representation of our identity. Clothing in an anthropological context has been explored heavily in cultural anthropology; however, due to many issues

revolving around preservation, clothing is rarely found in archaeological contexts. In cold and dry environments such as those in the Wyoming Basin this is especially true due to its extreme environmental conditions. Some research has delved into the cultural significance of clothing in the past, but it usually stems from ethnographic examples of clothing. By incorporating ethnographic uses of different species for hide use and comparing this to species represented in the archaeological record, we can look at clothing in the archaeological record indirectly. This research will compare the species proportionally represented in a sample of Late Archaic sites in the Wyoming Basin and those same species used for clothing among ethnographic groups in high latitude environments. This will allow me to identify correlations between the archaeological and ethnographic record and to see what factors influence clothing choice.

Nelson, Zachary (Bureau of Reclamation), and Travis Clark (Utah Valley University)

[95] *Reclamation's Dam Legacy*

The Bureau of Reclamation was charged with "reclaiming the West" from its arid condition. As the organization tasked with water management, Reclamation constructed thousands of miles of canals, stretched like arteries across the arid landscape. At each center lies a dam. Dams are engineering marvels, environmental disturbances, and cultural heritage. This paper explores the ramifications of Reclamation's dam legacy, with a focus on Glen Canyon Dam and the Upper Colorado Basin.

Nesbitt, Jason (Tulane University)

[282] *Energetics Approaches to Early Ceremonial Centers in Highland Peru (1000–500 BCE)*

The late second millennium BCE is characterized by the appearance of several major highland civic-ceremonial centers including Chavín de Huántar, Canchas Uckro, Pacopampa, Kuntur Wasi, Atalla, and Campanayuq Rumi, among others. While the inhabitants of these centers interacted with one another, the architecture that characterized these sites varied in meaningful ways. One way that these differences can be empirically studied is through determining the labor invested in their construction. In this presentation, I present energetics calculations of the monumental architecture of Pacopampa and compare it with other highland centers to arrive at new interpretations of variations in sociopolitical organization for the period between ca. 1000 and 500 BCE.

Nesbitt, Jason [46] see Clasby, Ryan

Nesbitt, Jason [191] see Sjodahl, Julia

Neto, Camilo [121] see Correa, Leticia

Neubauer, Fernanda

[234] *Identifying Stone Boiling Cooking at Featureless Sites*

The process of stone boiling involves heating rocks in or near a fire until they have reached an optimal temperature and then transferring them into a water-tight vessel, container, or pit containing liquid, thus cooking foods via wet heat. Unlike the direct heating of a ceramic vessel over a fire, the stone-boiling container is not placed on a heating element, so water alone is the heat transfer medium that cooks foods from all sides by means of agitation. Wet cooking expanded the range of edible plant foods available to ancient peoples by increasing the availability and digestibility of starches beyond what may be achieved by roasting or baking. Archaeological evidence of stone boiling can be challenging to identify because often the only diagnostic residue that remains is fire-cracked rock (FCR). FCR created during experimental stone boiling typically display discernible fracturing pattern signatures and use-alteration modifications. As a case study of the signatures of stone boiling in the archaeological record at featureless sites, this paper discusses the archaeological evidence at a Late Archaic hunter-gatherer site on Grand Island, Michigan. At Site 913, FCR was recovered in midden accumulations primarily as a result of the stone-boiling technique, perhaps for nut oil rendering.

Neuhoff-Malorzo, Patricia [52] see Adam, Manda

Neves, Eduardo [172] see Kater, Thiago

Newhall, Victoria**[346]** *Cultivating Inclusivity: Mentorship, Diversity, and Career Development in Archaeology*

This presentation explores the intersection of mentorship, diversity, and career development in archaeology, drawing on my experiences as a nontraditional PhD student, graduate director, and undergraduate mentor in UCLA's Archaeology Mentorship Program (AMP), as well as my role as the upcoming public outreach coordinator at the Cotsen Institute of Archaeology (CIOA). Building on key findings from my undergraduate senior thesis, "Diversity in UCSB Undergraduate Anthropology and Impacts on Future Career Choices," I will examine how diverse representation among undergraduates shapes their career aspirations in archaeology. By sharing personal experiences and insights from the students, and other graduate student mentors, this paper highlights the critical role mentorship plays in fostering inclusivity and expanding career opportunities in archaeology. Moreover, new departmental efforts under the direction of Dr. Jason De León at CIOA aim to enhance public engagement and outreach to further support diverse participation in archaeological research and practice.

Newsom, Bonnie [224] see Olson, Olivia

Newsome, Seth [288] see Dombrosky, Jonathan

Newton, Matthew [345] see Cook Hale, Jessica

Ng, Laura (Grinnell College)**[346]** *Training Community-Engaged Undergraduates in the Archaeology Lab and Field at a Small Liberal Arts College*

As a teacher-scholar, one of my main goals is to train the next generation of community-engaged scholars. Mentoring undergraduate students at a small liberal arts college (SLAC), however, has unique challenges in comparison to research universities when it comes to funding research labs and fieldwork. Archaeology labs at SLACs are typically smaller, field opportunities are not offered regularly, and students do not have access to built-in networks of MA or PhD archaeology students. In this paper, I discuss how I leverage personal networks and resources at my SLAC to provide archaeological research opportunities to undergraduate students, how I approach teaching community-engaged lab and field work, and some of the challenges that I and other women of color face in recruiting and training undergraduates in archaeology. The goal of my mentoring approach is to create a more inclusive archaeology and ultimately to diversify the pool of practicing archaeologists and the archaeology professoriate.

Ngọc Hân, Lê [61] see Iannone, Gyles

Ngọc Hân, Lê [61] see Macrae, Scott

Nguyen Thi, Hao [61] see Iannone, Gyles

Nguyen Thi, Hao [61] see Macrae, Scott

Ni, Jenny**[112]** *Biographic Rock Art on the Southern Plains and Politics through Equestrian Imagery*

Plains Biographic Tradition rock art, through recording the military exploits of Plains warriors and associated historical events, was an important method of earning prestige and political influence in Plains cultures. As it developed alongside the increasing integration of equine pastoralism, the Plains Biographic Tradition offers an opportunity to consider the impact of the horse on the political practices of Plains peoples. In this paper, I offer preliminary analysis on Biographic rock art imagery in the context of the political practices of Southern Plains equestrian peoples, tracking developments through the eighteenth and nineteenth centuries. I focus on the impacts of Southern Plains equine pastoralism, especially increased mobility, on how politics were conducted as represented by visual culture.

Nials, Fred (Independent Researcher), and Winston Hurst**[55]** *Another Step Forward: What We Didn't See Before Lidar*

A distinctive system of terrain modification consisting of large areas of near-invisible, widely spaced, quasi-

parallel linear ridges (berms) was first identified by Hurst and Willian in 2014 during archaeological survey. Despite an apparent association with a Puebloan road and great house, questions about the age and origin of the originally discovered berms led to additional examination of remote sensing and historical data. Subsequent examination of lidar imagery released in 2020 has conclusively demonstrated a prehistoric origin and has verified the existence of almost 6,000 km² (60 mi²) of mesatop berm-and-swale topography in Utah, Colorado, and New Mexico. It now appears that it once may have been more than double this extent. Imagery analysis has further identified hundreds of kilometers of associated roads and ritual features. Berm-and-swale topography appears to represent a sophisticated multifaceted approach to enhance agricultural success in a marginal environment, although some features have yet to be explained. Further releases of lidar imagery in 2024 in a more varied topographic setting gives additional insight into the role of topographic position and runoff from berm-and-swale features in field placement.

Nicholas, Joel [43] see Altaha, Mark
Nicholas, Joel [298] see Solometo, Julie

Nicholas, Linda [44] see Underhill, Anne

Nichols, Johanna (University of California, Berkeley)

[165] *Linguistic Evidence on Pre-Clovis America*

In recent decades a consensus has solidified among linguists that the settlement of the Americas began long before Clovis. Evidence includes the large number of irreducible language families in the Americas and the time required to produce them at expected proliferation rates; the time required to reach and inhabit distant settlement points including Monte Verde, Chile; and the great structural diversity among Indigenous language families, pointing to long diversification in situ plus varied inputs over time. Here I review that work and my own recent arguments for the origin of polysynthesis and other complex structures and their implications for ancient migrations, adaptation of phonological and grammatical structure to the communication needs of sparse and highly mobile populations and evidence for that profile in the earliest American languages, linguistic support for Melanesian genetic affinities of the initial colonizers and how to interpret that scenario, and increased structural and genealogical diversity among postglacial entrants. Modern Indigenous languages still cluster, structurally and genealogically, in the regions defined by glacial extents during the time windows of early openings, and this argues against a wave-of-advance settlement of the Americas and in favor of local expansion and occasional distant colonizations.

Nicholson, Christopher (Center for Digital Antiquity [tDAR]), Charlene Collazzi (Center for Digital Antiquity [tDAR]), and Anthony Masinton (Arizona State University)

[225] *tDAR's Educational Materials for Pottery Research and Beyond*

Expanding students' educational opportunities to explore the richness of human culture is a fundamental aspect of a well-rounded university education. While several platforms that offer general online lessons on archaeology, there is a noticeable gap in educational materials that enable students to interact with real-world datasets, images, and documents from ongoing and past archaeological projects. To address this gap, we present the Mimbres Pottery Images Digital Database Education Resources that harnesses the extensive pottery data available in the Digital Archaeological Record (tDAR). This collection contains a set of lessons and associated materials for grades K–12 and college/university students. All the lessons use the Mimbres Pottery Images Digital Database (MimPIDD) to engage students in different aspects of archaeological analyses. Our long-term goal is to expand tDAR's education collection and access to archaeological and historic preservation resources for a variety of educators, and encourage students to learn more about our shared past.

Nicolas, Richard (University of Wisconsin, Madison), and Isabelle Druc (UW-Madison; Field Museum Chicago)

[66] *Technological Techniques and Thin-Section Petrography: Ancient Rooftiles from the Co Loa Settlement in Northern Red River Valley, Vietnam*

Archaeological investigations at the site of Co Loa in Vietnam's Red River Valley (RRV) region yielded a class of architectural ceramics that emerged near the end of the first millennium BCE (300–100 BCE). Laboratory

analysis focused on the use of digital portable microscope on ceramic cross-sections and a petrographic microscope on thin-sections. Macroanalysis revealed that ceramic roof tiles carry a unique design found only in Co Loa that became a prominent feature before the Han Annexation of the RRV region. Technological analysis revealed that a uniform, fine-clay slip was applied on both surfaces of the roof tile. Wavy, parallel patterns found on both sides of the sample have potential implications about local emerging aesthetic designs and manufacturing techniques. This poster will present the initial application of ceramic petrography on samples collected from site excavations, museum storage, and field surveys.

Nicolay, Scott (New Mexico State Parks)

[39] *Swords into Ploughshares: Revisiting the Roundel Staffs of the US Southwest*

The wide range of perishable objects that early researchers in the US Southwest recovered includes several types of wooden staffs. These include both crooks and flat, bladed types, as well as a more unique form variously described as a roundel *paho*, roundel staff, or ferrule staff. The most elaborate versions of these roundel staffs incorporate a mushroom-shaped pommel and a spool-like element (the roundel) that gives the appearance of having been turned on a lathe, and some are decorated with zigzag lines. The largest quantities of roundel staffs come from Western Mogollon shrine caves and Pueblo Bonito in Chaco Canyon. Images of roundel staffs also appear on Mimbres Black-on-white ceramics and in rock art. Roundel staffs have received little systematic study, and researchers usually identify them either as a form of prayer stick (Hopi: *paho*) or as weapons. In this paper, I present alternative evidence that roundel staffs, as well as the other staff varieties, were employed in agricultural ritual. The distribution of these artifacts is intriguing given the strong differences in material culture and ritual apparatus between the Ancestral Puebloan and Mogollon regions during the Pueblo II period when roundel staffs appear to reach their apogee of abundance.

Nielsen, Casey, Jayson Gill (Wesleyan University), and Allison Wolfe (Boise State University)

[317] *Differential Effects of End-Pleistocene Climate Change and Early Humans on Megafaunal Spatial Distribution in the American Southwest*

The end of the Pleistocene is characterized by pronounced climate change, human arrival and dispersal, and the extinction of a variety of taxa, the majority of which were mammals. During this period, the continent experienced the loss of 38 genera of mammals, over 70% of which are classified as megafauna. Historically, the cause of these extinctions has been attributed to a singular factor: either climate change or human hunting. Recently, however, studies featuring a multicausal framework have become more popular. This research utilizes such a multicausal framework by examining how both climatic shifts and the arrival/expansion of human populations during the terminal Pleistocene and into the early Holocene affected the spatial distributions of various megafaunal taxa in the American Southwest. The spatial distributions of the most represented megafaunal taxa (e.g., *Mamuthus*, *Mammuth*, *Camelops*, *Equus*, *Platygonus*, *Hemiauchenia*, *Paramylodon*, *Nothrotheriops*) shift latitudinally through time, though specific correlations between climatic events and human presence appear to vary between each taxon.

Nieusma, Jordan [189] see Zimmer-Dauphinee, James

Niles, Tristan [45] see Boutin, Alexis

Nimbopyruá Delfina dos Santos, Catarina [315] see Sallum, Marianne

Nims, Reno, and Matthew Campbell (CFG Heritage)

[173] *The Curious Case of the Tauranga Bay Snapper Fishery: Otolith Isotopic Chemistry in Northern Aotearoa*

During my doctoral studies under Professor Allen's guidance, I sought to explore the long-term human ecodynamics of Māori peoples' fisheries in northern Aotearoa. I hypothesized that decreasing sea surface temperatures during the Little Ice Age could have been one of several major drivers of fisheries change, but unfortunately there were no environmental reconstructions available for coastal waters in Aotearoa over this critical time period. I aimed to address this issue using oxygen isotopes from archaeological snapper (*Chrysophrys auratus*) otoliths to estimate changes in sea surface temperatures, but I was only able to access snapper otoliths from one early archaeological deposit, and the isotopic chemistry of each individual otolith

revealed extremely variable patterns in marine conditions for a brief, local set of fish catches. The results of this pilot study highlight that while fish remains can provide unique records of past environmental conditions, they are themselves the product of challenging interactions between climate, fisheries ecology, and human-environment interactions. In this presentation, I will explore the complex socioenvironmental processes of Māori fisheries that are reflected in isotopic and archaeological evidence from Tauranga Bay, Te Tai Tokerau, Aotearoa.

Nishida, Talia, Daniel Contreras, Oula Seitsonen (University of Oulu), Katherine Grillo (University of Florida), and Mary Prendergast (Rice University)

[223] *Obsidian Sourcing and Interaction Networks in the Tanzanian Pastoral Neolithic*

Understanding mobility, interaction, and exchange is fundamental to reconstructing social dynamics during the early spread of food production throughout eastern Africa. Geochemical sourcing of obsidian artifacts provides one mechanism for exploring relationships among mobile pastoralists and between these groups and foragers and how those relationships changed over time. Previous studies have largely been limited to the Turkana Basin and Central Rift Valley of Kenya; in Tanzania, preliminary research has suggested that pastoralists obtained obsidian through long-distance exchange networks originating near Lake Naivasha. Here, we present a significantly expanded Tanzanian dataset, integrating multimethod obsidian geochemical characterization data from four labs on >70 artifacts from 12 Late Stone Age and Pastoral Neolithic sites throughout the northern Tanzanian Rift Valley. We analyze the variable exploitation of more and less distant obsidian sources, exploring the varying intensity and character of interaction within and between groups over time in this region.

Nissen, Zachary (Northwestern University), and Kacey Grauer (Stanford University)

[107] *Mixed Methods and Multiple Scales: Enhancing Spatial and Temporal Resolution in Maya Settlement Studies*

Lidar has transformed the contemporary practice of archaeology and reinvigorated long-standing questions about settlement organization and variation. Despite its strengths, lidar datasets are not without limitations. A growing body of scholarship is drawing attention to the types of archaeological remains that go undocumented by lidar survey alone (e.g., Hutson 2016; Wadsworth et al. 2021). In this paper, we present a mixed-method approach utilized by the New River Island Project (NRIP) to capture spatial and temporal variation in indigenous Maya settlement along the New River in northern Belize. We argue that a multiscale and mixed-methods approach can bring attention to and provide solutions for issues related to the spatial and temporal resolution of archaeological datasets. While lidar is well suited to identify the mounded remains of stone architecture that is characteristic of the Classic period (250–900 CE), the remains of low-lying features, such as the foundations of pole-and-thatch houses, are often only visible on the ground surface and difficult to detect in elevation-based models. Drawing on remote sensing, pedestrian survey, ethnohistoric records, and accounts from local and descendant community members, NRIP documents the long-term history of riverine settlement in the region (ca. 650–1640 CE) and the community's resilience during periods of change.

Nixon, Tessa, and Sara Watson (Field Museum of Natural History)

[190] *South African Stone Age Materials: The Relationship between Elevation and Silcrete Deposits*

Silcrete is a hard, compact mass formed by the cementation of surface sediments with secondary silica. While rare in Europe and the USA, it is abundant in South Africa, where it preserves ancient land surfaces and provides clues about erosion rates and past climatic conditions. In the South African Middle and Later Stone Age, silcrete was widely used for tool production, and its distribution offers insights into the migration and communication patterns of early human populations. This study examines the correlation between silcrete deposits in South Africa, as estimated through ethnographic research, and land elevation. Using digitized geological maps, we georeferenced silcrete deposit sites and modeled their relationship with elevation along South Africa's southern coast. Results indicate a positive correlation between silcrete presence and higher elevations, suggesting that silcrete is more frequently found in elevated areas. These findings help explain why silcrete may have been favored over other materials and hint at its role in cultural exchange between Stone Age communities. The discovery of similar silcrete firing methods at distant sites, along with its presence at higher elevations, suggests shared techniques and common material sources that were potentially passed down through oral traditions, fostering intergroup connections.

Nobile, Julieta [66] see Cattaneo, Roxana

Noe, Sarah (University of California, Santa Barbara), Randy Haas (University of Wyoming), and Mark Aldenderfer (University of California)

[182] *Camelid Domestication in the Lake Titicaca Basin: Integrating Evidence from the Archaic Period (10.0–3.2 ka)*
Camelids, recognized as the sole large-bodied domesticate of the Americas, were central to Andean societies, playing a crucial role in their economic, symbolic, and religious systems. The domestication of Andean camelids challenges conventional domestication models, which predominantly focus on Eurasian species. The distinct environmental and cultural context of the Andes necessitates a specialized approach to understanding this process. This study advances Andean zooarchaeology by examining camelid domestication in the high-altitude Lake Titicaca Basin, a region long posited as a key center for this development. The research focuses on the domestication of camelids during the critical Archaic period transition from hunter-gatherer to sedentism. To understand the complex and prolonged process of domestication, this research integrates genetic, isotopic, archaeological, and environmental evidence to provide a comprehensive evaluation of camelid domestication.

Noelli, Francisco [315] see Sallum, Marianne

Nohren, Daniel

[129] *The Dogs of Housepit 54*

This study investigates the variable relationships between people and domestic dogs over time within Housepit 54 at the Bridge River site, British Columbia. While viewing domestication as an ongoing social process, this research aims to demonstrate how the roles of dogs can be redesigned based on the changing environmental and socioeconomic factors. Previous archaeological research and ethnographic accounts have found that the dogs of Housepit 54 were provisioned with salmon, an essential winter resource, and may have held various economic and social roles within housepit villages. These possibly concurrent roles may have included haulers of resources, assistants in hunting, consumers of refuse, or as occasional sources of food during times of scarcity or in feasting rituals. The analysis of faunal remains from the housepit floor and roof deposits presents an opportunity to not only examine taphonomic patterns resulting from maintaining populations of dogs in various roles but also the possible underlying social and demographic contexts in which decisions on domestication are made.

Noiret, Pierre [320] see Goring, Daniel

Nolan, David [37] see Ferree, Tyler

Nolan, Kevin (Applied Anthropology Laboratories, Ball State University), Carson Wright (Applied Anthropology Laboratories, Ball State University), Hannah Ryker (Applied Anthropology Laboratories, Ball State University), Reganne O'Connor (Metric Environmental), and Christine Thompson (Applied Anthropology Laboratories, Ball State University)

[189] *Interpretation of Activity Organization on Wolfpen Ridge: Mass Analysis of Debitage from an Upland Ridgetop in Harrison County, Indiana*

With an FY 2022/2023 Historic Preservation Fund (HPF) grant through the Indiana Division of Historic Preservation and Archaeology (DHPA) the Applied Anthropology Laboratories (AAL) conducted a Phase Ia archaeological investigation of an upland ridge known as Wolfpen Ridge in Harrison-Crawford State Forest (HCSF) with the assistance of 18 student employees. Our purpose was to further investigate five sites documented by Division of Forestry (DoF) archaeologist Alicia Ariens (2004): 12HR599, 12HR600, 12HR622, 12HR623, and 12HR624. Our survey failed to reveal any breaks in the artifact distribution for the sites on the ridgetop (622-624) and resulted in a redefinition of 12HR623 as a 59.2-acre lithic scatter with three distinct activity loci. Survey of 93 acres of ridgetop and two rockshelter sites (599 and 600) yielded nearly 8,000 lithic artifacts. The volume of artifacts more than doubled what we could fit within our HPF grant budget. In coordination with DHPA and DoF, AAL developed a mass analysis protocol to more efficiently allow summary and analysis of how this landscape was inhabited by the Indigenous inhabitants of the Ohio Valley.

We summarize the functional analyses and conclusions of this analysis and its implications for regional precontact Native history in the region.

Nolan, Stuart [101] see Mehta, Jayur

Nolin, Ryan [75] see Mink, Philip

Noll, Christopher

[191] *Does the Olcott / Old Cordilleran Tool Kit of the Pacific Northwest of North America Include a Diagnostic Lithic Core Type?*

The Olcott phase is recognized in archaeological deposits by a relatively small variety of tool types, with the leaf-shaped “Olcott” point being among the most recognizable. Other key attributes of the Olcott tool kit include heavily relying on local toolstone and lithic reduction techniques emphasizing durability and flexibility. Unidirectional, multidirectional, and bifacial core reduction is commonly evident at Olcott sites but recent excavations at three sites along the Elwha River at the north end of Washington’s Olympic Peninsula yielded 43 cores comprising 12.2% of the core assemblage with attributes that have rarely been described elsewhere in research literature except other Old Cordilleran sites. This core type is a unidirectional variant made from a split cobble that uses the cortical surface as the platform. The approach to reduction forms a distinct low-angle cone through the production of flakes from the cortical edge toward the center of the split face. The assemblage also indicates that these cores were rejuvenated when needed using an overshot flake to remove the cone. This approach to small raw material package reduction that immediately provides usable flakes with little or no waste appears unique to, or perhaps simply most common within, the Old Cordilleran tool kit.

Nora, David (Hebrew University of Jerusalem), and Ariel Malinsky-Buller (Hebrew University of Jerusalem)

[42] *Curation at His 50th, Reinterpreted: A Suggested Novel Technological Quantification*

Curation, a key concept in lithic analysis rooted in ethnography, was introduced by Binford to illustrate the adaptive strategies of hunter-gatherers and how provisional conditions influence their behavioral choices. Initially perceived as an inherent strategy in resource exploitation, the concept of curation has undergone extensive discourse over the past 50 years, particularly regarding its applicability, epistemology, and theoretical contributions. Curation has been partially integrated into the technological organization perspective, emphasizing decision-making, including all stages from “the selection and integration of strategies for making, using, transporting, and discarding tools and the material needed for their manufacture and maintenance” (Nelson 1991:57). This paper examines the operational sequence of retouching and resharpening through two case studies of Middle Paleolithic obsidian lithic assemblages from Armenia. Our analysis focuses on the technological aspects of retouching and resharpening byproducts, particularly flakes smaller than 20 mm. By implementing a new classificatory scheme and leveraging precise obsidian sourcing, we achieve two primary objectives: reconstructing the decision-making processes in raw material provisioning and quantifying the degree of curation, including the extracted utility per raw material and distance. This novel approach to technological quantification offers a fresh perspective on curation, reviving the concept after 50 years of discourse.

Nordstrom, Eric (Mississippi State University)

[343] *New Perspectives on Altered States: Bioarchaeology, Altered States of Knowing, and Social Memory*

Altered States of Consciousness (ASCs) have been used by individuals in a variety of contexts for diverse purposes, as far back as antiquity. Archaeological investigations of these practices typically focus on indirect evidence of the use of altered states, such as residue analysis of associated artifacts, iconographic analysis of motifs present on various media, and ethnobotanical remains. The use of ASCs has been primarily associated with ritual specialists including shamans, medicine people, and healers, interpreted as a practice of taking a “soul flight” to other realms to diagnose and treat maladies within the community. This presentation builds on the concept of Altered States of Knowing (Hanegraaff 2022) by offering a complementary view that different peoples, including but not limited to ritual specialists, have engaged with ASCs to access knowledge that is otherwise unavailable in a “sober” state, with case studies focused on Indigenous use of

Datura/Toloache. The role of ASCs in the creation and maintenance of social memory within communities will also be discussed as part of my preliminary thesis research. Finally, this presentation offers directions for future research focused on examining direct evidence of the use of psychoactive plants such as *Datura* through the analysis of dental calculus.

Norman, Lauren, Ayla Alves Borges, and Blair Schneider (Kansas Geological Survey)

[364] *Revisiting a 150-Year-Old Cold Case: Using Geophysics and Archaeology to Search for the Bender Family Homestead (Site 14LT24)*

Between 1870 and 1873, the Bender family occupied a homestead along the Osage Mission Trail in southeast Kansas. Historical documents indicate several structures on site, including a house, barn, outhouse, and wells. In 1873 a search for missing travelers along the trail led to the discovery of 11 victims buried on the property. By this time, the Benders had disappeared. The exact locations of the structures are currently unknown, although the general location is known by the local community. Renewed interest in the site, spurred by landowner Bob Miller, led to the creation of a field school in 2023 and 2024 by the University of Kansas Department of Anthropology and Kansas Geological Survey. Results from the noninvasive geophysical surveys identified a large circular feature that may be evidence of a horse corral, a possible well, and a possible trash site, which correspond to dense artifact concentrations from pedestrian survey. Archaeological excavations investigated the possible well and trash site. Analysis indicates that this was the location of a historic homestead in the 1870s and confirms that the site has been abandoned since then, with farming only starting in the mid-1970s.

Norman, Lauren [297] see Ward, Emily

Norman, Scotti

[170] *Taki Onqoy and Idolatrous Dances: Archaeological Approaches to an Underground Religious Rebellion*

Though the term “rebellion” connotes direct, violent uprisings to authority, resistance of disenfranchised peoples can take subtle or indirect forms such as religious revitalization or rejection of dominant or colonizer cultural practices. In the sixteenth-century central Peruvian Andes, *Taki Onqoy* (Quechua: dancing/singing sickness) practitioners discreetly rejected Catholicism and instead opted to revitalize their Indigenous *huaca* (Quechua: landscape deity) veneration through ritual drinking, dancing, and chanting. Materially, these more ephemeral practices often lack clear archaeological signatures and have been deemed impossible to research, particularly compared to violent rebellions, which typically leave behind weapons, deceased individuals, fortifications, or evidence of wide-scale destruction. In this presentation, I argue that through creative applications and interpretations of archaeological evidence (spatial analysis considering invisibility, the materiality of ritual dances, and archaeologies of performance), scholars interested in rebellion can and should consider these more indirect forms of resistance. More broadly, investigation into revitalization movements can lend critical insight into contemporary political and religious factions, perhaps allowing for better understanding of our current world.

Norment, Aaron (Environmental Research Group LLC), and Brittney Gregory

[112] *Uncovering Mill Creek’s Buried Past: Deep Excavations and Precontact Insights from Site 41AU103, Austin County, Texas*

In 2024, archaeologists from Environmental Research Group LLC (ERG), in collaboration with the Texas Department of Transportation (TxDOT), undertook data recovery excavations at site 41AU103 in rural Austin County, Texas. This deeply buried and highly stratified site, located along the banks of Mill Creek, revealed multiple precontact occupation surfaces, evidenced by abundant burned sandstone, burned clay nodules, charcoal, lithic debitage, diagnostic stone tools, animal bones, and dense lenses of freshwater mussel shells. Through a combination of manual and mechanical field methods, archaeologists implemented a unique and efficient excavation strategy aimed at reaching site deposits 6 m deep. As a result, intensive geoarchaeological investigations and extensive artifact recovery has provided researchers with valuable insights into site formation processes in dynamic alluvial environments, while also shedding light on human behavior during these periods. Situated within an area of Texas often lacking excavation opportunities, site 41AU103 offers a unique chance to enhance our understanding of the sequence of precontact occupations in

the Mid-Coastal Plains of the Brazos River watershed. This presentation will share preliminary findings from these significant investigations.

Norris, Steve [122] see Ramirez, Estevan

Norton, Holly (History Colorado)

[170] *Locating the Rebels Hidden in the Archive: GIS of the 1733 St. Jan Slave Rebellion*

The 1733 St. Jan Slave rebellion in the Danish West Indies was an extraordinary fight for self-determination. Resistance by enslaved peoples is also ephemeral and difficult to track in both the archival and archaeological records. By nature, enslaved resistance often used obfuscation and secrecy as tactics against their oppressors, rendering their signatures invisible. Using approaches to excavating the written record that have been developed across the digital humanities paradigm, the rebels and their actions could be made visible in ways that traditional approaches to historiography did not always make possible. Furthermore, the eight-month event on St. Jan resulted in transformations to the society as a result of the rebellion that could be read on the larger cultural landscape of the island. This paper explores ways that geographic information systems were used to locate rebels during their fight for freedom, and how we can place them on a landscape that helps make their actions discernable across time and space.

Norwood, Alexandra (University of Michigan), and Erina Baci (University of Michigan)

[346] *Mending the Leaky Academic Pipeline through the Mentoring of Historically Marginalized Undergraduates in Anthropology*

At every stage along the academic pipeline, mentoring is crucial for the success of minoritized scholars. While the number of mentoring initiatives focused on graduate students and early career faculty is growing, less focus has been placed on earlier intervention—at the undergraduate level—which is critically important to recruiting and retaining diverse scholars. The Anthropology Undergraduate-Graduate Mentoring Program (AUGMENT), launched by graduate students at the University of Michigan, seeks to address this gap. AUGMENT pairs underrepresented undergraduates interested in anthropology with graduate student mentors who share similar interests, experiences, or backgrounds. This early mentorship helps students navigate both university life and the field of anthropology. Now in its fifth year, AUGMENT has involved over 130 undergraduate mentees and 72 graduate student mentors. The program's diverse undergraduate participants are primarily anthropology majors aspiring to graduate school. While quantitative impact metrics are still being collected, anecdotal evidence shows that the supportive community AUGMENT fosters is improving student outcomes. Many mentees engage in departmental research, secure field opportunities, and pursue graduate education. With its positive impact on anthropology students at the University of Michigan, AUGMENT demonstrates the importance of prioritizing undergraduate mentoring in efforts to diversify and decolonize our field.

Novak, Mario [288] see Martinoia Zamolo, Valentina

Novak, Sarah

[369] *3D Modeling Stratigraphy: Utilizing 3D Modeling to Understand Environmental Changes in Cultural Sites*

This paper examines the use of 3D modeling within an archaeological site and how this technology can enhance our understanding of the past. Two 1 × 1 m units were excavated to an approximate depth of 250 cm at a large Southern California coastal cultural site. Unit 01 was placed on a 15% sloping side of a shell midden disturbed by 1950s construction of a reservoir. Unit 02 was positioned toward the end of the sloped midden and was expected to contain a majority of mixed context. Excavations confirmed mixed stratigraphy for Unit 01; however, Unit 02's excavation revealed clearer stratigraphic levels. Through 3D modeling, archaeologists were able to identify sterile levels and reveal patterns in stratigraphy resulting from both environmental and cultural factors. Further analysis of an exposed cliffside revealed the geomorphic history of the area and helped create a more accurate representation and understanding of the past.

Novelo Pérez, María [236] see Lerma, Ignacio

Nowakowski, Lauren (University of Texas, San Antonio)**[64]** *A Place for Specialized Learning: Ongoing Excavations at Group C, Xunantunich*

Ongoing excavations at Xunantunich aim to deepen our understanding of Group C as a center for specialized knowledge and training. Previous research revealed large, vaulted range structures, C-2 and C-3, featuring high benches, incised Patolli boards, and outward-facing doorways. Proximity and architectural connections suggest these atypical residential buildings were closely linked with a large sweatbath and an adjacent patio group for servants and attendants to individuals living within the range structures. These findings point to Group C as a specialized residence where youths engaged in processions, rituals, militaristic training, and dance. In the 2024 field season, we further explored Group C's connection to Structure A-5-2nd, two rooms filled with ancient Maya graffiti, while also searching for additional Patolli boards in other rooms. Additionally, recent lidar analysis identified a possible double ringed ditch and berm defensive feature encircling Group C, which supports our hypothesis of the area's role in specialized training. These discoveries provide new insights into the complex interplay of architecture and function within Group C.

Nowlin, Jessica [322] see Razo, Mikaela

Ntsondwa, Asithandile [346] see Pargeter, Justin

Nuccio, Victoria [160] see Riebe, Danielle

Nuñez, Jose (Universidad Nacional Mayor de San Marcos)**[354]** *Between the Altiplano and the Amazonia: Strategies of Inka Control in Carabaya Mountains*

The relationship between the Inkas and the Amazonia was complex. Although the Inka elite often depicted the Amazonian peoples as "savages," many of the resources necessary in their ritual and social life actually originated in the Amazon. This fact, coupled with an expansionist ideology, led to numerous military campaigns eastward. These campaigns leveraged the eastern Andes as a "fortress zone" (Pärssinen and Siiriäinen 2003), where the Inkas established facilities to support their military and diplomatic efforts. This symposium aims to explore the strategies used for the Inkas in this "fortress zone," with a particular focus on the Carabaya Mountains. By examining various settlements with Inka presence, we seek to reconstruct the strategies employed by the Inkas in this region and assess the impact of their occupation on the local populations. The evidence indicates the presence of a dependent local elite, with strong ties with the Inkas. This elite was responsible for constructing roads, managing tribute, and organizing communal feasts. Additionally, there were "archipelagos," controlled directly by Cusquenian officials. Also, the Inka facilities in the area did not have a defensive focus, which suggests a less militaristic strategy.

Nxumalo, Bongumenzi [69] see Ogundiran, Akin

Nyamushosho, Robert (Queens College, City University New York)**[51]** *Reimagining Governance in the Zimbabwe Culture: Some Lessons from Ancient Mberengwa*

This study examines the persistent challenges in the historiography of early governance and state formation in the Zimbabwe culture (CE 1000–1900). Traditional analyses of Great Zimbabwe and other large collectives such as Mapungubwe and Khami rely heavily on outdated socio-evolutionary models that portray these states as centralized, despotic regimes controlling vast resources and rigidly hierarchized power structures. Despite the global shift toward recognizing more collective governance paradigms in regions like Mesoamerica, these interpretations still dominate southern Africa's Iron Age studies. Additionally, studies often focus disproportionately on large political centers, marginalizing smaller contemporaneous collectives, such as those in Mberengwa in southern Zimbabwe. These smaller polities, though rich in resources, are often dismissed as peripheral and insignificant. Colonial biases in archaeology have privileged Eurocentric frameworks over African epistemologies, obscuring the diverse governance strategies that shaped precolonial southern Africa. Using Mberengwa—a gold-rich, understudied region—as a case study, this research explores the dynamic sociopolitical structures within Zimbabwe culture. Preliminary findings suggest that early governance was not strictly top-down but operated within fluid, cooperative systems, minimizing elite power abuse. This study challenges prevailing Eurocentric models and contributes to the decolonization of African

archaeology by emphasizing indigenous systems of governance and African perspectives on political organization.

Nyárádi, Zsolt [215] see Zejdlik, Katie

Nyers, Alexander [292] see Stone, Samantha

Oas, Sarah (Archaeology Southwest), Samantha Fladd (Washington State University), Karen Gust Schollmeyer (Archaeology Southwest), and Christopher Schwartz (Terracon Consultants)

[385] *Enhancing Multiscalar Archaeofaunal Research Using cyberSW*

Big data projects, like cyberSW, greatly expanded the scope of archaeological research by providing insights into issues of sustainability and resilience through broad reconstructions of past interactions between societies and environments. Similarly, archaeological fauna data provide a window into human-environmental relationships and speak to resilience and sustainability at multiple temporal and spatial scales. With the recent expansion of cyberSW allowing for more nuanced analyses at the intra-site level, we explore how this new degree of detail to provide further nuance to reconstructions of human animal interrelationships more often conducted at site or regional scales. In this paper, we consider the new intra-site capabilities of cyberSW through the lens of fauna data from the Tonto Basin and Mimbres Mogollon. Beyond serving as an ideal intersection between society and environment, faunal data are greatly influenced by archaeological classifications and categorization (e.g., ritual or domestic economy, by element or by taxa, intentional burial or informal disposal, etc.). We draw on the expertise of multiple zooarchaeological scholars in the US Southwest to consider both how our interpretive and scalar frameworks influence our understandings of the past and what research tools could improve the ability to translate between interpretive and scalar frameworks.

Oas, Sarah [293] see Fladd, Samantha

Oas, Sarah [385] see Mills, Barbara

Obando, Vanessa [327] see RuizDiaz, Julio

Obie, Michael

[389] *Predictive Model Building and Archaeological Inundated Landscape Survey in the Kawartha Lakes Watershed of Central Ontario, Canada*

Although the Canadian Great Lakes region has undergone enormous landscape inundation since 12,000 kya, the archaeological potential of these underwater landscapes is rarely investigated. This is largely due to factors including the difficulty of detecting underwater archaeological sites due to sediment overburden, the destructive impacts of the Great Lakes on site survival, and a lack of information regarding underwater site patterning and taphonomy. However, some of these barriers to underwater research are less prevalent in the region's sheltered and shallow lake systems. The Kawartha Lakes region of south-central Ontario, where many lakes have more than doubled their size since the early Holocene, is one such region. Here, processes of sediment erosion, while not strong enough to destroy archaeological sites, can exempt sites from significant sediment overburden and allow for highly accessible means of surveying for archaeological material. This study implements a survey program in the Kawartha Lakes to assess this unique inundated landscape. The site survey methods target a wide range of both culturally modeled and random underwater locations to gain insights into local site patterning, land use, and taphonomy, to help provide a better baseline of considerations for future survey and predictive modeling initiatives.

O'Brien, Haley (University of Montana)

[129] *The Faunal Record of the Housepit 54 Project at Bridge River (EeR14), British Columbia*

The Bridge River site (K'etxelná'z) is a winter pithouse village located in the Mid-Fraser Canyon of south-central British Columbia near the confluence of the Bridge and Fraser Rivers. Extensive excavations in Housepit 54 have uncovered a sequence of 17 occupation floors and seven roof deposits that previous

research has separated into distinct periods noted as Bridge River 1 (1800–1600 cal BP), Bridge River 2 (1600–1300 cal BP), Bridge River 3 (1300–1000 cal BP), and later reoccupation of Bridge River 4 (600–100 cal BP). Of particular focus here are the noted differences between Bridge River 2 and 3 where the village population peaked twice during a time of climate change. The population peaks were followed by two Malthusian ceiling events resulting in the renegotiation of household economies and the emergence of institutionalized inequality. Building on these previous studies, this research aims to reexamine the current zooarchaeological assemblage of Housepit 54 with a particular focus on subsistence strategies of groups occupying 14 of the deeper occupation floors (IIa through IIn) as related to changes in housepit size, demographic trends, and noted environmental changes.

O'Brien, Matthew [57] see Mackie, Madeline

O'Brien, Meagan (POWER Engineers, Meridian, ID)

[298] *Assessing the Subjectivity of Soil Characteristics Using CRM Case Studies*

Various resources are typically consulted to determine soil characteristics prior to and during archaeological excavations, such as USDA's Web Soil Survey, California Soil Resource Lab's SoilWeb, and the Munsell Color System. The determination of soil color and texture are often impacted by the education level, work experience, geographic familiarity, and perception of color by the excavators. Multiple cultural resource management surveys conducted in New England by Power Engineers Inc. will be utilized as case studies evaluating the subjectivity and inconsistencies of reporting soil characteristics during fieldwork in contrast with nationally reported soil data.

O'Brien, Michael (Texas A&M, San Antonio)

[339] *David Meltzer and the Bureau of (American) Ethnology*

It is difficult, if not downright impossible, to even begin to summarize the contributions Dave Meltzer has made to archaeology. I've long regarded him as the twenty-first-century heir to William Henry Holmes's mantle. Few people have been as successful in pulling together truly interdisciplinary, as opposed to merely "multidisciplinary," teams to solve archaeological and geoarchaeological problems. Equally significant are his numerous contributions to our knowledge of the history of nineteenth- and early twentieth-century American archaeology. One thing that sets all of Dave's work apart from that of many others is his uncanny ability to write for nonexperts. This comes through loud and clear in his writing not only for other archaeologists but for lay readers as well. Here I take a brief look at his book *The Great Paleolithic War*, which in my mind is the best discussion of one of the longest-running feuds in the history of American anthropology: Was there incontrovertible evidence of glacial-age humans in North America? The feud became so vicious that researchers were deliberately frightened away from discussing the topic. In many respects, that feud was not so different than the one that occurred a century later, with, not surprisingly, Dave firmly in the forefront.

Ocharán, Gladys [374] see Prieto, Gabriel

O'Connell, James (University of Utah), and Jim Allen (La Trobe University)

[339] *Archaeology, DNA, and the Colonization of Pleistocene Sahul*

Pleistocene Sahul, the continent created when falling sea levels opened a dry land connection between New Guinea and Australia, was first colonized by anatomically modern *Homo sapiens* ca. 47–51 ka. A small number of sites beyond this age in the north, south, and west of Australia, including two claimed to be >100,000 BP, have all been shown to be archaeologically dubious. Analyses of Indigenous DNA point to colonizing populations including at least three, possibly more than a dozen mitochondrial lineages arriving within a few thousand years of one another >45 ka. Demographic calculations based on DNA data suggest minimum founding populations numbering in the thousands. These results have implications for ideas about the marine technological capabilities of early *H. sapiens* in SE Asia.

O'Connell, Tamsin [182] see Erauw, Céline

O'Connell, Tamsin [167] see Kalodner, Jacob

O'Connor, Alan [223] see Pierce, Daniel

O'Connor, Reganne [189] see Nolan, Kevin

Odell, Molly (Alutiiq Museum and Archaeological Repository)

[340] *Thirty Years of Community-Based Archaeology in the Kodiak Archipelago*

For nearly 30 years the Alutiiq Museum has been conducting community-based archaeological research in the Kodiak Archipelago, Alaska, with the goal of advancing cultural stewardship. Our museum preserves and shares the heritage and living culture of the Alutiiq/Sugpiaq people. Fueled by an interest in ancestral traditions, early museum research focused on excavations at threatened sites, involving community volunteers and interns. A complementary site stewardship program harnessed public interest in archaeology to document site conditions in remote locations. As partnerships and public excitement grew, research shifted to large-scale surveys to understand both ancestral settlement patterns and the modern forces that shape the archaeological record (erosion, animal damage, human use). By exploring Alutiiq heritage across the Kodiak Archipelago, the Alutiiq Museum has formed lasting partnerships with federal, state, municipal, and Native landowners. Today these partnerships continue to develop as Native corporations explore archaeology on their own lands and develop ecotourism opportunities. Alaska is home to nearly half of the nation's federally recognized tribes, yet almost no Indian land and only one THPO. The Alutiiq Museum provides an example of a community-based organization working across many land-managing jurisdictions to study and share the archaeological history of the Alutiiq people.

O'Donnell, Lexi [36] see Cerezo-Román, Jessica

O'Donnell, Lexi [104] see Pearson, Osbjorn

O'Donnell, Lexi [385] see Stodder, Ann

O'Donnell, Tristan

[216] *Inventorizing New England's Historic Stone Walls: How Many Miles of Stone Walls Still Stand Today*

New England is crisscrossed with historic stone walls and they remain an integral part of the landscape, but how many miles of historic stone walls still stand today? In 2004, Robert Thorson wrote that "there were approximately 240,000 miles of stone walls in New England in 1939, according to an 1897 report of fences in the region." But with modern development and the urbanization of much of the region that may not be true any longer. Using varying techniques such as lidar, aerial imagery, and field verification is it possible to count the extent of the remaining walls throughout the region? A representative sample of urban, suburban, and rural areas of New England will be studied and various data collection techniques utilized in order to inventory and count how many miles of historic stone walls may still remain.

O'Donnell, Tristan [365] see Barker, F.

O'Donnell, Tristan [390] see Haynes, Tanner

Odsuren, Davaakhuu [278] see Akogun, Moses

Oelze, Vicky [69] see McNeill, Patricia

Oetelaar, Gerald

[295] *Counter-mapping the Blackfoot Landscape: In Alice's Footsteps*

With the constant encouragement of Alice Kehoe for the past quarter of a century, my wife, Joy, the historian in this project, and I have adopted counter-mapping as an alternative approach to interpret the archaeological record of the Northwestern Plains as an imprint of Blackfoot oral traditions. This approach has involved the collection of Blackfoot toponyms, the reinterpretation of Blackfoot maps, and the establishment of connections between oral traditions, maps, toponyms, historical documents, and archaeological sites. An outcome of this research has been the realization that even the landscape of the nomadic bison hunters was a managed landscape, not a pristine grassland as maintained by ecologists. Furthermore, this landscape served as an archive for the storage of Blackfoot oral traditions. However, when

the movements of the Blackfoot were restricted to reservations, they could no longer visit the places, remember the names, tell the stories, sing the songs, perform the ceremonies, and transmit this information to subsequent generations. As such, colonization was so much more than the simple extermination of bison and the appropriation of the Blackfoot homeland.

Offner, Jerome (Houston Museum of Natural Science)

[97] *All about the Ruler's Court and Principal Palace in Precontact Texcoco in 900 Seconds*

Multispectral and spectroscopic analysis of key sixteenth-century graphic manuscripts, especially *Mapa Quinatzin* and *Codex Xolotl*, combined with the often-confused alphabetic sources dependent on them, are presented. New methods of digital annotation of the surface of such graphic manuscripts, or on any information bearing surface, are demonstrated. A few new artifacts, including a stone *tlachieloni* and ballcourt ring from the late town historian's collection are shown as well. The Texcocan state's construction as a balancing of political, judicial, military, and commercial interests, first presented in the 1980s, rather than older but persistent views of a monolithic dictatorship, is again brought to the fore in light of recent work by Feinman, Blanton, Nicholas, Kowalewski, Fargher, and Carballo on power relations, inequality, and cooperative and pluralistic government. Along the way, Anawalt's prescient (1980), cogent criticism of claimed sumptuary laws is confirmed. All in 900 seconds.

Ogburn, Dennis (UNC Charlotte)

[386] *The Process of Inka Megalithic Wall Construction at Sacsayhuaman*

Although scholars know the technology the Inka used to quarry, transport, and shape the stones that were used in their high-quality structures, the exact process of how they maneuvered and fit the building blocks of their megalithic walls has long been elusive. Proposed solutions involving a repeated process of lifting and refining of adjoining surfaces, such as using scribes, have remained speculative. Fieldwork in 2024 involving excavation and observation of unfinished terrace walls in the Cruz Moqo sector of Sacsayhuaman in Cusco provided direct evidence of this process. The unfinished terraces revealed that the construction process entailed levelling the land that was to make up each terrace such that unworked building blocks could be dragged and placed behind rather than in front of the courses of the wall being built, and that rather than being lifted up and down, the large stones were tilted up to be fitted into place and then laid back on their sides in order to refine the adjoining surfaces. In addition, there is evidence that the Inka applied a layer of clay to the adjoining surfaces to allow them to determine how to shape the edges so that the stones would join tightly.

Ogiewa-Sejnota, Monika [333] see Slusarska, Katarzyna

Ogundiran, Akin (Northwestern University), and Bongumenzi Nxumalo (University of Pretoria, Hatfield, South Africa)

[69] *Ceramic Petrography in Early Osogbo, ca. 1600–1750: Crafting Technology, Regional Exchanges, and Social Complexity in Central Yoruba Region*

Past excavations in the Early Osogbo settlement (central Yoruba region, Nigeria) have yielded an unprecedented diversity of ceramic forms. Located at the crossroads of regional trading and political networks and in the transitional zone between the rainforest and the savanna woodland ecotypes, Early Osogbo served as a buffer zone between the Oyo Empire and the Ilesa Kingdom and was a major regional market center during the seventeenth through the mid-eighteenth century. Three ceramic complexes are represented in the settlement's ceramic assemblage: the Osun, Oyo, and Ife complexes. This study uses thin-section petrography to answer questions about clay and other raw material sourcing and compositionality, manufacturing technology and style, and the relationships between raw material attributes and ceramic forms associated with the three ceramic complexes and tobacco pipes. The petrographic analysis sheds light on the dynamics of craft technology, trade, migration, and the nature of social complexity in a Yoruba formative frontier settlement during the seventeenth and early eighteenth centuries, a period marked by commercial revolution (e.g., a monetized economy, intensified economic specialization, and Atlantic slave trade), increased mobility, refashioning of identities, and political consolidation in West Africa.

Ogundiran, Akin [86] see Ojediran, Olumide

Oikonomou, Ioannis (Hebrew University of Jerusalem), and Ariel Malinsky-Buller (Hebrew University of Jerusalem)

[82] *Site Formation Processes and Depositional Histories of Ararat-I Cave: A Multiproxy Geoarchaeological Investigation*

Understanding the formation processes and depositional histories is fundamental for the interpretation of human behavior, regardless of the richness of the archaeological record. Although low-density sites are often associated with the scarcity of behavioral signals, the interpretative value is of equal importance. Ararat-I Cave preserves such scarce and challenging archive, displaying significant evidence for the regional Middle Paleolithic lifeways. The cave is situated in the Ararat Depression, at the forelands of the Southern Caucasus. This paper explores the formation mechanisms and depositional histories of the cave, aiming to decipher the character, the intensity, and the timing of human activities, as encapsulated in the anthropo-sedimentary record. A multiscalar, multiproxy geoarchaeological framework is incorporated, utilizing micromorphological, sedimentological, mineralogical, chemical, magnetic, and micro-archaeobotanical analyses. This study reveals sedimentation patterns attributed to debris flows and cave roof/wall collapse events, and to aeolian agents, including the contribution of loess and volcanic tephra. Human visits are infrequent, ephemeral, often accompanied with combustion activities, and represent short episodes of occupation in a site habitually visited by (micro-)fauna populations. These results highlight the importance of geoarchaeology as an independent discipline for the investigation of past human activities and occupation patterns through the study of Paleolithic archives.

Ojediran, Olumide (University of Colorado, Boulder), William Taylor (CU Museum of Natural History), and Akin Ogundiran (Northwestern University)

[86] *The Zooarchaeology of Horses and Donkeys in the Old Oyo Empire, West Africa*

The Oyo Empire dominated the mainland of the Bight of Benin between the seventeenth and eighteenth centuries, with animals, especially horses, playing pivotal roles in its sociopolitical power, economy, ecology, and culture. Ede-Ile, located in the rainforest of southwestern Nigeria, was a crucial colony and military frontier of the Oyo Empire. However, the roles of domestic animals in Oyo colonial dynamics have been underexplored. This study presents osteological, paleopathological, and taphonomic analyses of 250 equid specimens from Ede-Ile. Our findings offer significant insights into the roles of equids in the Oyo Empire, highlighting their contributions to transportation and diet, as well as a breeding tradition that produced a small-statured yet robust equid population.

Oka, Rahul (University of Notre Dame)

[59] *No Maritime for YOU? The Analytical Value of "Maritime" as Commercial and Military Activity for Understanding the Evolution and Institutionalization of Global Economies*

The formal definition of maritime specifically pertaining to human activity in the Oxford Dictionary is "connected with the sea, especially in relation to seafaring commercial or military activity." A recent approach (Fleischer et al. 2011) using temperate zone marine subsistence activity as a baseline defines a maritime society as one that meets/exceeds a minimal bar on both the quantity and diversity of marine species extracted *and* the distance and volume of sea-based activities from the shore. In this paper, I argue for restricting the anthropological use of the term "maritime" to the Oxford definition. I show (1) how until the end of the first millennium CE, true "maritime" activities were highly confined (northern Indian Ocean, Mediterranean, South China Seas) and (2) emergence of a global "maritime" only in the early second millennium CE, almost simultaneously in coastal Northern Europe and Asia, and East Africa. I will argue that that restricting the term "maritime" to commercial/military activity has actual analytical value for anthropological analysis of the evolution, institutionalization, and eventual dominance of commerce and conflict in human sea-based interactions. Last, I suggest turning to a comparative relational approach marine subsistence, after Terrell et al. (2003); for example, the Domesticated Marine-Scapes approach.

Oka, Rahul [59] see Morse, Charles

Okanlawon, David (Syracuse University)

[309] *Of White British Traders and Their Local African Mistresses: Entanglements on the Upper Guinea Coast*

The peak of the Atlantic trade, around the seventeenth and eighteenth centuries, saw a mass movement of

people and things across geographical spaces. For the British traders, this period was also characterized by the rise of the Georgian culture of individualism, symmetry, and orderliness. On the Upper Guinea coast, the success of the Atlantic trade mandated an entanglement of the Georgian Europeans with local African women who were deeply rooted in their traditions. Due to its good preservation, and its consistency of British occupation, Bunce Fort, Sierra Leone, remains key to understanding the cultural and economic exchanges of the period. This study, using foodways and its materialities on Bunce Island, explores how these cross-cultural entanglements manifested through foodways and its materialities. By examining the material remains and culinary practices of the period, the research reveals the nuanced power dynamics, gender relations, and class distinctions that emerged from the interactions.

Okumura, Mercedes [236] see Araujo, Renata

Okumura, Mercedes [157] see Constantino Perez, Glauco

Olah, George [119] see Shimada, Izumi

O’Leary, Matthew (Syracuse University)

[309] *Feeding the French Frontier: Foodways at Fort St. Frédéric in the Eighteenth-Century Champlain Valley*
The mid-eighteenth-century French Fort St. Frédéric, on Lake Champlain, loomed large in Anglo-American minds (and histories) as the spear of France’s Atlantic Empire—pointed directly at a heart of trade in the British Atlantic, Albany, and New York City. Yet emic narratives and the archaeological record tell a different story, one centered on agrarian settler-colonialism. Contrasting popular narratives of a “softer” French imperialism focused more on trading with allied Amerindian Nations than settlement, along the Champlain Valley the French Crown attempted to autocratically mimic the successes of the Thirteen Colonies in creating a stable Euro-American population. Study of regional foodways particularly illustrates this; the construction of fortified windmills along the lakeshore and attempts to introduce breeding herds of cattle highlight the degree of the French investment into colonialization of the region. Concurrently, local colonists and soldiers often engaged in illicit strategies to advance their own stations—smuggling furs to Albany to exchange for British trade goods. Formal analysis of ceramic wares and cutlery recovered from the fort’s moats allows insight for comparative study between traditional French rural cuisine and that which was consumed within the cultural and ecological heterogeneity of the Atlantic frontier.

Oliva, Martin [279] see Sedlmayr, Jayc

Oliveira, Cristina [88] see Wallis, Neill

Oliver, Kalei, Rebecca Bria, and Erick Casanova Vasquez (PIARA Peru)

[200] *A Preliminary Examination of Changing Ritual Practice and Value across Multiple Waves of Imperialism in Highland Ancash, Peru (1–1532 CE)*

Preliminary fieldwork in the *comunidad campesina* Yuco in the north-central highlands of Ancash, Peru, has revealed multiple types of ritual spaces spanning the Early Intermediate period to Late Horizon (1–1532 CE), from large public platforms to a series of terraced hilltops featuring gathering places and an estimated 100 burials. Ritual practices in Yuco thus appear varied, raising questions about whether and how this reflects the influence of Wari (700–1000 CE) and Inka (1450–1532 CE) imperialism. Excavation and survey of multiple spaces across the ancient landscape reveal a collection of sites where people lived, worshiped, and buried their dead for 1,500 years. This paper presents findings from test excavations in a large rectangular platform at one site called Usacorral, where marine resources, precious stone, and ceramics indicate ritual offerings of rare and imported goods, as well as survey at the nearby site of Sawanpunku, where platforms and tombs indicate intensive mortuary activities with nonlocal ceramics. By exploring public space, ritual objects, and exchange goods through a study of value, Yuco presents an intriguing opportunity to study how local people endured, coopted, or resisted imperial influences through time in a region where life under Wari and Inka influence is poorly understood.

Olivier, Gwen**[189]** *The Geoarchaeology of Chupadera Arroyo: A Preliminary Analysis*

Climate and environmental changes along Chupadera Arroyo, New Mexico, could provide information to help understand the ~13,400 years of human occupation. A distribution of archaeological sites sits along a modern ephemeral arroyo dating from the Paleoindian period to the Pueblo IV period. This poster aims to create a map resource to prepare for geoarchaeological investigations along the arroyo. Using R and QGIS, the map predicts ideal sampling sites based on regional archaeological, geomorphological, and paleoenvironmental data. The study integrates R with QGIS to create a statistical analysis that illuminates areas of interest on a map database. The R code prioritizes ideal depositional environments, absent paleoenvironmental data, and existing archaeological sites. The long-term goal is to use this map while planning geoarchaeological fieldwork within Chupadera Arroyo.

Olsen, John [332] see Khatsenovich, Arina

Olsen, Nancy (De Anza College)**[334]** *Semiotics for Rock Art*

Semiotics applied to rock art is useful when it is part of an archaeological project because semiotics contributes a framework of principles of communication, methodology, and definitive vocabulary from linguistics for analyzing imagery in a substantive manner. Using these tools from the field of semiotics, three archaeological projects (Hovenweep, PARP, Bandelier Inventory Survey) are revisited to demonstrate how fragments of past human dynamics can contribute more insights to answering research questions.

Olson, Helen**[180]** *Preliminary pXRF Analysis of a Previously Undescribed Obsidian Artifact from Los Guachimontones, Mexico*

There is a previously undescribed artifact type, initially classified as a perforator, that I have recognized as distinct among the excavated collections from Los Guachimontones. The artifacts are long, thin, tapered pieces that appear to be heavily worked and come to a point at one end. They do not appear outside the Tequila Valley, highlighting their localized significance. This study aims to aid in the future characterization of these obsidian artifacts—specifically in understanding their use. I conducted pXRF analyses of the objects to determine their sourcing, as this nondestructive method is effective for characterizing the Tequila Valley's obsidian sources. First, I will discuss their contexts, visual characteristics, and similar examples in other literature. Then, I will focus on the pXRF results to narrow down the possible obsidian sources used to make these artifacts. Since the original study, more complete examples with the same features have been identified at museums or private collections within the Tequila Valley. The contexts, obsidian quality, and skill required to create these pieces suggest they could have been highly valued and reserved for special occasions. I conclude with recommendations for future research to refine their potential use and significance within the region.

Olson, Olivia, and Bonnie Newsom (University of Maine)**[224]** *Investigating Human-Bird Relationships at Frazer Point, Acadia National Park, Wabanaki Homeland, Coastal Maine*

Birds represent a culturally significant, yet understudied clade within Northeast archaeology. In Wabanaki homeland, now known as Maine, USA, ethnohistoric records indicate the importance of birds in influencing seasonal human migration along the coast, the use of feathers in decoration and ceremony, and prominence in oral histories. Despite this, regional zooarchaeological research has focused on describing subsistence records using primarily mammal and fish assemblages. This project establishes the first in-depth socioenvironmental baseline regarding birds in Maine archaeology by investigating the Ceramic period-aged (2700–500 BP) Frazer Point Site (ME 44-49), located in Acadia National Park, which produced a bird bone flute during excavations in the 1970s. We address three interrelated hypotheses: (1) past human-bird relationships are useful indicators of variability in past climate, (2) human-bird relationships extended beyond subsistence based on spatiotemporal settings, and (3) ethnohistoric and oral narrative histories are useful lines of evidence in interpreting past human-bird relationships and can be used to enhance sparse faunal samples. By weaving together both archaeological, ethnohistoric, and ecological evidence, we test the three hypotheses stated above and address Wabanaki descendant community goals and interests.

O'Mansky, Matt (Youngstown State University), Katelyn Pfouts (Trumbull County Historical Society), Savannah Moss (Trumbull County Historical Society), and India Gatts (Youngstown State University)

[216] *Rediscovering the Lost: Ground-Penetrating Radar Survey and Archival Research of Mahoning Avenue Pioneer Cemetery, Warren, OH*

Mahoning Avenue Pioneer Cemetery in Warren, Ohio, may be the oldest cemetery in the Connecticut Western Reserve. The earliest burial dates to 1804, and the small cemetery was in use for nearly a century. Among the nearly 400 people buried there are more than 50 veterans of early wars, including the Revolutionary War, the War of 1812, the Mexican-American War, and the Civil War. Many of these lack grave markers. Overall, more than half of the graves in the cemetery lack markers. While the identities of many of the interred are known, many more are not. Through collaborative research between Youngstown State University archaeologists and researcher staff from the Trumbull County Historical Society, headstones and unmarked graves are being detected through the use of ground-penetrating radar while attempting to identify additional individuals buried in the cemetery through archival research.

O'Meara, Sean [270] see Welch, John

Omigbule, Omokolade (University of Virginia)

[309] *Global Trade, Local People: Black Atlantic Archaeology in the Bight of Bonny (ca. 1600–1900 CE)*

Black Atlantic archaeology on the West African coast has contributed to understanding African participation in the transatlantic and global political economies in the last 500 years. While historical records attest to the Bight of Bonny's significant role in this economic system, its archaeology has the potential to contribute to current debates on African agency in the transatlantic economy. As a step toward exploring the material vestiges of the transatlantic economy in the Bight of Bonny, I present preliminary archaeological and ethnographic data from its major coastal entrepôts: Bonny Island and Old Calabar. I discuss emergent Atlantic entanglements in the region through exotic architecture and accompanying material culture. Drawing on ideas within daily life archaeology, I examine household objects to foreground the role of African elites and non-elites in the Black Atlantic and the Bight of Bonny specifically.

O'Neal, Heather

[223] *Obsidian Sourcing at the Tom Holcomb Site*

Natural resource procurement has long served as a proxy by which archaeologists have sought to understand how prehistoric peoples utilized their landscapes. This project presents obsidian source and procurement data as a component of land use and mobility pattern research in the American Southwest and Northwest Mexico during the Late Archaic period by comparing obsidian source frequencies from the Tom Holcomb site (LA162023) in the Bootheel region of New Mexico to those of a previously analyzed assemblage from Cerro Juanaqueña (INAH Chih 366) in northwestern Chihuahua, Mexico. The Tom Holcomb site is located 80 km northwest of Cerro Juanaqueña and is postulated to be a hunter-gatherer base camp utilized between 930 BC and AD 225. There is currently no evidence to suggest that the occupants of the Tom Holcomb site practiced agriculture. Cerro Juanaqueña is a major settlement that made substantial use of maize agriculture and was heavily occupied between 1300 and 1100 BC. The primary goals of this research are to identify and compare obsidian source frequencies at the Tom Holcomb site and Cerro Juanaqueña and to analyze these data within the context of mobility and land-use patterns in the Southwest during the Late Archaic period.

Onken, Jill (University of Arizona)

[166] *Geoarchaeological Investigations in the Upper Usumacinta Confluence Zone of the Southern Maya Lowlands*
Altar de Sacrificios is situated on a wide alluvial floodplain in a dynamic fluvial environment subject to flooding and channel migration in the Upper Usumacinta Confluence Zone (UUCZ). Mounds in this region often occur in curvilinear groups along past river courses, suggesting ancient habitation followed meandering river channels as they migrated across the floodplain. Post-abandonment meander migration rates appear to be increasing in step with deforestation, providing clues regarding how the Usumacinta River watershed responded to deforestation associated with population growth and agricultural intensification during the Late Preclassic and Classic periods. Geomorphic mapping and alluvial stratigraphy studies suggest ~25% of the

floodplain has been recycled by channel migration since the ca. 950 CE abandonment of the site. These geoarchaeological findings have already helped refine population estimates for the UUCZ, and we anticipate this work will ultimately lead to a better understanding of how the ancient Maya responded and adapted to increasing environmental instability and flood risks. In addition, predictions generated by hydrological modeling have identified archaeological features most at risk of being damaged or destroyed by future channel migration during the next five decades.

Onofre Mayta, José [46] see Kanezaki, Yuko

Onsuwan Eyre, Chureekamol [213] see Lowe, John

Oppitz, Gabriela [157] see Bond Reis, Lucas

Ordoñez, Maria (USFQ)

[26] *The Influence of NAGPRA Abroad: Examples from Ecuador*

The Native American Graves Protection and Repatriation Act (NAGPRA), essential for the ethical treatment of Indigenous remains and cultural artifacts in the United States, has had unintended consequences beyond its borders. This presentation examines the impact of NAGPRA's principles on archaeological and ethnographic research in Ecuador and on Ecuadorian collections abroad. In Ecuador, discussions around the excavation and repatriation of human remains involve diverse groups, including Afro-Ecuadorian grassroots movements, Indigenous nationalities, and mestizo and montubio communities. Although no consensus exists on a single path forward, researchers have developed clear standards for engaging with communities in projects involving funerary contexts. Despite varying degrees of success in documenting and repatriating human remains over the past 35 years, a troubling trend has emerged: Ecuadorian researchers are increasingly expected to conform to North American standards when accessing collections, planning exhibitions, or publishing on related topics. This issue extends to Ecuadorian collections in Europe, where standards of care and ownership are being shaped by NAGPRA, reflecting a form of intellectual colonialism that diverges from NAGPRA's original intent. This presentation explores these challenges and the broader implications of applying NAGPRA-like standards globally, where cultural and legal contexts differ significantly from those in the USA. ***This presentation will include images of human remains.

Oré Menéndez, Gabriela (University of Nevada, Las Vegas), and Morgan Murphy (University of Nevada, Las Vegas)

[123] *Detecting Cerritos: Automatic Identification of Stone Structures Using Multispectral Aerial Imagery in Huarochirí, Peru*

The massification of unmanned aerial vehicles (UAVs or drones) and the development of specialized cameras and sensors for industries like agriculture, public safety, power, or fossil fuel have allowed archaeologists to integrate these new technologies into their practice. While the benefits of UAVs in site mapping—including high-resolution aerial imagery, photogrammetric reconstruction, and multi-angle visualization—are well-established, incorporating multispectral UAVs introduces additional capabilities. These include multispectral data acquisition (G/R/RE/NIR), real-time vegetation health assessment, and, most importantly, sub-centimeter resolution imaging. This study presents a preliminary analysis of multispectral UAV imagery obtained from the archaeological site of Cerritos, in Huarochirí, Peru. We created and used a training dataset for structure identification and conducted a supervised classification analysis to evaluate the efficacy of aerial multispectral data in delineating Cerritos' architectural features. The results are juxtaposed with those derived from conventional RGB photography to assess the comparative advantages of multispectral imaging in archaeological site detection and mapping.

Orengo, Hèctor [341] see Berganzo-Besga, Iban

Orngard, Charles (Iowa State University), Lawrence Todd (GRSLE Inc.), and Daniel Dalmas (University of Utah)**[188]** *Surface Archaeology in the Wilderness: Assessing Interpretation, Significance, Approaches, and the Need for Enhanced Protection*

Developing a realistic understanding of the regional archaeological record and creating high-fidelity models of human land-use dynamics require comprehensive documentation and integration of both underrepresented surface and the often-emphasized subsurface components. Without incorporating data from both, behavioral models risk being only marginally accurate. Since 2002, the Greybull River Sustainable Landscape Ecology (GRSLE) project has recorded over a quarter million surface artifacts in the Greater Yellowstone Ecosystem (GYE), with a focus on remote areas of the Washakie Wilderness within the Shoshone National Forest, Wyoming, at elevations above 2,500 m. This presentation highlights the diversity and complexity of the surface record through data from a 2024 sampling of one drainage system, where over 20,000 surface artifacts—including both temporally diagnostic and nondiagnostic stone tools—were individually mapped and analyzed in the field, diverging from the more conventional site-based approach. This largely non-collection inventory method reveals the critical interpretative value of these oft-underutilized surface data patterns for developing landscape-scale models of past human behavior. The findings underscore the urgent need for the systematic integration of surface materials into archaeological management frameworks, emphasizing their importance for accurately assessing archaeological value and enhancing protection measures.

Orngard, Charles [298] see Downey, Zachary

O'Rourke, Dennis [297] see Ward, Emily

Orozco, Joseph (BCR Consulting LLC)**[381]** *Recessed Religion: The Use of Symbolic Subterranean Features in a Ritual Context*

This paper reexamines sacred space, constructed as symbolic subterranean features by Native Americans of North America. A survey of archaeological literature suggests that although a ritual component is recognized within such sacred spaces, little importance is often placed on the construction and symbolic meaning of the feature. When the feature is critically examined, it becomes apparent that elements of fertility, group emergence, and group placement within the cosmos are believed to be drawn from the symbolic feature by Native North Americans. Ritually deposited votive offerings act as conduits between humans and the spiritual realm connected to the symbolic subterranean features. When comparing the symbolic subterranean features of Native Americans against that of the firmly established subfield of Mesoamerican cave archaeology, it becomes apparent that many traits overlap. I propose that this is not a coincidence, but rather one facet of an Amerindian subterranean complex where group origins are believed to be re-created in symbolically recessed space.

Orr, Andrew (Argonne National Laboratory [ANL]), Konnie Wescott (ANL), Lynn Gierak (ANL), Lisa Oliver (Schriever Space Force Base), and Peregrine Gerard-Little (ANL)**[92]** *A Geographic Information System Approach to Mapping Disturbed Landscapes for Cultural Resource Management: Peterson and Schriever Space Force Bases*
[WITHDRAWN]**Ortega-Muñoz, Allan (INAH)****[283]** *Population Dynamics in Coastal Population of Peninsula of Yucatán*

Paleodemographic analysis has been a useful tool to understand the evolution and adaptability of ancient populations. Because of the historically small number of individuals exhumed in archaeological surveys along the coastal sites in the peninsula of Yucatán, the application of this methodology has been hard to do. Nowadays the number of individuals has grown, and several sites of Late Postclassic times have been surveyed. The goal of this presentation is to show several paleodemographic simulations of the northern coastal populations of the peninsula of Yucatán, focused in Late Postclassic period, when the population reached the peak of growth. I will discuss the results with several ethnohistorical references of the first Spaniards who saw these towns and can explain the fast population growth.

Ortiz, Byron**[190]** *Comparación entre la ruta óptima y el culunco existente entre los tramos Yunguilla y Nanegal*

Esta investigación se basa en estudios y uso de caminos, en la región Noroccidental de Pichincha y la meseta de Quito, desde distintas perspectivas como: la arqueología del paisaje, memoria oral y análisis de la ruta óptima (LCP). Para empezar mi investigación se enfoca en la evolución de los caminos en la región, desde la época precolombina hasta comienzos del siglo XX, y la importancia de la movilidad de grupos humanos a través regiones ecológicas distintas. En segundo lugar, se hace uso de la herramienta LCP perteneciente al software QGIS, para analizar patrones de movilidad, cálculo y modelado de rutas óptimas, que permitan comprender la eficiencia de las rutas óptimas obtenidas por el GIS.

Ortiz-Aguilu, Juan-Jose (Universidad Tecnica de Manabi)**[46]** *The Critical and Chronological Evolution of Donald Lathrap's Archaeological Worldview*

This paper explores the critical and chronological evolution of Donald W. Lathrap's archaeological worldview, focusing on his contributions to the study of the American tropics. This study traces the development of Lathrap's theoretical framework from 1955 to 1987, highlighting the ways in which his intellectual trajectory was shaped by ongoing dialogues with contemporary scholars and emerging archaeological data. Beginning with Lathrap's early editorial work, *An Archaeological Classification of Culture Contact Situations*, published as Society for American Archaeology Memoir 11 in 1955, we see the nascent stages of Lathrap's interest in cultural interactions and in a way sets the stage for his later explorations of complex societal dynamics in the American tropics. Over the subsequent decades, Lathrap's critiques, rejoinders, and reviews provide a window into his evolving understanding of prehistoric cultural processes, particularly in relation to the diffusion of stylistics, the role of horticulture and the unpaid cultural and historical debt to the neotropics that was—and is—largely unacknowledged by both science as well as by popular perception.

Ortman, Scott, Kenneth Vernon (Center for Collaborative Synthesis in Archaeology), and Matt Peeples (Arizona State University)**[385]** *Residential Density and Community Performance in the US Southwest*

One of the simplest and most illuminating properties of human communities is residential density, as it provides a useful summary of many other properties of the associated socio-spatial network. In contemporary societies, fast and low-cost commuting make it challenging to determine community boundaries. In archaeology, the challenge has been to organize the data from dispersed communities in such a way that they can be directly compared with data for aggregated villages and towns. The cyberSW Project has invested in this, and here we present some preliminary findings regarding the effect of residential density for community productivity and resilience.

Ortman, Scott [385] see Bocinsky, Kyle

Ortman, Scott [385] see Giomi, Evan

Ortman, Scott [385] see Peeples, Matt

Ortman, Scott [385] see Vernon, Kenneth

Osborn, Jo (University of New Mexico), Emily Milton (Michigan State University), Beth Scaffidi (University of California, Merced), Joshua Robinson (Boston University), and Jacob Bongers**[193]** *Excremental Gains: Seabird Guano Fertilization in Prehispanic Chincha, Peru*

Did the Chincha kingdom employ seabird guano from the nearby Chincha Islands to feed its growing population and increase its political power? Written sources emphasize the importance the Inca placed on seabird excrement as a fertilizer, particularly in maize cultivation. The Chincha Islands are noted for their abundant high-quality guano, to the extent that control of the islands was internationally disputed during the nineteenth century; however, little is known about local prehispanic guano usage. This study applies isotopic analysis to archaeological Chincha maize cobs and seabird remains dating from the Late Intermediate period (AD 1000–1400) to the colonial period (AD 1532–1825). These data, combined with archaeological and ethnohistoric data, demonstrate the role of guano in prehispanic agriculture on the south coast of Peru. We show that environmental knowledge of guano fertilization practices was likely prevalent by AD 1250 and discuss the potential effect of marine fertilizers on dietary isotopic studies in the region.

O'Shea, John (Museum of Anthropological Archaeology, University of Michigan)**[277]** *Complex Hunting Architecture on the AAR: Construction, Identification, and Documentation*

Constructed features of stone, wood, and other materials are increasingly recognized as a common feature of hunter-gatherer subsistence economies. Such constructions are used to increase both the certainty and quantity of captured animal resources. The detection of constructed features in submerged contexts presents both opportunities and difficulties. On the positive side, the features have recognizable forms and landscape placement, and they can often be detected remotely via acoustic survey. Yet they must still be distinguished from naturally occurring features and their complete form, size, and function may not be obvious. This paper discusses these issues in light of research on the Alpena-Amberley Ridge (AAR) in central Lake Huron. The essence of this experience is that it is relatively easy to identify and ground truth individual constructions, but recognizing when these constructions are integrated into larger game capture complexes is much more difficult. These points are illustrated with reference to four complex game drives and potential fishing weirs detected beneath Lake Huron.

O'Shea, John [277] see Boyd, Matthew

Osorio, Daniela (Universidad de Tarapacá), Calogero Santoro (Universidad de Tarapacá), Emily Milton (Michigan State University), James Steele, and Kurt Rademaker (Center for the Study of the First Americans)**[382]** *Early Human Settlers of the South-Central Andean Highlands during the Terminal Pleistocene: The Megapatch Model*

The high-altitude Andes (>2,500 masl) have been classically rejected as a central landscape for the early occupation of South America because of extreme environmental conditions such as cold temperatures and hypoxia. Most Andean models propose a later exploration of the highlands, conducted by logistical parties that would have first settled the lowlands. Contrary to these ideas, this paper proposes the hypothesis that the south-central Andean high Puna can be considered a *megapatch*, and a possible early corridor for the early peopling of South America. The megapatch supposes that movement by hunter-gatherers, on a larger spatial scale, will occur within regions with rather homogeneous resource patches. These megapatches would have facilitated the fast transfer of landscape knowledge to new areas with ecological features similar to those previously occupied. Having the megapatch as a unifying framework, we draw on the lithic materials found in the earliest highland sites from southern Peru and northernmost Chile to evaluate the existence of a wider cultural tradition across the south-central Andean high Puna. In identifying technological traits shared across this megapatch, we identify specific cultural features of the earliest occupation of this ecological region, including residential base camps during the Terminal Pleistocene.

Osorio, Daniela [382] see McDonough, Katelyn

Osorio, Daniela [382] see Milton, Emily

Osorio, Daniela [382] see Rademaker, Kurt

Osorio Leon, Jose Francisco [303] see Sobrino, Santiago

Ossa, Alanna (SUNY Oswego), and Nathan Wilson**[344]** *Chert Biface Use and Associations with the Middle Postclassic Settlements of Sauce, Veracruz, Mexico*

Chipped stone bifaces and projectile points are found within south-central Veracruz for multiple eras, but the rarer chert bifaces are significantly associated with Postclassic era settlement from the Sauce Archaeological Project and Proyecto Arqueológico La Mixtequilla. I analyze residential inventories from the center of Sauce and its hinterland to describe the structure of exchange and the potential context of chert biface use during the Middle Postclassic period (AD 1200–1350) in south-central Veracruz, Mexico. No production-related evidence has been identified; just finished bifaces and projectile points. There are slightly greater quantities of chert artifacts associated with the Sauce center and mounds nearby. However, chert artifacts are found within all of the settlements sampled by the projects, albeit in very low amounts. Results at present do not support the restricted access of chert with elite dwellings. The size and shape of the chert bifaces are consistent with dart points, rather than the smaller arrows of the region's obsidian points. Chert bifaces

appear to be part of a body of evidence, including changes in figurines, food preparation, a new pottery complex, and settlement patterns that identify Sauce as having many materials, activities, or kinds of warfare new to the region.

Ostahowski, Brian

[345] *Vanishing Sportman's Paradise: The Impacts of Land Loss to Coastal Louisiana's Archaeological Record*

The overlapping deltaic lobes of the Mississippi River formed a rich ecological environment favored by past populations for the exploitation of marine and terrestrial resources as evidenced in the archaeological record. Today, however, coastal Louisiana is experiencing some of the most severe land loss in the United States. The impacts to the coastal archaeological record is nothing short of a crisis. This paper reviews new archaeological research conducted in southeast Louisiana, including studies focused on the detection and preservation of archaeological resources, to better understand settlement systems within and across the deltaic lobes.

Osterholtz, Anna [45] see Martin, Debra

Otani, Hironori [46] see Kanezaki, Yuko

Otárola-Castillo, Erik (Purdue University), Amanda Veile (Purdue University), and Matthew Hill Jr. (University of Iowa)

[289] *Deb Nichols's Legacy of Mitigating Risk: 13,000 Years of Climate Change and Food-Security Strategies in the Great Plains*

Deb Nichols's seminal work on agricultural risk mitigation demonstrates that food-security risk management has been crucial for human survival. This study builds on her legacy. Using a Human Behavioral Ecology perspective, we examine how precontact foraging and farming societies in the North American Great Plains navigated uncertainties brought by climate change between 13,000 and 1000 years BP. Utilizing the novel framework of "Dietary Portfolios," we draw from a comprehensive database of faunal remains from over 500 archaeological sites to explore resource-portfolio diversification as a bet-hedging strategy for managing food-security risk. We also investigate how specific climatic factors, such as temperature, precipitation, and seasonality, influenced these risk-mitigation strategies. Our analyses reveal significant shifts in dietary strategies during periods of environmental stress. For example, we observe a greater emphasis on dietary portfolio diversification during climatic fluctuations. This indicates that precontact populations strategically alternated between resources to mitigate risk in response to climate and resource availability uncertainties. These findings highlight the enduring importance of risk-management practices in human history, echoing the themes central to Deb Nichols's influential research. This study honors her contributions while building on her insights into the critical role of risk-mitigation in human evolution, ecology, and societal development.

Otárola-Castillo, Erik [196] see Peterson, Chase

Otero Santillán, Joaquín [374] see Benzonelli, Agnese

Ots, María José [89] see Steele, Laura

Ottman, Shayleen (ERO Resources Corporation), and Crystal Dreiling (Colorado Parks and Wildlife)

[220] *Land Management, Stewardship, and Traditional Plant Gathering at Fishers Peak State Park, Las Animas County, Colorado*

Exploring a collaborative approach to land and resource management, this presentation showcases a distinctive and ongoing project at Fishers Peak State Park (the Park), one of Colorado Parks and Wildlife's (CPW) newest state parks. In 2019, the Park, assisted by ERO Resources Corporation (ERO), initiated voluntary tribal engagement with tribal nations with historical ties to Colorado. CPW's goal was to solicit input and perspectives on the Park's development prior to implementation, and this level of engagement is the first ever conducted by CPW. Among many insights shared, participating tribes emphasized the lack of

access to traditional plants in their homelands. In response to this, the Park, ERO, and participating tribal nations began collaborative traditional plant surveys in 2023. This presentation discusses the Park's implementation of a traditional plant gathering program, detailing the project's goals, challenges, methods, results, and products. It will highlight the ongoing participation and engagement driving this initiative and will explore ideas for expanding the program in the future. Wider themes of stewardship, resource management, collaboration, and relationship building will also be considered as they relate to this project.

Oudbashi, Omid [49] see Thornton, Christopher

Ouimet, William [369] see Leslie, David

Oujaa, Aïcha [281] see Worthey, Kayla

Overfield, Zack [298] see Short, Laura

Overholtzer, Lisa (McGill University)

[26] *Ancestors, Archaeology, and Ethics in Central Mexico*

While engaging in collaborative fieldwork at Xaltocan in 2009, I was surprised that descendants wished to exhibit all their excavated ancestors in the community museum. Subsequent ethnographic research with Juan Argueta showed that displaying and analyzing the dead was a crucial tool in affirming their Indigenous identities and land rights; my surprise reflected my own positionality as a post-NAGPRA American researcher. In 2018, we argued that refusing to display their ancestors may unwittingly perpetuate colonial practice. In this presentation, I revisit the question of how we should study and care for central Mexican ancestors, considering sensitive subject matter, specifically. I draw on recent conversations with my community collaborators at Tepeticpac, Tlaxcala, after the recovery of boiled and roasted human remains. Indigenous scholars such as Kisha Supernant and Alyssa Bader have demonstrated bioarchaeology's potential in the service of truth, restorative justice, and disciplinary change. In Tlaxcala, Keitlyn Alcantara has similarly linked the bioarchaeology of ancestral cuisine to contemporary food sovereignty. This talk wrestles with archaeological finds that do not so clearly advance such goals, which are especially important in Tlaxcala, where Indigenous conquistador ancestors were vilified by Mexican nationalism as "traitors," and where archaeological narratives can counter this exercise of power. ***This presentation will include images of human remains.

Owens, Emily (University of Montana)

[226] *An Overview and Analysis of the 2024 NAGPRA Revisions*

Section 11 of the National Museum of the American Indian Act (NMAIA) was added to public law in 1989. This required the Smithsonian Museum to repatriate any human remains or funerary objects associated with Native American Ancestry back to their Tribes. In 1990, the Native American Graves Protection and Repatriation Act (NAGPRA) was added to federal legislation expanding on this section and requiring that every federally funded institution in the United States that held Native American remains or funerary objects in their collection must follow this regulation to continue to receive federal funding. Nearly 33 years later in the autumn of 2023 Congress opened a section for comments regarding revising the 1990 legislation, and by January of 2024 revisions were published. This in turn caused institutions to take action to ensure they were keeping up with NAGPRA guidelines. Despite past loopholes, confusion, and discrepancies regarding the repatriation process, it is yet to be seen if the revision to NAGPRA will be beneficial in helping institutions carry out repatriations or if it will cause disruptions as institutions navigate the process. This poster will highlight the new changes, their rationales, and potential impacts of the revisions made to NAGPRA in 2024.

Owens, Mark [127] see Lynch, Elizabeth

Ownby, Mary (Ownby Analytical LLC), and Philip De Barros (Palomar College)

[171] *Cultural Identity and Ceramic Practice in Northern Togo, West Africa*

Togo, West Africa, is a unique cultural landscape with a diversity of groups making and utilizing pottery. This

is particularly true for the Bassar area of northern Togo where four groups interact, the Lamba, the Kotokoli, the Konkomba, and the Kabiye. Several villages continue to make pottery and likely made it in the past. To clarify production locations, ceramic practices, and their connection to cultural identity, pottery from five sites was examined. These are mostly dated from the fourteenth to the nineteenth century AD. However, they were compared to a few earlier wares and, more significantly, to modern pottery from seven workshops. Petrographic analysis was conducted on 65 samples from seven different ceramic wares. This method was ideal as there is geological variability from east to west in Togo with five major formations having distinct rock complexes. This enabled the raw materials utilized for the pottery to be identified and areas of production suggested. Importantly, these areas were within different territories for the ethnic groups. Thus, both specific cultural ceramic traditions could be clarified along with the movement of vessels related to changing dynamics between groups.

Owsley, Douglas [75] see Derry, Emma

Oz, Avishay [99] see Belmaker, Miriam

Ozorio De Almeida, Fernando [172] see Kater, Thiago

Pablos, Adrián [384] see Alcaraz-Castaño, Manuel

Pacer, Riley [189] see Lillios, Katina

Pacheco, Ellen (University of Toronto)

[117] *Ritual Sacrifice in the Ancient Andes: The Role of Humans, Nonhumans, and Sacred Landscapes*

Acts of ritual, including events of ritual sacrifice, are seen as an exercise of power offering something with perceived value to the social world. Within discussions of ritual sacrifice lies a debate on the role in which humans, nonhumans, and the natural and built environment play in shaping prehistoric perspectives of the social and political constructs of being. Such discussions in turn play a key role in archaeologists' ability to define the ontological status of beings. The prehistoric setting of North Coastal Peru provides a range of exemplary evidence of past ritual sacrificial events throughout time. This paper aims to explore and compare evidence of ritual sacrifice from both the Moche (100–850 CE), as well as the Chimú (1320–1470 CE) cultural occupations, and argues that evidence of ritual sacrifice could correlate to a biopolitical perspective. This paper draws on Swenson's (2018) argument of Moche biopolitics at the site of Huaca Colorada within the Jequetepeque Valley, and aims to discuss how evidence of sacrificed children and camelids at the Chimú site of Huanchaquito Las Llamas in the Moche Valley can further be examined through a biopolitical lens. *****This presentation will include images of human remains.**

Pacheco, Mírian [165] see Pansani, Thaís

Pacheco-Fores, Sofia

[346] *Midwestern Lighthouses and Mesoamerican Ossuaries: Toward a Mutually Beneficial Model of Undergraduate Mentorship in Archaeology*

Mentorship and practical research experience are essential for the recruitment, training, and retention of archaeology undergraduate students. The combination of getting hands-on experience in the field and having someone from whom they can seek advice and receive feedback enables undergraduate students to realistically consider future graduate studies and careers as archaeologists. Though mentorship can be a deeply rewarding experience for faculty as well, most academic institutions do not formally recognize undergraduate mentorship in faculty tenure and promotion evaluations. Institutions that do grant some credit to faculty engaging in undergraduate mentorship categorize these activities as "service," the least valued aspect of the academic's workload. While this can make engaging in undergraduate mentorship challenging, in this talk I will discuss two case studies from my own experience mentoring students in the context of (1) an archaeological field school in Minnesota that I co-taught from 2021 to 2023 and (2) an ongoing biogeochemical laboratory-based project investigating migration and ritual violence in Postclassic western

Mexico. I will highlight the benefits and challenges I've encountered in each of these contexts to demonstrate the mutually beneficial nature of undergraduate mentorship for an early career scholar at an under-resourced teaching focused institution. *****This presentation will include images of human remains.**

Pacyga, Johanna

[333] *Landscapes of Care, Landscapes of Power? The Built and Imagined Spaces of Missionization in Ngasobil (Senegal)*

The Mission of St. Joseph in Ngasobil (Senegal) was often framed by as a place of care—for the sick, for refugees, for children, etc. Care was deeply woven into the vocation of the religious personnel living and working in there, and as such is often easiest to consider as an element of a moral framework, in this case particularly rooted in Catholicism and the mandate to missionize. I aim to consider care not simply an ethical or moral practice, but as a potential element and expression of power. I will examine the missionary landscape as one both imagined but also very intentionally built at St. Joseph's and ask why the built environment looked as it did, how it shaped practices of care, and how it communicated and facilitated power (and of whom) through the provision of care. Finally, in examining how acts of care—shaped by European sensibilities and goals, as well as those of Senegambian converts—were inscribed into the mission's built and imagined environment, I will consider whose power was materialized and mobilized at St. Joseph's and who was subject to the impacts of that power. The answer is not as clearcut as one might expect.

Pagano, Victoria, Jon Lohse, Mike McBride (Gault School of Archaeological Research), and Sebastien Perrot-Minnot

[387] *Late Archaic Remains and Their Context at August Pine Ridge Village, Orange Walk, Belize*

This paper will discuss recently conducted research into the Preceramic record that is evident around the village of August Pine Ridge Village in northern Belize. Based on the presence of temporally and technologically diagnostic artifacts, we believe the record here likely spans from approximately 13,000 to 3,000 years ago, or from the Terminal Pleistocene up to the appearance of settled Maya villages. Our project has the opportunity to examine a number of artifacts that have been collected over time by the APR community while also conducting controlled excavations in search of in situ materials. This paper presents our excavation procedures and findings to date, and shares observations regarding the nature of the depositional and archaeological record here; our search for finding discrete, relatively unmixed contexts; and our evolving understandings of the landscape.

Pagano, Victoria [232] see Jalbert, Catherine

Pagano, Victoria [236] see Lohse, Jon

Pagano, Victoria [236] see McBride, Mike

Paige, Jonathan (University of Missouri), and Robert Walker (University of Missouri)

[114] *Tracking the Exposure of Geoglyphs after Amazon Deforestation Bouts Using Deep Learning of Satellite Imagery*

The Amazon rainforest contains an abundant record of human occupation, including evidence of extensive landscape modification and construction of extensive earthworks and roads. However, reconstructing the extent and precise location of archaeological sites is impractical without analyzing either lidar imagery of forested areas or satellite imagery of deforested areas. Detecting and locating these archaeological sites is increasingly important as they are exposed and often destroyed through deforestation and the subsequent effects of agropastoral practices. We discuss approaches to training machine learning models to detect geoglyphs in satellite imagery of deforested areas of the western Amazon. Using a dataset of ~1,300 geoglyph sites, we trained a computer vision model using pre-trained deep learning architecture for object detection on satellite images of those known geoglyphs. That model was then applied to images of tiles extracted from Google Earth and Bing satellite imagery in western Brazil both from deforested areas without evidence of geoglyphs and areas with known evidence for geoglyphs. We discuss the reliability of this approach to detecting archaeological features across such a broad area and its potential in aiding with the management of archaeological resources in a rapidly changing landscape.

Paige, Jonathan [223] see Ferguson, Jeffrey

Paige, Jonathan [223] see Smelser, Noah

Pailes, Matthew (University of Oklahoma), Guadalupe Sanchez Miranda (INAH-Sonora), John Carpenter (INAH-Sonora), and Amy Clark (Harvard University)

[300] *Testing Proxies of Occupational Intensity: Recent Research from the Sierra Pinacate of Northwest Mexico*

This poster presents survey data from recent research in the Sierra Pinacate of far northwest Sonora, Mexico. This region was occupied by O'odham peoples that followed a predominantly hunter-and-gatherer way of life. Remoteness, extreme aridity, and legal protection as a Reserva de la Biosfera result in exceptional preservation in this region. These conditions, in concert with an ethnographic record documenting occupation from the sixteenth to twentieth century provide a unique context to test relationships between various archaeological proxies of site occupational intensity. Specifically, we explore the relationship between overall site size, frequency of architectural remains (windbreaks), and artifact frequencies. In contrast to prior applications, we find site size to be an overall poor predictor of occupational intensity. Conflating factors likely include social etiquette dictating dispersal surrounding the use of reliable water holes and the impact of ritual architecture on site sizes.

Pailes, Matthew [189] see Krug, Andrew

Paine, Richard (University of Utah)

[383] *Investigating Preclassic Invisible Structures at El Mirador, Guatemala*

Invisible structures present serious and difficult to solve challenges for Mayanists. Understanding the place of invisible structures in overall settlement patterns is essential because of their potentially enormous impact on demographic estimates and implications for resource use. Despite a generation of research, we know little about the prevalence, history, or range of uses of Classic period invisible structures. We know far less about Preclassic invisible structures. Invisible structures are widespread at El Mirador, usually consisting of packed, earthen floors associated with Preclassic ceramics, post holes, and evidence of perishable superstructures, but their true extent is unknown due to complications of wide horizontal excavations in dense tropical forest. Excavations of invisible structures at El Mirador reveal a range of construction methods and possible uses and sometimes complicated sequences of construction. This paper discusses attempts to sample invisible structures, comparing GPR and random testing, and excavation of a series of hidden structures within the urban core of El Mirador.

Paiz, Casandra, and Claire Ebert (University of Pittsburgh)

[224] *Go with the Flow: Tracking Water Management and Climate Adaptations in the Maya Lowlands*

Archaeologists have documented correlations between societal change and environmental variability in the Maya lowlands, particularly during significant events like the Terminal Classic "collapse," which has been linked with severe drought. Water-based infrastructure played a crucial role in daily life and the sustainability of ancestral Maya communities, and its construction likely also varied with climate. This study compiles and models published radiocarbon dates associated with water management features from across the Maya lowlands to examine the timing of their construction and frequency of use in relation to periods of drought. Results show that Preclassic (~1000 BCE–300 CE) Maya communities maintained relatively low levels of investment in formal, large-scale water management features until their adaptive strategies shifted at the end of the Late Preclassic, around 1 CE, in the face of multi-century drought. Clear patterns of post-drought construction appear at the start of the Classic period (300–900 CE), and peak around 600–700 CE when elites began investing in constructing reservoir systems in the monumental site cores of major polities. Though the pace of construction slowed during the Terminal Classic, water control likely became more important as a resilient adaptation to population growth, landscape degradation, and climate change.

Palace, Michael (Earth System Research Center, University of New Hampshire), Kathryn Cottingham (Dartmouth College), and Meghan Howey (University of New Hampshire)

[107] *Lakes, Landscapes, and Legacies: Leveraging Landsat for Archaeological Insights*

Archaeologists are increasingly adept at using satellite imagery, commonly using it to find sites and to examine

topography around sites. Using remotely sensed imagery to examine underlying phenomena of potentially linked environmental attributes is, however, underutilized in archaeological research. Previously, we used MODIS imagery (500 m resolution) to examine thermal characteristics of inland lakes (limited to 100 ha+) across Michigan in relation to Late Precontact mounds (ca. AD 1200–1600), these constructions forming a vital part of Indigenous placemaking. Using 10 years of Landsat 8 imagery and its thermal band, we expanded this analysis to 10 ha+ lakes and developed a novel method to examine lake thermal properties. Our multistep analysis allowed us to yield a phase and amplitude estimate for each pixel in our domain. Using a mound legacy dataset and lake polygons, we extracted mean and median values for phase and amplitude. We found significant differences between mound-associated and non-mound lakes. Mounds are on larger lakes and lakes with earlier warming (phase) and higher overall temperature change (amplitude). Assessing these parameters, we can gain new insights into Late Precontact stewardship, harvesting, and horticultural practices. As Landsat 8 imagery is global, our method could be harnessed in research on other past socio-ecological contexts.

Palacios, Horvey (University of Oklahoma), and Raquel Fleskes (Dartmouth College)

[316] *Establishing a Bioethos in Ancient DNA: Situating Knowledges in Praxis and Engagement*

Ancient DNA (aDNA) has evolved into a multidisciplinary endeavor, with geneticists, archaeologists, and social scientists contributing to the compendium of research on degraded biomolecules. Over the past decade, the interplay between these diverse disciplinary perspectives has subsequently placed aDNA in a liminal space, simultaneously enriching and complicating the field. This is best reflected in the diversity of approaches taken in aDNA research, which have resulted in numerous publications regrading best practices for the field. These broadly applicable guidelines have also led to tensions regarding the role of community collaboration, the integration of situated knowledges, and the prioritization of scientific objectivity. In this paper, we argue that broad guidelines are incompatible with aDNA research given the many contexts through which the field intersects. Instead, we propose cultivating a Bioethos for aDNA research that affirms the complex, (often) tense, and specific nature that many individual projects embody. Establishing a framework for research through Bioethos emphasizes the necessity of relational, context-sensitive approaches attuned to the social, cultural, historical, and ecological factors inherent in the research endeavor. This Bioethos harmonizes technological advancements with the values and agency of descendant communities and other invested groups, where cutting-edge science coexists with a commitment to collaborative decision-making.

Palazzolo, Thomas [277] see Reynolds, Robert

Palka, Joel (Arizona State University)

[100] *Protecting Deities and Fortified Sanctuaries: Religion in Mesoamerican Warfare*

Fortified temples, patron deities, and human communities were interconnected in Mesoamerican war practices and theology. This presentation examines the archaeological patterning and Indigenous relational ontology regarding fortifications, sanctuaries, and deity communication in Mexico and Central America. Ethnographic information in this region points to the importance of deities and ancestors for maintaining community well-being and success in war. Mesoamerican combatants protected deities, including their images and sanctuary homes, for they were often captured or destroyed during sieges. Thus, Mesoamerican people placed fortifications around temples and sanctuaries for religious reasons related to warfare, which were beyond political and economic factors. Hence, site fortification was not only based on pragmatic military purposes, but on culturally practical decisions related to protecting deities and divine intercession that influenced human behavior.

Palka, Joel [104] see Brooks, Emily

Pallas, Caitlyn (Archaeometry Laboratory, University of Missouri Research Reactor), Brandi MacDonald (Archaeometry Laboratory, University of Missouri Research Reactor), and Marcello Mogetta (University of Missouri)

[76] *An Archaeometric Investigation of Roman Mortar at the Sanctuary of Venus, Pompeii, Italy*

This paper presents the preliminary results of an archaeometric investigation of Roman concrete architecture in the Sanctuary of Venus at Pompeii. Recent fieldwork carried out by the Venus Pompeiana Project (VPP) at

the site has clarified the chronology of the main temple and ancillary structures, revealing a complex sequence of occupation spanning from the second century BCE (the so-called Samnite period) to the final destruction in 79 CE. A total of 71 samples were collected from features associated with three different building phases to be analyzed for geochemical and physical characterization. The aim is to elucidate the development of concrete construction methods in Pompeian architecture. A range of analytical techniques has been employed to determine the composition, texture, and mineralogy of the mortars, including neutron activation analysis (NAA), Raman spectroscopy, FTIR spectroscopy, and X-ray diffraction. The resulting data allow us to elucidate how technological choices evolved over time and the extent to which recipes and fabrication methods correlate with structural function.

Palmer, Nathan [314] see Rutherford, Allen

Palomo, Juan Manuel [166] see Scholnick, Jonathan

Palonka, Radoslaw (Jagiellonian University, Kraków), and Katarzyna Ciomek (Jagiellonian University)

[368] *Ancestral Pueblo Rock Art in the Sociocultural and Environmental Context: Sand and Rock Creek Canyons in the Canyons of the Ancients National Monument, Colorado, USA*

Castle Rock settlement community, dated to the thirteenth century AD and located in Sand Canyon and Rock Creek Canyon in the Canyons of the Ancient National Monument in southwestern Colorado, has been investigated since 2011, among other things focusing on the studies of relations between settlement, rock art, and landscape. In 2023, based on a few tips from local archaeologists and archival research, our team explored the upper parts of these two canyons, almost unknown previously. Our team revealed poorly known or previously unknown spectacular rock art panels and associated architecture and pottery sherds in a few cases. We recorded more than 20 panels located in difficult-to-access places. Particular panels have been documented with hand tracings complimented by extensive digital photography and partly 3D terrestrial laser scanning. Initial documentation and preliminary analyses led us to change our perception of this Ancestral Pueblo community, including reassessment of its size, demography, and social and religious life. Based on the distinctiveness of these sites, it also opens doors to other questions, for example regarding the meaning of the iconography, but also prioritization of extensive engagement with cliff surfaces such as abrasion, grooving, and drilling over image-making per se.

Panich, Lee (Santa Clara University)

[110] *Thinking through Time in the Archaeology of Colonial Encounters in North America*

Time is a central concern in archaeology, but it is often undertheorized in the archaeology of colonial encounters in North America. Despite the relatively recent onset of colonialism on the continent, current scholarship has shown that commonsense understandings of time can, in such contexts, perpetuate outdated understandings about Indigenous experiences of colonialism while simultaneously normalizing colonial domination. With these critiques in mind, an attention to different temporalities may point toward novel ways of understanding the complexities of the past 530 years. In this paper, we survey current approaches to time in the study of Indigenous-colonial interactions—drawing from a wide interdisciplinary perspective that includes archaeology, history, and Native American and Indigenous Studies—as filtered through our collaborative research projects into how Native Californians dealt with the imposition of colonial missions and their aftermath in the eighteenth and nineteenth centuries. Particular topics of consideration include periodization, time perspectivism, Indigenous futurity, and settler time, among others. The overarching goals of the paper are both to establish a loose typology of approaches to time as well as stimulating further discussion about how we might rethink the temporality of continued Indigenous presence in North America.

Pansani, Thaís, Briana Pobiner (Smithsonian Institution), Gabriela Farfan (Smithsonian Institution), Agueda Vialou (Muséum National d'Histoire Naturelle), and Mirian Pacheco (UFSCar)

[165] *The Price of Santa Elina's Jewels: A Dissonant Noise from American Archeology in the Heart of Brazil?*

The Santa Elina rockshelter in Central Brazil stands for its rich archaeological record, including expressive

rock art, lithic artifacts, and bone and shell artifacts from the late Pleistocene to the Holocene. Our group has been studying the two ground sloths from the shelter (~27,000 cal BP and ~15,000 years cal BP). Through a multi-technique approach, we were able to identify and describe greater details of bone-worked artifacts, interpreted as personal ornaments, which corroborates the growing body of evidence for human settlements older than 25,000 years ago in the Americas, as well as reinforcing the coexistence between humans and megafauna in Brazil. We are currently working on a rigorous protocol that brings together geochemical data with biostratigraphic information and depositional context, as well as possibilities of anthropogenic thermal alteration. SEM-EDS and XRD analyses of burned experimental bones and black bones from Santa Elina confirm that the latter were not stained by minerals. Together with bone microstructure investigation, they are suggestive of burning. Additional analyses are underway so that we can reveal more details about the taphonomic history of these remains.

Pante, Michael [314] see Henry, Edward

Panther, Miranda [275] see Schreiner, Nina

Pappalardo, Jennifer [211] see Jolie, Edward

Para, Heather (New Mexico State University)

[380] *The Significance of Stones: Ritual Reuse of Hearthstones and Monuments in Early Medieval Wales*

Early medieval Wales was a fragmented political landscape, and the threat of incomers from Ireland and Scotland led to an increased sense of urgency among the Welsh *uchelwyr* (elites) to retain their hold on the land. To that end, ancient standing stone monuments were given secondary function as property boundary stones, lending legitimacy to land claims. Standing stones were also reused as sites for elite burial, suggesting connections to a mythic past. These elements of ritual reuse gave the *uchelwyr* deeper attachments to their lands, providing a perceived continuity built on assumed relationships with the past. This paper explores how these practices may have developed out of the ritual significance of hearthstones. The focus of household rituals of death and rebirth and apotropaic efforts to protect the residents of the home, hearthstones also offered evidence of land rights to a nomadic people; generations after departure, returning descendants had the right to claim ownership provided their ancestors' hearthstone remained, even in places where the surrounding structure was in ruin.

Parbus, Brett (University of Georgia, Laboratory of Archaeology), Marcela Demyan (University of Georgia), Grey Cohen (University of Georgia, Laboratory of Archaeology), S. Jordan Cutts (University of Georgia, Laboratory of Archaeology), and Stephen Kowalewski (University of Georgia)

[188] *Archiving and Using the Oaxaca Survey Data Part 2: Synthesizing Spatial and Temporal Data*

This aspect of the Oaxaca Survey project focuses on the construction of a macroregional GIS database for the more than 10,000 archaeological site components and structures from eight systematic regional surveys (1971–2011). Component data originally recorded in the field on aerial photographs and later published as 4 km grid square component maps were mosaiced into a unified geodatabase. This was accomplished through vectorization of the component map grid squares and georeferencing over 300 aerial photographs, all of which was completed using freely available open-source software. University of Georgia Laboratory of Archaeology (UGAL) staff were trained in the use of the Inkscape vector drawing software for converting scans of the component maps into vector data and QGIS for handling the georeferencing of the aerial photos and compiling vector and raster data into a comprehensive geodatabase. While this effort proved to be very time-intensive, it serves as a roadmap for how large legacy datasets can be revitalized and modernized in order to: train and familiarize undergraduate researchers with the modeling of geospatial data; answer questions requiring data at the broadest and narrowest spatiotemporal extents; and to make the results accessible to broad, non-specialist audiences, including those at the K–12 level.

Parfitt, Anne (Southern Methodist University)**[391] *Assessing Chert Source Representation at Early Paleoindian Period Sites in the Northeast: A Multipronged Approach***

This study utilized a systematic, multipronged approach to assess lithic raw material representation at six large, early Paleoindian period sites in the Great Lakes and New England-Maritimes regions. A wide-ranging comparative database of lithic sources from within and outside of the region was used to visually assess source representation at each site. In addition, a portable X-ray fluorescence (pXRF) instrument was used to characterize lithic material, thereby providing a secondary line of evidence with which to evaluate the visual identifications. A small number of artifacts were also submitted for neutron activation analysis. The results indicate that when the pXRF and visual analysis data are combined, they can provide a more confident and specific characterization of the lithic sources represented at each site, compared to the use of either data source by itself. This is especially true for the most commonly occurring lithic materials at each site, the identification of which was supported by both the geochemical and visual analyses.

Pargeter, Justin (New York University), Tyler Faith (University of Utah), Arlen Chase (University of Houston), and Asithandile Ntsondwa (New York University)**[346] *Reflections on Field Mentoring and Diverse Archaeology Student Engagement at Boomplaas Cave***

This paper reflects on a multiyear technical training and capacity-building program at Boomplaas Cave in South Africa's southern Cape region. Boomplaas is one of Africa's flagship Middle and Later Stone Age archaeological sites and provides a unique environment to train students in state-of-the-art field research methods developed through the Human Origins, Migration, and Evolution Research (HOMER) consortium's field training program. Over the past four years, the project has provided 54 predominantly African female undergraduate and graduate students with this unique training opportunity. We have four major goals concerning this training: (1) increase diversity and provide field experience to excellent students irrespective of their financial ability to participate, (2) broaden student perspective to multiple regions and archaeological contexts, (3) provide high-quality field training, and (4) teach a culture of international scientific cooperation. This experience is unique because students work in an environment that crosses national boundaries. This broader context gives students a wider perspective on the "big issues" in human evolution research. Participants in the Boomplaas field training gain transferable technical and analytical skills, an understanding of the transdisciplinary nature of science, an appreciation of the need to operate in international and multi-cultural modes of science, and a life-changing multicultural experience.

Paris, Elizabeth (University of Calgary), Clement Bataille (University of Ottawa), Miranda George (University of Calgary), Roberto López Bravo (Universidad de Ciencias y Artes de Chiapas), and Gabriel Lalo Jacinto (Centro INAH-Chiapas)

[376] *The Diversity of Domestic Dogs in Highland Chiapas: Long-Distance Exchange and Specialized Morphotypes*
As the oldest known domesticated species, dogs and humans have had a shared and enmeshed history in the Americas for thousands of years. By Spanish contact, historic accounts describe named, specialized morphotypes such as the hairless *xoloitzcuintli* and the short-legged *tlalchichi*; many questions remain about the origin and proliferation of these morphotypes through ancient Mesoamerica. Our presentation examines human-dog relationships at Moxviquil and Tenam Puente, two archaeological sites located in highland Chiapas, a region located on the western Maya frontier, historically well-known for its overland trade routes and merchant activity. Our analysis of domestic dog faunal specimens from these sites dating from AD 400–800 identifies miniaturized and hairless dogs, and high proportions of young dogs in ritual contexts. Analysis of $^{87}\text{Sr}/^{86}\text{Sr}$ ratios of archaeological dogs also provides new evidence for the exchange of live dogs to highland Chiapas from other Maya-speaking areas, using our newly compiled strontium isoscape for the Maya area based on random forest regression, and newly analyzed plant samples from central Chiapas. $\delta^{13}\text{C}$ and $\delta^{15}\text{N}$ values from the dog specimens suggest specialized dietary regimes. Our findings support the existence of broad live animal exchanges during the Classic period extending across the Maya region and reaching highland Chiapas.

Paris, Elizabeth [325] see Hernandez, Isabella

Paris, Elizabeth [122] see Primeau, Kris

Parish, Ryan (University of Memphis)**[391]** *Sourcing Benton Bifaces in a Sea of Fort Payne Chert*

Chert provenance has traditionally been understood as the identification of the “type” or geologic formation source of the raw material exploited by past peoples. However, what happens when that chert type occurs over an expansive geographic region? With wide ranging social networks, the Benton material cultural sphere in the Southeast was almost as broad as the natural occurrence of Fort Payne chert, a favored toolstone. The study examines the intra-formatonal source of 69 Middle Archaic Benton bifaces from the Buddy Palmer collection. The results highlight the importance of high spatial resolution source data in identifying human behavior.

Park Huntington, Yumi (Framingham State University), John Warner, and Giles Morrow (Vanderbilt University)**[172]** *Continuity and Change in Relationships between Architecture, Landscape, and Cosmology in the Jequetepeque Valley*

This paper offers new research and theories on relationships between architecture, landscape, and cosmology in the ancient Andes. Previous research has shown how the so-called Acropolis at Jatanca in the Jequetepeque Valley was built to form an almanac viewed along a nearby mountain, Cerro Cañoncillo, with sunrises at the solstices and equinoxes aligning with recognizable and human-made markers on the mountain. In this paper, we show how similar cosmological thinking was adapted to the nearby site Huaca Colorada, built centuries later. There, the ritual center also seems to align the landscape with solar positions. Furthermore, as the Acropolis was built to mimic the shape of Cerro Cañoncillo, Huaca Colorada’s most sacred areas occur at its highest point, apparently paralleling the stone huaca atop Cerro Cañoncillo. Despite such similarities, there are also differences. Huaca Colorada does not align the sun’s path with the mountain for the entire year, and the alignment marker for the southern solstice lies at the mountain’s base rather than its ridge, suggesting a changed significance for the mountain. Sites across the Jequetepeque Valley should be examined both for similarities that reveal continuities and differences that may reveal changes in ritual and social structure.

Parker, Evan (National Park Service)**[231]** *Archaeologies of Value and Inequality among the Middle Preclassic Maya*

The archaeology of value as a theoretical framework has enjoyed a rebirth in recent years, with studies ranging from a focus on commodity value and inalienability, to analyses of the nature of ritual economy and studies of “the good life.” Yet a theory of value can also play an integral role in conceptualizing how and why inequality is manifested in the past. Here, I examine realms of discourse within ancient Maya systems of value, especially during the Middle Preclassic period (1000–350 BC). Domains of value are formulated in diverse array of discursive social forms and practices, ranging from kinship, quotidian ritual, and practices of daily life, yet they can also be framed by political actors actively engaging in defining what is of value in society. By examining shifts in materialized domains of value at the Middle Preclassic Maya village of Paso del Macho, I offer a new model for tracing the “origins of inequality” that proves flexible in what aspects of social life can be examined, and how they can be studied archaeologically.

Parker, Wendy (Bureau of Land Management), and Lukas Trout (Bureau of Land Management)**[223]** *Obsidian Conveyance into Northwest Colorado*

Geographically, northwestern Colorado sits in the confluence of several culture areas: Rocky Mountains, Great Basin, Great Plains, and Southwest. Prehistoric peoples from these cultures have seasonally occupied northwest Colorado since the Paleoindian era and brought with them their technologies and materials. As obsidian does not naturally occur in this part of Colorado, we are given a hint of prehistoric mobility and conveyance of this material when it is found within the context of a site. Source provenance determinations made via X-ray fluorescence spectrometry of obsidian artifacts offer clues on how people came to northwest Colorado. To date, obsidian artifacts sourced to over 20 quarries from Nevada, Idaho, Wyoming, Utah, and New Mexico have been found on sites in this region. Using GIS based assessments, we are able to explore possible least-cost conveyance zones into northwest Colorado from obsidian sources.

Paskulin, Lindsey [288] see Conlan, Christine

Pastor, Alexander (University of Nebraska, Lincoln), LuAnn Wandsnider (University of Nebraska, Lincoln), and Michael Hoff (University of Nebraska, Lincoln)

[189] *Roman Roads in the Vicinity of Antiochia ad Cragum (Southern Turkey): GIS Model Construction and Evaluation*

Antiochia ad Cragum was established in what is today southern coastal Turkey by the Roman client-king Antiochus IV around AD 72. Subsequently, the city and its province was incorporated into the Roman Empire. The “Romanization” of this landscape included construction of an Imperial temple and the civic architecture emblematic of a Roman city. It may also have involved construction of roads. We report on attempts to model potential road corridors using standard GIS least-cost path functions. A partial pedestrian survey of potential corridors during 2024 allows for a provisional evaluation of this model. Land modification owed to erosion and modern agricultural development challenge our ability to recognize past roads as detailed here.

Pastor, Alexander [123] see Wandsnider, LuAnn

Paterno, Sarah [46] see Johnson, Rachel

Patino-Contreras, Alejandro [169] see Moot, Dana

Patino-Contreras, Alejandro [169] see Tokovinine, Alexandre

Patrick, Shelby (University of Toronto)

[214] *Weathering the Storm: Analyzing Thule Trade Dynamics in Response to the Little Ice Age, 1200 to 1800 CE*
Interactions between individuals and material culture present an invaluable resource to understanding not only people’s daily lives but also how they navigated periods of environmental instability. From approximately 1375 to 1800 CE, Thule communities in Inuit Nunangat (Arctic Canada) faced the decreasing temperatures and increased sea ice associated with the onset of the Little Ice Age. A potential strategy for coping with environmental and resource insecurity is increasing trade with extra-local communities to both obtain goods and strengthen social relationships and the intersection of trade goods and climate change has not previously been thoroughly explored in this region. To understand if, and how, the Little Ice Age prompted changes in ancestral Inuit exchange practices, artifact collections from 32 sites in Inuit Nunangat, spanning from 1200 to 1800 CE, were analyzed to answer the question: What did changes in exchange during the Little Ice Age period look like in terms of geographic extent, quantity, and functional categories of items? Developing a thorough understanding of interaction patterns through a proxy of durable trade goods will allow for new understandings of how Thule communities may have used trade as an adaptational strategy in a time of environmental hardship.

Pattee, Aaron [64] see Athanassopoulos, Effie

Paulino, Tristan [173] see Matisoo-Smith, Lisa

Paulsen, Paige (Johns Hopkins University)

[305] *Describing Accessibility Landscapes: GIS Models of Movement Potential in Iron Age Southeast Arabia*

This paper presents analysis of movement potential at regional and local scale to describe the accessibility landscape of Iron Age (1300–300 BCE) Southeast Arabia. Interpreting the reasons for and outcomes of changing settlement patterns rely on descriptions of accessibility. During the Iron Age, permanent architecture first appears in the desert and mountain zones and expansion of the settlement pattern has implications for accessibility, often referenced implicitly in archaeological work: some sites are located in more remote areas, perhaps for proximity to raw materials or distance from rising political complexity in the long-settled hills and coasts, some sites are located possible for trade, overlooking mountain routes or possibly supporting camel transport in the desert. Evaluating the import of settlement pattern requires understanding how people would have moved around their landscape. GIS-modeling provides a consistent

and reproducible method for describing the landscape in terms of pedestrian accessibility. This paper uses two origin-independent methods (From Everywhere To Everywhere models and Accumulated Cost Corridors) to characterize the accessibility landscape of Iron Age Southeast Arabia. This probabilistic, rather than deterministic, approach to describing the accessibility landscape demonstrates regional patterns of movement potential and allows for the comparison of local accessibility landscapes.

Pauly, Andrew (Metcalf Archaeological Consultants), and Jason LaBelle (Colorado State University)

[300] *The Frame Bifaces: Idiosyncratic Caching Behavior in Ancient Colorado*

The Frame Biface Cache consists of three large bifaces found in Logan County, northeastern Colorado. The bifaces were knapped from Flattop chalcedony and are interpreted as late-stage preforms, with fairly flat faces, high width:thickness ratios, and edges that lack finishing work and use-wear. Two of them are very similar in dimensions, but one shows no signs of hafting modification while the other bears two notches low on its sides. The third, however, is distinct in that it is both wider and thinner than the others, knapped from a higher-grade nodule, and flaked with consistent combed patterning. This latter biface is also different in that it alone was recovered in three fragments, of which at least one exhibits signs of post-break utilization. These combined idiosyncrasies complicate multiple lines of inquiry and offer exemplary insight into many of the difficulties associated with the study of lithic caches. This analysis will describe the bifaces in detail, compare them with assemblages from other known Flattop chalcedony caches, and examine their characteristics that simultaneously support and complicate confident associations with such formal descriptors as production stage and typology.

Pavao-Zuckerman, Barnet (University of Maryland), Rachel Briggs (University of North Carolina, Chapel Hill), and Heather Lapham (University of North Carolina, Chapel Hill)

[376] *Human-Animal Interactions in the North American Southeast*

While the southeastern region of North America is home to one of the major centers of plant domestication, no large animals native to this region were added to the global suite of domesticated animals. Domesticated livestock were introduced from elsewhere, both tools of, and accessories to, European settler colonialism. These animals were deposited in the midst of Native engineered and fire-managed ecosystems and a finely tuned adaptive food system built on farming and hunting, not herding. Eurasian livestock were not necessarily received well by Native communities, at least not initially. While some Eurasian plant cultivars were quickly adopted into Native food systems, livestock were frequently ignored, rejected outright, and/or targeted in acts of resistance. The long-term consequences of the introduction of livestock for Native foodways and economies, however, were profound, irrevocably altering relationships between Native people and land.

Payne, Neal (University of Cambridge), Gary Lock (University of Oxford), Sheila Raven (University of Oxford), and Michael Charles (University of Oxford)

[192] *Preliminary Archaeobotanical Results from the Multi-period Site at Marcham (Oxfordshire, United Kingdom)*

Marcham (Oxfordshire, United Kingdom) is a multi-period archaeological site that was excavated by the University of Oxford between 2001 and 2011. In this poster, we present the preliminary archaeobotanical results from 100 samples spanning the site's Bronze Age through Anglo-Saxon occupation, with significant Middle Iron Age and Roman evidence. Iron Age materials originate from a complex series of features including ritual pits, a unique barrel-shaped enclosure ditch, complex pit sequence, and ring-ditches. Roman period material derives from a temple complex and amphitheater, with intriguing nonarable deposits found within a large pit inside the temenos walls. Results highlight a barley and glume wheat (spelt/emmer wheat) dominated arable regime with diverse weed assemblages. The trajectories of cereal crops and arable weeds are explored to reveal the temporal and spatial variation occurring at the site.

Peaple, Mark [173] see Sear, David

Pearce, David [174] see Armitage, Ruth Ann

Pearsall, Deborah

[46] *Charred Wood, Photoliths, Starch Grains, and Pollen Tell the Story of Early Tropical Forest Agriculture at Real Alto*

Southwest coastal Ecuador was a hearth of innovation in the prehistoric New World. By 4400 BC life in SW Ecuador was transformed as sedentary village life, ceramic production, and agriculture came together in the Early Formative Valdivia culture. By middle Valdivia (3000–2400 BC), one village, Real Alto, was transformed into a town of 12 ha, one of the earliest in the New World. Its inhabitants grew maize, squash, gourd, ají, *Canavalia* beans, cotton, yuca, arrowroot, llerén, yam, and canna, and possibly other fruits and tuber crops. But when excavations began at Real Alto 50 years ago, we knew little about how Valdivia people lived, what plants they grew, or even if they were primarily farmers. Donald Lathrap had the foresight to include these questions in planning the Real Alto research. In this presentation I review how paleoethnobotany—the investigation of plant-people interrelationships through study of archaeological plant remains—contributed to our understanding of how Valdivia people lived, what plants they grew, and how they successfully managed an agricultural system that included short season crops like maize, beans, and ajís, and crops like yuca, arrowroot, and llerén that required longer growing seasons.

Pearson, Osbjorn (University of New Mexico), Citlali Tierney (University of New Mexico), Emily Moes (University of St. Francis), Lexi O'Donnell (University of New Mexico), and Keith Prufer (University of New Mexico)

[104] *Settling Down: Alterations in Activity Patterns with Changes from Foraging to Staple Maize Agriculture in Southern Belize*

The Bladen Paleoindian and Archaic Archaeology Project (BPAAP) has recovered human remains spanning approximately 9,000 years in two sites in the Maya Mountains of southern Belize. To investigate changes in limb bone dimensions reflecting changes in biomechanical use across the change to surplus farming, we evaluated external measurements of the femur, tibia, humerus, radius, and ulna, subdivided by sex ($n = 11$ males; $n = 25$ females). Our results show no clear trends in long bone length or femoral head diameter across the transition. However, and in common with diachronic trends elsewhere, the lower limb bones in males demonstrate strong evidence for a substantial decline in mobility with a higher cnemic index (tibia) and lower pilastric index (femur) over time. The increase in cnemic index is equally striking in females. An unexpected finding in the upper limb is that females show a substantial increase in humeral midshaft diaphyseal area between 5000 BP and the adoption of a staple maize diet. Male humeri show no clear trend in the same interval. This suggests that the increases in physical demands associated with agricultural intensification fell disproportionately on women. KMP's research was funded by the Alphawood Foundation and NSF SBE1632061.

Pearson, Osbjorn [320] see Tierney, Citlali

Pease, Christian [45] see Boutin, Alexis

Pecci, Alessandra [296] see Torras Freixa, Maria

Peck, Katherine, Claudine Gravel-Miguel, and Grant Snitker

[114] *Fake It till You Make It: Deep-Learning Detection of Archaeological Features Using Simulated Training Data*
High-resolution digital surface datasets have become increasingly accessible over the last two decades.

Archaeologists have responded by developing methods to streamline locating archaeological sites in these data at a landscape scale. As high-powered computing hardware and cloud computing solutions improve, deep learning models are now a feasible approach to mapping archaeological sites using geospatial big data. However, training a deep learning model requires a comprehensive dataset of annotated features. While data augmentation methods can expand small datasets, there are some archaeological site or feature types for which a training dataset might not exist. This issue becomes a bottleneck for archaeologists who wish to incorporate deep learning into their research and management tool kits. In this paper, we propose several procedural generation workflows to create simulated training datasets for different historic archaeological features (tar kilns, railroad grades, foundations). We then use these training datasets to train U-Net and Mask

R-CNN convolutional neural network models and evaluate each model's metrics when detecting real features in the Kisatchie National Forest, LA. Model performance varies, but successful models generally have high recall and low precision, suggesting that while this approach may have utility, it requires additional fine-tuning and robust postprocessing to be reliable.

Peck, Katherine [66] see Woodhead, Genevieve

Pedersen, Mikkel (University of Copenhagen)

[339] *Ancient Environmental DNA from Meadowcroft Rockshelter*

Meadowcroft Rockshelter, located near Pittsburgh, Pennsylvania, is a significant archaeological site excavated by James Adovasio and his team from 1973 to 1978. The site contains stratified layers of artifacts and charcoal dating from the Historic period back to approximately 17,300 years ago, suggesting early human occupation during a time when the nearby Laurentide ice sheet would have created near-glacial conditions. Despite this, evidence from the site indicates a temperate environment, leading to debates about the accuracy of the radiocarbon dates, particularly due to potential contamination from nearby coal deposits. Critics have questioned the validity of these dates, leaving the site's evidence largely unresolved and Meadowcroft in archaeological limbo. Over the past decade, ancient environmental DNA (aeDNA) has been shown to preserve in sediment even in the absence of fossils and for longer periods of time. Given the sparse organic remains, studying aeDNA at Meadowcroft could provide crucial insights. Here, I present preliminary test data from aeDNA samples taken from the Pleistocene-Holocene transition in the Meadowcroft Rockshelter stratigraphy. We ask is ancient DNA is preserved, what organisms were present, and explore what this can reveal about the peopling of America?

Peeples, Matt (Arizona State University), Kenneth Vernon (Center for Collaborative Synthesis in Archaeology), and Scott Ortman

[385] *Reconstructing Regional Material, Spatial, and Demographic Networks in the US Southwest*

Many recent archaeological approaches to formally reconstructing past regional networks have relied on either spatial data (travel costs or features such as roads/trails) or patterns in material culture similarities and distributions. Spatial distance and material patterns are clearly often related to each other in complex ways, and existing work suggests that different parameters may drive interaction at various spatial and social scales. In this paper, we explore methods for combining material similarity, spatial constraints, and population size into a single common metric of flow probability among settlements using data from the US Southwest from the cyberSW database. Our approach combines common material similarity network methods used in archaeology with non-parametric models of population radiation and expected interaction. Initial results suggest that combining both geographically expected and materially observed interaction into a common interaction metric produces networks with properties that more closely resemble observable empirical social networks (i.e., log-normal degree distributions and modularity) than networks generated by either material or geographic proxies alone.

Peeples, Matt [296] see Davis, J.

Peeples, Matt [385] see Giomi, Evan

Peeples, Matt [302] see Kroot, Matthew

Peeples, Matt [385] see Ortman, Scott

Pelletier, Benjamin (Archaeology Southwest)

[270] *Future of Chaco, Aztec, and Middle San Juan Research*

Since the late nineteenth century, Chaco Canyon, Aztec, and the Middle San Juan have been some of the most intensively investigated areas of the US Southwest. After its rediscovery by Spanish and later American expeditions, Chaco Canyon became a hub for massive excavations, beginning with the Hyde Exploring Expedition and National Geographic Society projects, and later, the Chaco Project, one of the largest multiyear research projects conducted in the region. These projects have produced many well-read publications and a significant amount of gray literature and publicly available data that offer significant opportunities for future research and reinvestigation. Reexamination of older materials with new methods

and tools can offer a more robust understanding of the archaeological record. Investigations like these can also be an opportunity to coordinate research and collaborate with Tribal partners to provide a more complete understanding of archaeological materials and landscapes. Research projects that employ relationships with Tribal partners from the beginning of a project can also examine topics of interest to those partners. In this paper, I will discuss future research opportunities in Chaco Canyon and Aztec, but I will also discuss how these investigations could be conducted in partnership with indigenous communities.

Pelton, Spencer [57] see Mackie, Madeline

Peña, José (Chronicle Heritage)

[119] *Ceramic and Textile Analysis at the site of Santo Domingo, Huarmey Valley, Peru*

The Santo Domingo site comprises a funerary area and a small adobe platform. This site is located on a hillside to the west of El Campanario site, which was occupied during the beginning of the Late Intermediate period. Unfortunately, most of the sites of Santo Domingo had been damaged by modern looting, and various types of archaeological artifacts, including human remains, can be found on the surface. However, archaeological excavations conducted during the 2018, 2019, and 2022 field seasons allowed the recovery of human remains, ceramic sherds, wooden objects, bone artifacts, and textile fragments. This study aims to analyze ceramic sherds and textile fragments to document ceramic styles and observe variations in the manufacturing techniques and decoration, as well as to document plain-weave, decorated, and fine-elaborated textiles. Both analyses were conducted using a digital microscope to observe the ceramic paste composition and textile manufacturing techniques. While Santo Domingo was used during the Late Intermediate period, based on the presence of incise-decorated pottery sherds, foreign ceramic styles suggest the use of the site during the second half of the Middle Horizon, and the presence of camelid fiber textiles and tapestries could indicate coastal-highland interaction.

Peña, José [85] see Holmes, Stella

Peña, José [321] see Long, Holly

Peng, Ruoyu, and Christopher Morgan (University of Nevada, Reno)

[126] *Explaining Differential Settlement Patterning in the Sierra Nevada*

Different ethnolinguistic groups in the Sierra Nevada exhibit substantial variability in settlement patterning, particularly in the intensity of their use of montane and alpine environments. Due to the similarity of environments throughout the range, these differences are not readily attributable to differences in environment or environmental variability. Using expectations derived from central place foraging theory and the ideal free distribution, we explore the degrees to which mobility, habitat suitability, and territoriality conditioned settlement pattern variability across the range. The results of this analysis are then compared to alternative culture-historical explanations for this patterning.

Pengilley, Alana (University of Texas, Austin), Whitney Goodwin (University of Missouri), Brandi MacDonald (Archaeometry Laboratory, University of Missouri Research Reactor), and Fred Valdez Jr. (University of Texas, Austin)

[391] *Establishing a New Database for Chert Raw Material Sources in Northern Belize*

Lithic raw material quality and abundance played a direct role in the decisions of past tool makers, the type of production, and the organization of exchange networks. The results of raw material procurement influenced the tool-making process, whether this be the quality of material accessible to an individual or the availability of raw material. Reference databases that contain information on potential source areas are the backbone of sourcing research and are an essential tool to develop within any new area. While sampling of chert sources is often fraught with challenges, thoroughly sampling potential sources is a necessary first step in understanding how raw material availability affected the way tool producers interacted with the landscape. This paper will discuss the development of a reference database of chert raw material sources across northern Belize, comprising both petrographic and geochemical data of primary and secondary source areas. Additionally, this paper will discuss the application and results of NAA, LA-ICP-MS, and XRF on a select number of geological sources of chert from northeast Belize. The primary goal here is to determine the best

approach to sourcing chert in a region which has largely been understudied in terms of chert sourcing research.

Pereira, Thiago [157] see Bond Reis, Lucas

Peres, Tanya (Florida State University), and Theresa Schober (Florida State University)

[33] *Seventy-Five Years of Archaeology at FSU: Looking Back to Move Forward*

In 1949, the Department of Anthropology was formed by Hale G. Smith who hired Charles Fairbanks in 1954. The original faculty members (Smith, Fairbanks, and John Griffin) were products of the University of Chicago Department of Anthropology Field School and closely associated with the development of academic and scientific archaeology in the United States. These historical associations established a pedigree for a strong national reputation in archaeology at FSU. Smith and Fairbanks are considered pioneers in the field of historical archaeology, Florida archaeology, and US Southeast archaeology. A major research focus in the early years of the FSU anthropology program was on the Florida mission system, a tradition still carried on today. The archaeological collections include one of the largest inventories of Spanish Mission period materials in the world as well as extensive collections of a number of key Florida sites. In this paper we reflect on how we as academic anthropologists in a storied department adapt to this new era of collections care and management.

Peresani, Marco [384] see Falcucci, Armando

Perez, Jason [300] see Wigley, Sarah

Perez, Stefanie (SP Faunal Services)

[207] *A Decade in Bones: One Career and the Realities of Zooarchaeology in CRM*

Zooarchaeologists working in cultural resource management are often tasked with dual roles to be considered full-time employees. Specialized analysis such as those completed by zooarchaeologists are not always a regular part of a project's scope. This may be due to time or budgetary constraints but may also come down to a general lack of interest or understanding in the data potential of faunal remains. While not every site will produce a faunal assemblage, those that do are likely to benefit from detailed faunal studies. In CRM and other nonacademic fields, the task of illustrating the value and possibilities of faunal data is left up to those who are most passionate about this specialization. In this paper, I look back at a decade of work as a CRM zooarchaeologist to detail the ebb and flow of this type of work as well as the possibilities of answering important research questions with zooarchaeological data. I also challenge my fellow zooarchaeologists to consider what additional research questions could be answered by working in collaboration with academic zooarchaeologists. The ultimate question being: how can we improve our working relationships with our academic counterparts to elevate zooarchaeology in our field?

Perez-Gomez, Jose Miguel [291] see Swidorowicz, Roger

Pérez-Martínez, Patricia [291] see Menéndez Iglesias, Beatriz

Perez Rodriguez, Veronica (University at Albany, SUNY), and Ricardo Higelin

[347] *Inequality, Health, and Funerary Practices among the Early Urban Population at Cerro Jazmin, Mixteca Alta, Oaxaca (300 BCE–300 CE)*

The Cerro Jazmín Archaeological Project has recovered the remains of 65 individuals from the Late Terminal Formative (300 BCE–300 CE) city of Cerro Jazmín, in the Mixteca Alta, Oaxaca. From a bioarchaeological perspective, our studies revealed that social inequality was not clearly marked among these individuals based on their skeletal health and stable isotope (dietary) data. Instead, differences, indicative of inequality, lie in the funerary treatment received and the architectural context in which individuals are found. Based solely on skeletal health and stable isotopic data we find that the individuals we have recovered enjoyed an adequate diet regardless of status. We discuss how, even as social complexity increased in the city, the sample of Formative period inhabitants in our study had access to sufficient resources as to have an adequate nutrition. Also, there must have been a good, functioning, and possibly not so unequal food distribution system, which

allowed the city's population to thrive, at least for six centuries. Although this pattern may have changed leading to the city's abandonment in the Classic period, our data presents an interesting case where urbanites, of all kinds, were able to enjoy adequate diets in the face of growing urban complexity. *****This presentation will include images of human remains.**

Perez Rodriguez, Veronica [290] see Chagoya Ayala, Itzel

Perez Ruiz, Francisco [303] see Sobrino, Santiago

Perez Trujillo, Amelia

[386] *Qotakalli: La escondida urbe en el Valle del Cusco Perú*

Qotakalli es un poblado de la época Inka planificado, a partir de una calle principal que también forma parte de un camino secundario que conduce a Wanacaure, Qotakalli se encuentra conformado por estructuras rectangulares divididas por una calle principal, tres secundarias, 27 pasajes transversales y una plaza de ofrendas. Se evidenció dos etapas de abandono, con destrucción de las estructuras y cerámica fragmentada dispersa en todo el piso del recinto como parte de eventos de abandono, posteriormente se convierten a las estructuras en multifuncionales y un crecimiento y hacinamiento con apertura y construcción de mayor porcentaje de estructuras con técnicas ya Coloniales, se evidencia las áreas de actividad diversa: con espacios de culto, talleres de joyería, áreas de vivienda, áreas de producción alfarera, textil, entre otras así mismo el material cultura evidenciado es de procedencia diversa así como se ha registrado material de los constructores: cinceles, buhardas. Plomadas, martillos, etc; de los tejedores: rukis, agujas, piruros, pesas, etc; de los metalurgios y joyeros: escoria de metal un alto porcentaje de objetos de metal como agujas, cuchillos, anillos, dijes, cuentas, espejos, pinzas, etc, así como spondylus en proceso de trabajo y otros como cuentas, dijes, cuarzo hialino, obsidiana, gemas, etc.

Perlmutter, Benjamin [179] see Kinneer, Christopher

Perron, Taylor (Massachusetts Institute of Technology), Samuel Goldberg (University of Miami), Morgan Schmidt (Universidade Federal de Santa Catarina), Michael Heckenberger (University of Florida), and Helena Pinto Lima (Museu Paraense Emílio Goeldi)

[341] *Remote Sensing Reveals Widespread Amazonian Dark Earth in the Xingu Indigenous Territory*

Many rivers in the Amazon are entrenched below the surrounding uplands. This entrenchment, which likely stems from climate variations during Quaternary glacial cycles, shields much of the uplands from seasonal flooding and probably encouraged dispersal of early human inhabitants. It is difficult to measure the extent to which humans modified these landscapes before European contact. One hallmark of human occupation is Amazonian dark earth—nutrient-rich, carbon-rich soil created by past inhabitants. It would be valuable to know the extent of dark earth, given its cultural, archaeological, and environmental importance, but conventional field mapping of dark earth over large geographic areas is impractical. Using ground-truthed locations, we trained a machine-learning classifier to identify dark earth deposits in remote sensing images. Applying this classifier to the 26,000 km² Território Indígena do Xingu (TIX) in the southeastern Amazon region of Brazil, we found evidence for dark earth deposits covering at least 3% of the landscape and extending well beyond previously studied archaeological sites. Dark earth within the TIX may sequester as much as 9 Mt of carbon from human inputs. Our results highlight the importance of conserving dark earth and show that the ancient inhabitants of the TIX modified their environment extensively.

Perrot-Minnot, Sebastien [236] see Lohse, Jon

Perrot-Minnot, Sebastien [236] see McBride, Mike

Perrot-Minnot, Sebastien [387] see Pagano, Victoria

Perrotti, Angelina (Palynology and Environmental Archaeology Research Lab)

[160] *Contextualizing Post-human Arrival Vegetation Shifts with 61,000 Years of Climate-Driven Change in Central Florida*

This study uses pollen, fungal spores, charcoal, and human demographic models to investigate vegetation

change from an iconic 61,000 year record at Lake Tulane, Florida. The pollen record shows oscillations between pine and oak-dominated vegetation, with Heinrich events aligning with peaks in pine, indicating warm, wet climates in central Florida during these times in contrast to the North Atlantic. Our analysis applies new quantitative methods, including topic modeling and state-space models, to assess the impact of climate, fire, and megafaunal extinctions before and after human arrival. We find millennial-scale climate variations, particularly CO₂ levels and Heinrich events, to be the strongest predictors of vegetation shifts, while fire disturbances facilitated ecosystem transformations. Pine woodlands flourished during Heinrich events, while diverse oak-forb woodlands dominated during low CO₂ periods and high megafaunal abundance. The disappearance of oak-forb woodlands between 15,000 and 10,000 years ago coincides with megafaunal extinctions, rising CO₂, and the arrival of humans. However, the evidence suggests that human land use at the end of the Pleistocene had limited impact on widespread vegetation change in Florida. These findings emphasize the complex interplay between natural forces and human presence in shaping ecosystems over time.

Perrotti, Angelina [387] see Harrison-Buck, Eleanor

Perry, Elizabeth (Crow Canyon Archaeological Center), and David Melanson

[108] *Bringing About Change in the Profession and Practice of Archaeology*

The discipline and practice of archaeology in the USA face escalating ethical challenges and calls for evolution and change. Public archaeology can serve as a vehicle to educate according to new norms and values, inspire student interest in ethical archaeology as a career, and enhance academic study with practical training incorporating meaningful work with descendant communities and sovereign Tribal governments. As two non-Native leaders of a nonprofit that constantly interacts with the public, K–12 students and teachers, college and graduate students, and archaeology professionals, we seek to bring about these changes and share our experiences in this paper. We feature one change wrought with challenges but also benefits—evolving beyond archaeology’s persistent colonial practices and lack of descendant community influence to promote trusting relationships and a restorative approach to understanding the human past. We observe that the failure of our discipline to acknowledge and act on the harm caused to Indigenous people is a critical factor holding back the field. The Society for American Archaeology’s Ethical Principles recognizes this and guides our path. We hope our experience will illuminate the compelling need for change and some ways to bring it about.

Perry, Gabrielle (CU Boulder), and Eric Jones

[238] *Wealth Disparity and Soil Erosion: Echoes of Nineteenth-Century Wealth in Modern Agricultural Lands in Madison County, NY*

During the nineteenth century in Upstate New York, waves of immigration from New England, Western Europe, and the South created a landscape of wealth disparity. This research analyzes how that wealth divide experienced by farmers in Madison County relates to the physiography of the region today. Background characteristics of soil and elevation data are used to explore whether possible correlations exist between farms likely to experience lower rates of soil erosion and wealth. Soil erosion is a major issue for farm owners, as this leads to soil degradation, which decreases agricultural productivity. Analysis of surface runoff is used to model the degree to which soil erosion might affect various farms in Cazenovia. GIS datasets such as high-resolution digital elevation models (DEMs), the Soil Survey Geographic Database (SSURGO), and the New York state hydrography feature layer are used as inputs to HEC-RAS to simulate surface runoff. This simulation is interpreted in the context of interpolation between historic land parcels (extrapolated from nineteenth-century census data and land deeds) and modern land parcels to examine how the evolution of the landscape has produced socioeconomic diversity in this corner of rural New York.

Perry, Jennifer (CSU Channel Islands), and Amber-Marie Madrid (CSU Channel Islands)

[198] *Crossing the Nature-Culture Divide in Academia to Enhance Land and Resource Management*

Western ideologies that reinforce nature-culture divides are deeply entrenched in American mindsets and approaches to land and resource management. Resulting disciplinary divides can influence environmental determinations and decisions in ways that ignore or negatively impact cultural heritage. In contrast,

archaeological and indigenous communities understand that human-environment interactions are long-standing, dynamic, and ongoing processes that cannot be easily untangled into a single professional specialization. Across field-based disciplines there is a need to better align with tribal and descendant community worldviews and national workforce demands, requiring professional training programs in higher education to intentionally bridge specialized research gaps and promote cross-disciplinary collaboration. At the course level, this includes the meaningful integration of readings, assignments, and speakers from other disciplines that reflect different approaches to the same areas of focus. At the academic program level, this includes creating and supporting cross-disciplinary, team-taught curriculum, especially relating to fieldwork, as well as embedding working professionals throughout degree programs to promote cross-disciplinary dialogue, training, mentorship, and networking opportunities that are inclusive of different approaches within overlapping areas of professional study. Case studies from California's Channel Islands are presented to provide tangible examples that address feasibility, inclusivity, and positive outcomes.

Perry, Jennifer [218] see Buchanan, Courtney

Perry, Jennifer [155] see Madrid, Amber-Marie

Pestle, William, Allison Sabo, Shouraseni Sen Roy (University of Miami), Stephen Jankiewicz, and Clark Sherman (University of Puerto Rico, Mayagüez)

[233] *Adapting (or Not) to Changing Seas: The Past, Present, and Future of a Southern Puerto Rican Shellscape* Forty-six newly documented anthropogenic shell works, stretching along 1.5 km of a paleoshoreline in the intertidal zone of southwestern Puerto Rico constitute a precontact landscape (a shellscape, if you will) without parallel on the island. Besides evidencing subsistence practices, these monumental features speak to the culturally mediated adaptive strategies of some of the island's early inhabitants (ca. 3000–1500 cal BP). Refinements to the radiocarbon chronology of these works, combined with new geoarchaeological data from nearby marine cores, provide novel insights into the timing and adaptive processes behind the shellscape's formation and use, speaking to the agency and decision-making undertaken in light of environmental change by the maritime hunter-gatherers who built these works over nearly 15 centuries. The addition of recent remote sensing data (multispectral satellite imagery and topobathymetric lidar) provides complementary information on ongoing changes in and around the shellscape, indicating that human-driven climate change is already increasing its exposure and vulnerability to the adverse effects of rising tides, wave action, and storm surges. Lamentably, a continuation of current trends may result in the loss of an irretrievable cultural resource that tells a significant portion of the story of the island's earliest inhabitants.

Pestle, William [199] see Sabo, Allison

Pestle, William [117] see Torres, Christina

Peters, Ann

[45] *Cerro Colorado and the Necropolis of Wari Kayan: Changes in the Significance of the Individual, the Cemetery, and the Landscape*

The Paracas site, on the bay and peninsula of that name, has deep history as a fishing center where ritual linked the Paracas ceramic tradition to the Early Horizon. On Cerro Colorado, Tello and colleagues excavated womb-like, crowded shaft tombs of the Paracas Cavernas mortuary tradition (450–250 BCE). On the steep slope of Wari Kayan, living and storage areas were reused for pit tombs of the Paracas Necropolis mortuary tradition, associated with Topará tradition ceramics (300 BCE–100 CE). Most of the textile-wrapped individuals faced north over the bay. Their textiles and regalia include artifacts and evidence of practices that characterize the early Nasca tradition. What is the strategic importance of these cemeteries, and why were they established here? Why was there a radical shift in tomb forms and their relationship to the landscape? Why do funerary and postmortem rituals for some Wari Kayan tombs consume vast amounts of labor and expertise, constituting the principal evidence for the concentration of social power during the Paracas-Nasca transition? Are changes in demography, bundle structure, and tomb assemblage sufficient to indicate a shift over time in the political role and significance of mortuary ritual at the Paracas site? *****This presentation will include images of human remains.**

Peterson, Chase (Purdue University), and Erik Otárola-Castillo (Purdue University)

[196] *Modeling the Landscape Ranging Ecology of Clovis Groups: A Spatial Analysis of Lithic Raw Material Transport in the Great Lakes Region*

Fluted-point technology, like Clovis, is associated with some of the earliest modern-human dispersals across the Americas. Forager groups utilizing this technology emerged and proliferated in North America approximately 13,000 years ago. Archaeologists generally agree that Clovis groups dispersed their technology broadly from west to east, with recent research suggesting northern-bound routes across the ice-free corridor into Alaska. However, more localized patterns of landscape-ranging behavior still need to be better understood. To fill this knowledge gap, our study analyzes the spatial distribution of lithic raw material discard patterns observed in a robust database of Clovis locations around the Great Lakes region relative to their respective source locations. To understand the observed patterns, we simulated multiple permutations of lithic raw material movement, including acquisition and discard behaviors of Clovis groups, employing a simple Agent-Based Model (ABM). Our objective was to generate expected patterns of raw material spatial distribution, providing multiple testable hypotheses about the ranging ecology of Clovis technology. We then compare the observed raw material distributions with the simulation results using a multinomial model. The study's resulting quantitative parameter estimates allow us to make future testable inferences about how Clovis groups might have utilized the landscape surrounding the Great Lakes region.

Petras, Elysia (Kenyon College), Cara Tercsak (Terracon), and Stuart Wilson (National Trust for the Cayman Islands)

[322] *In Perpetuity: Memories, Stories, and the Material Culture of the Jackson's Wall Site, Grand Cayman*

This poster reports on renewed and emergent social networks developed during two field seasons of archaeological research at the Jackson Wall site on Grand Cayman. Research is sponsored by the National Trust for the Cayman Islands, supporting the first modern terrestrial excavations intentionally centering the history of slavery on Grand Cayman. The project developed from a local desire to learn more about the history of enslavement and the post-emancipation occupation of a site known locally as Jackson's Wall. Few archival documents exist to provide context to the site, with oral history, ethnography, and archaeological fieldwork bringing its history back into public conversation.

Petry Cabral, Mariana (UFMG)

[371] *Worlds of Many People: Following Amazonian Indigenous People toward Archaeologies beyond Humanity*

Amazonian archaeology has produced narratives about the past of Indigenous peoples for over a century, and it has recently attained to Indigenous knowledge systems. Archaeologists working with and for Indigenous communities, as much as the first generation of Indigenous archaeologists in the region, have been challenging some of our basic concepts and practices. I will draw from the work of colleagues, as much as my experience working with the Wajãpi Indigenous people (Amapá, Brazil), to show how archaeological imagination can be challenged into different configurations, and engage with Indigenous knowledge as a political force, committed to Indigenous claims, rights, and resistance. I aim to highlight Indigenous perspectives on material engagements and history making that blurs Western divisions between social and natural sciences, life and not-life. This paper will depart from examples set by Amazonian Indigenous researchers and/or collaborators, to explore how archaeology can engage with Indigenous people and their knowledge, aiming at modes of knowledge production that strengthen Indigenous resistances in the present, and challenge universalizing conceptions of humanity and temporality. I will focus on how such examples have the potential to transform archaeology and un-silence a multitude of different historical narratives about the forest and their beings.

Pettegrew, David [184] see Frey, Jon

Pettem, Silvia [276] see Kosman, Sean

Pettigrew, Devin (Center for Big Bend Studies), and John Whittaker (Grinnell College)

[234] *Is It Possible to Distinguish Spears, Darts, and Arrows in the Archaeological Record?*

The effort to distinguish weapon systems from scanty remains is an ongoing challenge for archaeologists. Advancements in weapon technology remains an important component of debates and theories in topics

related to human evolution, human ecology, the rise of modern behavior and complex social organization. Because most elements of preindustrial weapons are perishable, archaeologists propose a variety of techniques to distinguish weapons from their more durable remains—namely, stone points. This paper reviews the state of the problem and considers the significant hurdles ahead. We also ask what it means to see weapon technologies in the archaeological record in light of recent debates.

Pfannkuche, Sara (Illinois State Archaeological Survey), Michael Smith (Illinois State Archaeological Survey), and Hannah Rucinski (Illinois State Archaeological Survey)

[268] *How Old, Broken Dishes Can Advance Research and Create Citizen Scientists*

Legacy donations can be a collections nightmare for repositories, CRM firms, and museums. Prior to the professionalization of archaeological collection management, donations often arrived without documentation, funding, or even a clear intent to study them. Beginning in 2022, the Illinois State Archaeological Survey (ISAS) initiated a plan to document and verify its 865.2 ft³ of legacy donations to ensure they are inventoried, properly housed, and attached to a funding source. In this way, we hope to make them more accessible and useful to researchers and descendant communities. ISAS chose the Bell Street Privy collection as a test case to see if teaching interested volunteers to properly curate legacy donations could be a successful partnership. ISAS reached out to East Central Illinois Archaeological Society (ECIAS), an avocational archaeology group, to clean, record, inventory, and stabilize the donation of an assemblage excavated in 2001 from a nineteenth-century privy in Alton, Illinois. This presentation will discuss how this project came together, how the members of ECIAS became Citizen Scientists to help protect our cultural heritage, and the research possibilities that historic artifact collections such as this can offer current researchers once they are properly curated.

Pfeifer, Maddison [298] see Lemminger, Jennifer

Pfleger, Gabriella (Arizona State University), Ryan Michael Burke, and Zane McCracken (Arizona State University)

[361] *The Painted Past: An Iconographic Analysis of Pottery at Site AZ U:9:319(ASM)*

The Hohokam of Arizona are well-known for their decorated red-on-buff pottery, which they produced for over 700 years. Throughout this time, red-on-buff pottery production underwent several stylistic changes, including shifts in design and vessel shape, the combination of which can be attributed to specific cultural phases/date ranges. For the Hohokam, the seriation of ceramics is especially well-defined, and many diagnostic features exist to associate a vessel or sherd to a particular cultural phase. Therefore, it is possible to use the ceramic evidence within a site as a proxy to aid in dating the site as a whole. Our project analyzes the red-on-buff sherds collected during excavation of the Mesa Cemetery archaeological site, AZ U:9:319(ASM). The site is a large trash mound located within the Mesa Cemetery and was excavated over three years. The goal of this analysis is twofold. First, we aim to quantitatively describe the dominant design elements found on sherds at the site and positively attribute those elements to the appropriate cultural phase for red-on-buff pottery production. Second, we use the results of our analysis to confirm a date range for the site and see how those results compare to the date ranges provided by other analyses.

Pfouts, Katelyn [216] see O'Mansky, Matt

Phang Del Pozo, Patrick (University of Michigan), and Matthew Tyler Brown (University of Michigan)

[223] *Obsidian Trade Networks in Late Formative (500 BC–AD 200) Cusco: Insights from Muyumoqo*

Despite a lengthy human occupation spanning thousands of years, much remains unknown about the peoples that inhabited the Cusco Region preceding the rise of the Inka Empire. Particularly, the Formative (1800 BC–AD 200) is a critical period to understand the origins of increased inequality in the area as numerous sociopolitical, cultural, and economic developments transformed early societies' subsistence strategies and settlement patterns. At the Late Formative (500 BC–AD 200) site of Muyumoqo in the Chit'apampa Basin, recent excavations have provided new insights into these developments. This residential compound yielded over 2,000 obsidian fragments, which were analyzed using portable X-ray fluorescence (pXRF) to trace their geochemical origins. The analysis revealed that most fragments originated from the Alca-I source, with

smaller quantities traced to the Chivay and Chumbivilcas sources, reflecting distribution patterns observed at other Formative sites in Cusco. This project's results not only underscore the persistence of obsidian as an ideal material for tool making despite its remoteness but also highlight the continuous presence of extensive trade networks connecting settlements throughout Cusco and beyond at a time where increasingly intensive agricultural production, large-scale camelid transportation, and increasing social inequality were reshaping the landscape.

Philips, Madeleine

[294] *Historical Archaeological Approaches to the Basque Influence on the Economic and Cultural Development of the American West*

Popular conceptions of the settlement of the American West have long been associated with stoic cowboys, resolute homesteaders, and even California's tenacious Miner Forty-Niners. These archetypes are representative of the vast region's development through the utilization of its abundant natural resources, including cropland, rangeland, timber, and minerals. Among the diverse immigrant groups who flocked to the American West to take advantage of its economic opportunities were the Basques. As with other diasporas, the Basques continue to maintain a distinct and tangible ethnic identity, and one that has had a lasting impact on the development of the country's mountainous and rural expanse. Initial waves of Basque immigration to the United States began nearly 200 years ago; however, the significant cultural touchstones of these settlers persist to the present day. The Basque emphasis on family and food, a firm connection to the homeland, and sports and entertainment are all themes that are evident both within the modern Basque diaspora and the archaeological record. In historic archaeology, these themes may act diagnostically to identify sites and structures as being associated with Basques and further supply evidence for their influence on the economic and cultural development of the American West.

Phillips, Amy (Draper Natural History Museum)

[190] *Investigating Human Mobility Using Strontium Isotope Analysis*

Climate change is causing alpine ice patches to retreat, revealing rare archaeological and paleoecological materials. In the Absaroka Mountains of northwestern Wyoming, two bows were first recovered from two ice patches in 2015. Both bows date to the Late Prehistoric period. Bow GL7-3, made of spruce (*Picea*) and recovered at 3,431 m asl, dated to 625 ± 26 uncal BP. Bow GL5-3, of pine (*Pinus*) and found at 3,405 m, dated to 160 ± 30 uncal BP. This research tested strontium (Sr) isotope analysis on organic remains from freshwater ice patches to explore human mobility in a place often seen as unlivable today. ^{87}Sr is produced by the radioactive decay of Rubidium-87 from bedrock, which is absorbed by trees through water, incorporating distinct isotopic signatures into their cellular structure. Differences in bedrock age create a variable landscape of Sr isotope concentrations, an "isoscape." This makes it possible to exclude regions of origin. Bows GL7-3 and GL5-3 were analyzed using this technique to determine if Sr isotope analysis can enhance interpretations of plant remains from freshwater ice patches, moving beyond subsistence-based approaches.

Picard, Jennifer (University of Wisconsin-Milwaukee Archaeological Research Laboratory Center)

[74] *Commercial versus Private Life: The Fairchild Family Homestead on the Lake Michigan Dunes, Sheboygan County, Wisconsin*

The Fairchild site, located on dune land along the Lake Michigan in Sheboygan County, was the home of the Fairchild family, who moved from New York state to Sheboygan County in 1846. The family engaged in a variety of economic pursuits, notably including pound net fishing. Investigations of the site, located mere meters from the Lake Michigan shore, were expected to yield information related to the pound net fishing industry, as the Fairchild family had achieved considerable success therein. However, the material culture assemblage instead reflects the mass-produced items which are typical of most domestic assemblages from sites of this time, with few fishing tools identified. Similarly, the faunal assemblage does not reflect the family's success in the fishing industry but rather reflects a typical market-purchased nineteenth-century American diet. These findings reflect the phenomenon of increasing separation of domestic and commercial life in the nineteenth century, particularly for middle-class families, even in cases where commercial activity likely occurred near the residence. Any structures related to fishing on the Fairchild property are lost to time and

Lake Michigan. What is left behind is evidence of a fairly typical middle class nineteenth-century domestic life—and surprisingly few fish.

Picard, Jennifer [37] see Balco, William

Picarelli-Kombert, Matthew, and Isabelle Holland-Lulewicz (Pennsylvania State University)

[87] *A Comparative Study of Oyster Harvesting Practices from Domestic and Nondomestic Shell Middens on Ossabaw Island, Georgia, USA*

Since arriving on Ossabaw Island ca. 5,000 years ago, Gule communities have intricately engaged with their natural environment, creating a diverse array of subsistence practices reflected in the archaeological record, most visibly the consumption and disposal of large quantities of eastern oyster (*Crassostrea virginica*). Gule people living at the town at Middle Place (9CH158) on Ossabaw Island, Georgia, ca. 500–1000 years ago consumed and deposited oyster refuse en masse, forming hundreds of middens that represent different types of occupation within the site itself, including but not limited to mounds, household middens, and long sheet middens. This research utilizes data collected from 20 domestic shell middens and five nondomestic midden contexts to facilitate a comparative dataset on varying shellfishing practices through time and space within a single site. Using the presence and abundance of epibiont activity—i.e., boring sponge and polychaeta worm damage to shells—we evaluate trends in the habitat conditions from which oysters were harvested. Then this data is combined with and compared to data on trends in oyster size and shape from the same contexts to evaluate how these two kinds of datasets can be used to more holistically interpret past oyster harvesting practices.

Piedra Soto, Aitana (Universidad San Francisco de Quito)

[223] *Exploring the Function of Cerro Narrío: XRF for a Raw Material Analysis in Ceramic Production*

The archaeological site Cerro Narrío (2000 BC–400 AD) housed one of the societies that influenced southern Ecuador. Its settlers established significant long distance commercial relationships with diverse areas of the Septentrional Andes. In order to understand the relationship of this group with the surrounding areas, this research seek to answer the following question: Does the pottery from Cerro Narrío constitute an example of local or foreign production? Based on the material excavated by Delgado (2008), a mineralogical ceramic analysis will be conducted using X-ray diffraction (XRF) contrasting the compounds with the minerals in Cañar province. Furthermore, the methodological approach to be used will include artisanal production, due to its capability to dilucidated interrelated factors such as production degree and intensity. The main objective is to determine if Cerro Narrío not only functioned as a ceramic distribution center, or rather as a production center. Therefore, combining ceramic productive modes in relation with the development of social complexity in Cerro Narrío. To conclude, the results of this analysis will provide a better understanding of the importance and function of the site during the Formative period.

Pierce, Daniel, Alan O'Connor (Missouri State University), and Jeffrey Ferguson (University of Missouri)

[223] *Obsidian in Missouri: Updating the Record with New Data*

Obsidian has been used for the production of lithics throughout the world dating as far back as the Paleolithic. Obsidian has even been noted at archaeological sites in the American Midwest for nearly two centuries, despite being over 2,000 km from the nearest source. In Missouri, only 20 obsidian artifacts have been documented in archaeological contexts, only 11 of which have been geochemically sourced. Here we present the results of geochemical sourcing of a newly discovered obsidian artifact from McDonald County, Missouri, in the heart of the Ozark highlands. Discovered in the summer of 2023 by a local collector, the artifact was found at an undocumented site of likely Middle Woodland origin. To determine the source of this artifact, pXRF was used, comparing data with reference samples from throughout North America. Results indicate that this artifact originated from the Obsidian Cliff source in Wyoming. This source is the most common source found in midwestern sites, being identified as far away as Ohio. Beyond presenting the source of a rare Missouri obsidian artifact, this analysis adds to the growing database of archaeological obsidian discovered in the Midcontinent, and provides valuable insight into long distance exchange in the Woodland period Ozarks.

Piezonka, Henny [54] see Windle, Morgan

Pigott, Michelle (Tulane University)

[50] *Expanding the Chronology of a North Carolina Chiefly Landscape Using AMS Radiocarbon Data*

Recent implementations of Bayesian chronological modeling of Indigenous North American archaeological sites have demonstrated the feasibility of this approach when encountering calibration plateaus and reversals, such as the series which spans the fifteenth through sixteenth centuries AD. High-precision dating of this time period is especially relevant to researchers of the North American Southeast, as this coincides with the initial interactions between Late Mississippian chiefdoms and late medieval Europeans. Southeastern American archaeologists who study this period have until recently favored other indirect dating techniques, including ethnohistoric data and the presence/absence of European-sourced materials. This can lead to a conflation of materiality and chronology, erasing Indigenous agency in the construction of history in the early modern world, simplifying the diverse stratagems employed by Indigenous polities. New high-precision AMS radiocarbon data, combined with Bayesian chronological modeling structured by Native materials, spaces, and ethnohistoric data, offer researchers an opportunity to create robust chronological models that push beyond these unfortunate settler-colonial constraints and Indigenous narratives in North American history. Through this method, this paper expands the historical narrative of the landscape of Joara and its neighbors, who dominated the political landscape of western North Carolina before, during, and after early Spanish colonial attempts.

Pigott, Michelle [110] see Clark, Emily

Pigott, Vincent (Penn Museum)

[213] *Enigmatic Copper-Base Cordiform Implements as Markers of Later First Millennium BCE Regional Interaction*

Thailand Archaeometallurgy Project (TAP) excavations (1990) at the 5 ha copper-smelting settlement of Nil Kham Haeng (NKH) in the Khao Wong Prachan Valley (KWPV) in central Thailand, yielded certain enigmatic metal artifacts. They are small, copper-base, socketed implements termed “cordiforms” given their heart-shaped typology. Four of NKH’s 14 burials contained cordiforms, one cluster comprising 60 examples. They are thought to date to the later first millennium BCE. Nothing about them suggests functionality. Sockets are very small. Cordiform blades are only a few millimeters thick and are often mis-cast. Examples were excavated at Noen Din not far from the KWPV and at other sites on the Lopburi Plain (e.g., near Phromthin Tai, Ban Pong Manao). Significantly, two examples were excavated in northeast Thailand at Ban Non Wat (BNW) where lead isotope analysis linked other BNW artifacts to KWPV ore deposits. Contemporaneous cordiforms also have been excavated in Yunnan at Hejiashan. Hypotheses concerning their function are proposed: cordiforms as tradable commodities (a commodity currency?), as ingots, as tomb substitutes for functioning implements, but certainly as markers of trade and/or exchange and of commonly held technological and/or ideological traditions.

Pigott, Vincent [213] see Liu, Chin-hsin

Pigott, Vincent [213] see Lowe, John

Pike, Jean (SITEWORK LLC)

[349] *New Evidence for Mesoamerican Architecture at a Twelfth-Century Chacoan Great House*

Both the nature and the extent of Chaco Canyon’s connections to Mesoamerica have long been debated. While the presence of Mesoamerican cacao, macaws, and copper bells at Pueblo Bonito has demonstrated Mesoamerican interaction, source locations for these items have not been fully determined. Aztec West is a large twelfth-century Chaco-style great house located approximately 90 km north of Chaco Canyon, New Mexico. Analysis presented in this paper utilizes comparative plan typologies and construction techniques to identify Mesoamerican sources. Mesoamerican planning practices evident at Aztec West indicate the presence of Mesoamerican-trained planners and an affinity with Mesoamerican political and religious ideologies. Seen through this prism, varying organizing principles from those utilized at earlier eleventh-century Chaco Canyon great houses can be construed. Shedding new light on the evolution of late Chacoan systems, the architecture of the Aztec West great house indicates increased emphasis on militarism and what may have been a “single-party” authority.

Pilaar Birch, Suzanne [185] see Hassett, Brenna

Pillay, Patricia

[173] *Exploring Human-Animal Ecodynamics across East Polynesia through Multispecies Perspectives*

In honor of Melinda Allen's contributions to oceanic archaeology this paper explores multifaceted relationships between humans and animals across East Polynesia as understood by the archaeological record. Drawing on archaeological, osteological, and ancient DNA evidence, my research traces the co-evolving reciprocal relationships between people, commensal, and native biota that coexist within island environments. I discuss the ecodynamics between past peoples and commensals as well as native and endemic fauna with examples of the Polynesian dog and island avifauna. I explore patterns of extinction, resilience, and adaptation in response to anthropogenic environmental modification. This multispecies approach highlights not only the direct impact of human settlement but also the entangled long-term ecological connectivity between animals and people in shaping an island's biocultural history. The contrasting fates of resilient domesticates versus vulnerable avifauna offer critical insights into indirect and direct human-driven environmental processes. My research builds on the foundations laid by Allen's ongoing contributions to this field, emphasizing the importance of understanding human-driven ecological shifts from a multispecies perspective. Examining the processes that have impacted extinct and persisting species in island environments has important implications for current biocultural heritage and conservation management.

Pimsner, Bryce (Chronicle Heritage)

[298] *Grand Canyon Parashant: Ancestral Pueblo*

A cultural resource survey of Ancestral Pueblo settlements and material culture across 4,500 acres of the Grand Canyon-Parashant National Monument.

Pimsner, Bryce [68] see Burgess, Blaine

Pinto Carballo, Samuel [100] see McNeil, Cameron

Pinto Lima, Helena [341] see Perron, Taylor

Pisanelli, Brenna (Heritage Consultants LLC), David Leslie, Samuel Spitzschuh (Heritage Consultants LLC), and David George (Heritage Consultants LLC)

[121] *Late and Terminal Archaic Cultural Adaptations in Connecticut's Ten Mile River Drainage: A Case Study*

The Late and Terminal Archaic periods in southern New England represent a shift in preferences from interior wetlands to large river drainages. Over several field seasons, Heritage Consultants LLC has excavated a series of sites situated within the Ten Mile River Drainage in western Connecticut. Diagnostic artifacts and radiocarbon dates confirm that the Ten Mile River Drainage was extensively occupied during these time periods. While the sites vary in size and purpose, they provide new information on settlement patterns, resource exploitation, domestic architecture, trade networks, and lithic technologies. As a result, they help to form a larger narrative of a portion of Connecticut that has been largely overlooked from an archaeological perspective. Using the suite of sites within the Ten Mile Rivier Drainage as a case study, this paper investigates settlement and subsistence patterns, as well as technological shifts, that occurred during these time periods within the wider region.

Pitblado, Bonnie (University of Oklahoma), Kaylyn Moore (University of Oklahoma), Cheyenne Widdecke (University of Oklahoma), Reagan Ballard (University of North Carolina), and Farina King (University of Oklahoma)

[346] *Voices of Oklahoma: Mentoring High School Juniors and Seniors to, through, and beyond College*

Sponsored by the Oklahoma Public Archaeology Network, the *Voices of Oklahoma* summer internship program teaches rising high school juniors and seniors about archaeology, a thematic subject (recently, Oklahoma Native American boarding schools), and how the two can intersect. We recruit students from communities traditionally excluded from archaeology, and the program has three goals: (1) to diversify the archaeological pipeline, (2) to create an active network of young people who have learned that archaeology

and heritage can foster social change, and (3) to weave a strong and ever-expanding mentoring and professionalization network that works to help each intern identify and reach their career goals. The program centers on archaeology, but we offer mentorship that takes students wherever they want to go. Our paper describes how the program works, shares a few success stories from our first four classes of interns, and touches on our plans to expand the program in the years to come.

Place, Noah (University of Arizona), and Debra Martin (University of Nevada, Las Vegas)

[343] *The Human Cost of Violence: Exploring Disability and Debility in the Prehispanic American Southwest*
Injury recidivism (increased risk of injury following an initial insult) has been identified as a key factor in determining raid captives within communities when examining violence in the northern American Southwest (Martin 2010; Martin et al. 2008). For the La Plata Valley of New Mexico circa AD 1200, Martin (2010) argues that recidivism is more apparent in individuals with cranial trauma due to the ensuing changes in mood and behavior and explores the physiological and social consequences these individuals (namely, young women) endured. However, these symptoms—caused by traumatic brain injury (TBI)—are never explicitly identified as a disability and are implicitly framed solely through a medical model of disability. Moreover, males who experienced a TBI within the same communities did not show the same rates of recidivism. This suggests that rather than the sequelae of TBI contributing to differences in morbidity and mortality, local community members were likely intentionally debilitating young, nonlocal women to enact their right to maim (Puar 2017) other captives and surrounding communities. By reframing the effects of cranial trauma in terms of disability and recidivism as debility, it allows for further interrogation of intra- and intercommunity interactions in the region and the structural violence involved. *****This presentation will include images of human remains.**

Plank, Shannon (University of Kentucky)

[295] *Teaching Native America in the “Dark and Bloody Ground”: How the Mythological Super-Indian Evades Erasure*

Kehoe’s critiques of academic and popular treatments of the complex of orientations and practices associated with shamanism in particular, and Native religious practice in general, are as relevant today as they were 30 years ago. This paper uses years of student polling and student interviews with Native speakers to explore the challenges of teaching Native America outside of Indian Country at the university level through the haze of the ongoing durable, intensifying, and ultimately destructive hyper-spiritualization of Native people as eco-saints and shamans and the equation of basic armatures of Indigenous religious thought with a contemporary sustainability narrative. It points toward the ways that public learning about Native peoples through that lens suppresses dissent, denies resources, and obstructs understanding of the past of the Western Hemisphere as history on a par with that of the Old World, transforming some efforts to decolonize into a recolonization of Native pasts and presents.

Plaza-Calonge, Maria (Universidad Católica de Chile), and Francisco Garrido (Museo Nacional de Historia Natural)

[374] *Is There a New Metallurgical Tradition in the Atacama Desert? Recent Discoveries in the Copiapó Valley, Northern Chile*

We present new evidence from two metallurgical production sites in the Copiapó Valley, northern Chile, and explore the possibility of a unique metallurgical tradition in this region. The first site, La Puerta Fundición (LPF), features the earliest known metallurgical activity in the Atacama region, dating to the Formative period (100 BC–AD 800). Archaeometric analysis indicates that metallurgists at LPF processed malachite ores with arsenic, sulfur, and antimony impurities. The second site, Viña del Cerro (VC), dates from the Late Intermediate period (AD 1200–1400) to the Late period (AD 1400–1536), with evident Inca modifications. At VC, located on an island hill, metallurgists used impurity-free copper ores, predominantly malachite. Slags from both sites are characterized by heterogeneity and viscosity, suggesting that temperatures between 1000 °C and 1100 °C were reached under oxidizing conditions. Despite the chemical and microstructural variability, which implies relatively unstable working parameters, we propose that the valley’s metallurgists successfully extracted metal in quantities sufficient for small-scale use. We argue that these findings indicate a long-standing metallurgical tradition unique to the Copiapó Valley, dedicated to producing copper on a small scale for both local consumption and export during the Late period.

Plaza-Calonge, Maria [374] see Garrido, Francisco

Pleshet, Noah [362] see Bellorado, Benjamin

Ploetz, Chris (University of Texas Press), Amy Thompson (University of Texas, Austin), Timothy Beach (University of Texas, Austin), Sheryl Luzzadder-Beach (University of Texas, Austin), and Brett Houk (Texas Tech University)

[107] *Interdisciplinary Perspectives on Wetland Dynamics: Investigating Human-Environment Interactions in Ancient Maya Wetlands in Northwestern Belize*

Wetland ecosystems have long played a crucial role in human societies. Using a Historical Ecology framework, we integrate traditional archaeological excavations with airborne and iPhone lidar to explore the paleoenvironmental history in the wetlands of northwestern Belize. We assess soil collected from archaeological excavations and cores within an ancient canal in the Wamil wetland complex to reconstruct paleoenvironments, human-environment interactions, and the temporal sequences of these events. Preliminary AMS radiocarbon dating indicates the canal was used around 250 CE and again around 1650 CE. Geochemical analyses, including loss on ignition, inductively coupled-plasma mass spectrometry, X-ray fluorescence, stable carbon isotope ratios over the dated soil profile, phosphorus, and pH, revealed shifting land-use and farming practices over time. Pollen and microcharcoal analyses further contributed to our understanding of wetland formation processes and anthropogenic activities. Integrating airborne lidar with topographical data from excavation units to the canal enabled a comprehensive visualization, facilitating the development of a model for site formation processes and regional integration of canals and fields. This multidisciplinary approach, combining archaeological data with environmental studies and remote sensing techniques, provides nuanced insights into past landscapes and human-environment interactions, aligning with the session's focus on advancing landscape archaeology through multidisciplinary perspectives.

Pluckhahn, Thomas (University of South Florida), and David Thulman (George Washington University)

[101] *With or Without You: Manatees and People in Precolonial Florida*

The Florida manatee (*Trichechus manatus latirostis*) has been described as one of the state's most famous and iconic animal species. However, the natural history of the Florida manatee is poorly understood. We systematically reviewed the literature for the occurrence of manatee bones from archaeological sites in the state. Our analysis demonstrates that manatees are poorly represented, with reported claims from only around a dozen sites—several of which are problematic owing to poor context, uncertain taxonomic identification, or possible fossilization (suggesting scavenging). We review potential explanations for this pattern but suggest the most likely is simply that manatees rarely extended their range northward from the Caribbean before the modern era. Our study highlights the relevance of archaeology for understanding historical and Anthropocene baselines.

Pobiner, Briana (Smithsonian Institution), Anna Behrensmeyer (Smithsonian Institution), Jarod Hutson (Smithsonian Institution), Holly Little (Smithsonian Institution), and Stephen Maikweki (National Museums of Kenya)

[373] *Developing an Accessible International Taphonomy Reference Collection via a Symbiota-Based Online Data Portal*

Fossil and modern bones and bone assemblages featuring a variety of taphonomic damage are used as comparative materials to help zooarchaeologists interpret evidence of taphonomic processes. However, current information systems used for managing and sharing museum specimen data often lack the necessary structures for clearly documenting the associated taphonomic information. As a consequence, important taphonomic collections may be invisible to the scientific community or underutilized in their host institutions. In addition, the vocabulary used to describe taphonomic features can vary between reference textbooks, datasets, researchers, and institutions. Here we share a project that aims to address these issues, as well as increase discoverability and visibility of these collections, through the development of an International Taphonomy Reference Collection utilizing a Symbiota-based online data portal. Our Symbiota portal currently includes partner collections maintained by the Smithsonian National Museum of Natural History

and the National Museums of Kenya, with plans to connect with other taphonomy collections from across the globe. The collaborative nature of Symbiota portal communities also help to promote shared stewardship, standardized curation practices, and ethical use of taphonomy collections.

Pobiner, Briana [165] see Pansani, Thaís

Podzimek, Faithleigh (University of Nebraska, Lincoln), and Maxwell Forton (Binghamton University)

[291] *Mimbres Influence on Iconographic Expression from the Mimbres Heartland to a Cultural Border Region*

Our project conducts a comparative analysis of Mimbres-style petroglyphs located in the heartland of the Mimbres River Valley, New Mexico, to those found in a cultural border region of the Chiricahua and Pinaleno Mountains in southeastern Arizona. The Mimbres heartland petroglyphs are located on the NAN Ranch in SW New Mexico, a well-documented and prominent place of Mimbres habitation from 750 to 1130 CE. The Mimbres-style petroglyphs of the Chiricahua and Pinaleno Mountains are settled on the far western extent of the Mimbres cultural region and provide a useful comparison of how iconographic expression differs in cultural border areas. Our methods for comparison involve analysis of the design and stylistic elements of each region, determining landscape context, gathering an inventory of diagnostic motifs, assessing the physical accessibility of the petroglyph sites, and considering the relationship between additional associated archaeological sites. Evaluating differences in iconographic expression between the Mimbres heartland and a cultural border region is largely absent from the academic record, indicating a need for this type of research. Our research findings demonstrate the Mimbres influence on petroglyphs in the Mimbres Heartland and a cultural border region to the west.

Poirier, Marcela, Christina Conlee (Texas State University), and Corina Kellner (Northern Arizona University)

[159] *Huaca del Loro: Archaeology and Education in the Las Trancas Valley in Nasca, Peru*

Between June 14 and June 28, 2023, we conducted an educational archaeology workshop near the Huaca del Loro archaeological site, located in Nasca, Peru. This workshop was intended for elementary school children (ages 6–11) from the small towns of Copara and Las Trancas, villages located at a walking distance from the archaeological site. The main goal was to provide children with a diverse set of tools to better understand the teaching of history during their formal education, taking into consideration the archaeological landscape that surrounds them daily. During these two weeks we conducted five different workshops: (1) Introduction to archaeology, (2) Visit to Huaca del Loro, (3) Ceramics, (4) Bones and funeral contexts, and (5) Recap of everything learned. In addition, on the last day of our workshop we had a show and tell with all the work displayed for them and their families to visualize. The idea with these different workshops was to slowly start escalating, for children to start accumulating knowledge that would help them better understand the next workshops, and later, the teaching of the past. *****This presentation will include images of human remains.**

Poister, Nicholas [224] see Valdez, Richard

Pollack, David [337] see Rossen, Jack

Polson, Nikki (Federal Railroad Administration)

[95] *Unraveling the Mystery of the IOPR21 Collection, American Falls Reservoir, Minidoka Project, Idaho*

The Upper Snake Field Office of the Bureau of Reclamation manages a modest number of artifacts in its museum property collection. In 2023, an independent researcher identified a collection from IOPR21 that had been collected in the 1960s and stored in a repository without being attributed to Reclamation's ownership. The collection has now been transferred to Reclamation's care and became an immediate research interest due to the number, type, and chronological spread of lithic artifacts. This paper will examine the projectile points, bifaces, and flake tools of this previously unknown collection spanning more than 11,000 years of prehistory to examine shifts in technology and mobility patterns over time.

Polyukhovych, Yuriy (Taras Shevchenko National University of Kyiv), Maksym Styuflyayev (V.N. Karazin Kharkiv National University), and Marie Stadnik (Taras Shevchenko National University of Kyiv)

[166] *Lords of the Banks of the Great River: Epigraphy and Art of Altar de Sacrificios*

In this report the authors present their interpretation of the history of Altar de Sacrificios from the first textual records to the collapse of the Classic Maya civilization. Although the corpus of local monuments was published by John Graham back in 1972, the information contained there requires careful analysis and reevaluation. The new documentation of hieroglyphic inscriptions carried out as part of the Proyecto Arqueológico Altar de Sacrificios Project (PAALS) has made it possible to discover and clarify many details of the city's dynastic history. Much attention will be given to the external contacts of Altar de Sacrificios rulers with Tikal, Motul de San José, and other political centers. The epigraphic commentary will be complemented by an iconographic analysis of local artifacts, particularly the famous vase K3120, found by Harvard archaeologists in the tomb of a noblewoman at Altar de Sacrificios that originally belonged to the ruler of Ik'a' (Motul de San José).

Pomedio, Chloé

[330] *Una aproximación a la metalurgia prehispánica en la Sierra de Manantlán, Jalisco / An Approach to Prehispanic Metallurgy in the Sierra de Manantlán, Jalisco*

En la Sierra de Manantlán y sus valles aledaños, consta la presencia de artefactos metálicos que datan del periodo prehispánico. Cascabeles, pinzas, agujas, hachas, orejeras y figurillas antropomorfas de cobre, bronce, plata y oro —o alguna otra aleación— provienen de diferentes contextos y colecciones de la región. Desde los trabajos pioneros de Hosler, se estableció una cronología de la introducción y desarrollo de la tecnología metalúrgica desde Suramérica hacia el Occidente mesoamericano, haciendo énfasis en el papel del imperio purépecha. Estudios más recientes sobre Aztatlán amplían el panorama en cuanto al desarrollo de esta tecnología en el Noroccidente mesoamericano, lo que nos lleva a cuestionar la agencia del Sur de Jalisco en estas dinámicas metalúrgicas. En efecto, se tienen registros coloniales tempranos de explotación de minas de cobre para la Sierra de Manantlán, así como el registro en contexto estratigráfico controlado de un pozo cuyas características podrían corresponder a las de un horno de fundición. Sumadas a la presencia de artefactos, estas evidencias constituyen un primer paso importante para tratar de entender las modalidades de la producción metalúrgica en esta región, en el contexto del auge del horizonte Aztatlán.

Ponce, Jocelyne (Tulane University)

[185] *Trailblazers of the Maya Region: A Historical Overview of Women in Guatemalan Archaeology*

This paper explores the pivotal contributions of women in shaping professional archaeology in the Maya region, with a particular focus on Guatemalan archaeology. Historically, some entered the field as wives of male archaeologists. However, during the development of professional archaeology in the twentieth century, women were among the first to earn formal qualifications. This transition not only challenged traditional gender roles but also catalyzed broader changes in the profession. Today, women hold a wide range of positions within Guatemalan archaeology. By tracing this development, the paper highlights the enduring influence of these pioneering women and underscores the progress toward gender parity in the field.

Pons-Branchu, Edwige [174] see Vandeveld, Ségolène

Pontillo, Katharine (University of Exeter, UK), and Sergio Ayala

[189] *Data Recovery at 41HY6: Preliminary Site Function Analysis in a Multicomponent Site of Central Texas*

41HY6 is easily identified by a large, domed midden, containing cultural deposits spanning the Middle and Late Archaic and Late Prehistoric periods. However, beneath the midden are deeper components associated with the Paleoindian and Early Archaic periods. Evidence of chipped stone tool production is consistently found both vertically and laterally throughout the buried components. This research seeks to understand how the density and patterns of chipped stone tool production and use reflect and relate to the site's function in this locality over time. This poster presents the preliminary phases begun in this investigation, including data recovery efforts and analytical methods, and explores how our future analyses of 41HY6 may inform interpretations of similar sites in Central Texas.

Pool, Christopher (University of Kentucky)

[289] *It's Still Complicated: Further Reflections on Formative Central Mexican–Gulf Olmec Interaction*

This paper honors Deborah Nichols's legacy of research on craft production, exchange, and Formative period interregional interaction. In 2015 Stoner and Pool called for an "Archaeology of Disjuncture" to refocus attention on variation in intra- and interregional interaction, illustrating the approach with the case of the Classic period of the Tuxtla Mountains in southern Veracruz. Here I extend application of the disjunctive approach into the Formative period of the southern Gulf lowlands, focusing primarily on interactions with central Mexico, and incorporating a Communities of Practice perspective on the formation and disruption of attendant horizon styles. Prominent models of Formative highland-lowland interaction grounded in paradigms of culture history and world-systems theory tend to treat the southern Gulf lowlands as a unitary entity represented at any point in time by a single preeminent Olmec site. Although temporal disruptions in regional settlement systems are widely recognized, economic, political, and stylistic or symbolic interactions are often modeled as a tightly bundled whole. In this paper I seek to refine models of Formative period interregional interaction drawing on evidence for significant variation among communities and institutions in the southern Gulf lowlands with respect to their external relations.

Pool, Christopher [337] see Johnson, Emily

Pool, Christopher [289] see Rodríguez-Alegría, Enrique

Poole, Meredith (Colonial Williamsburg Foundation)

[365] *Wishful Thinking: Crystal, Coin, or Cache: Interpreting the Evidence at Williamsburg's First Baptist Church*

Colonial Williamsburg's Department of Archaeology has been engaged since 2020 in the excavation and analysis of the First Baptist Church, site of one of the first churches in the nation established by and for an enslaved and free Black congregation. Excavation around the door of that structure recovered artifacts that could be interpreted as components of spirit deposits: a quartz crystal, coin, and straight pins. Interpreting such materials can be complicated, raising questions about association (real or attributed?) and placement (intentional or wished-for?). This paper will examine the significance of these artifacts individually, as well as possible connections between them. Primary discussion, however, will center on the location of these artifacts at the doorway of a church, an apparent syncretism. How did congregants shape and express their spiritual beliefs as they moved from outdoor worship to the confines of an urban church? Importantly, how can archaeologists work with congregational descendants to understand the evidence?

Popelka Filcoff, Rachel [174] see Green, Helen

Popovici, Catherine (Indiana University, Bloomington)

[172] *Meteorology, Maya Sculpture, and the Instability of Place*

In situ monuments are normally understood as static and fixed; yet, they are constantly interacting with an atmosphere in flux. Rain, fog, and clouds quickly morph and change at different elevations, amplifying or hindering the aesthetic experience of stone sculpture. This paper explores how localized weather phenomena operated as a cultural function of ancient Maya sculptures and their role in placemaking. Across a series of case-studies, I reread the physical and conceptual placement of Maya sculpture within and against variegated weather conditions. Ultimately, I argue for a more expansive understanding of how Maya sculpture makes place, and how this sense of place was mutable.

Popp, Theresa, and David Byers (Utah State University)

[372] *Protein Movement and Artifact Contamination in Geological Contexts*

Protein residue analysis has been used by archaeologists over the past 30 years to link biological residues on artifacts with past human behaviors. There has been ample attention placed on identifying protein residues to prey taxa, but little attention has focused on protein movement and survivability within sediments and how geological processes can impact the contamination of buried artifacts with biological residues. Through a contamination experiment setup to test these factors, protein was found to move through sediment in large enough concentrations to elicit positive cross-over immunoelectrophoresis (CIEP) results on simulated artifacts. Our results suggest that protein contamination can occur through noncultural processes and that

archaeologists should use protein residue analysis as a complementary line of evidence.

Popp, Theresa [126] see Byers, David

Popper, Virginia (Fiske Center UMass Boston), and Renae Campbell (Asian American Comparative Collection, University of Idaho, Moscow)

[337] *What Fell through the Floorboards: Botanical Remains from Pon Yam House, Idaho City*

Much of what we know about the foodways of Chinese migrants in western North America comes from urban centers on the West Coast. This study focuses instead on botanical remains from the Pon Yam House in the remote mining community of Idaho City, Idaho. Located at 3,907 feet in the ponderosa pine forest and 30 miles or more from the nearest rail line, the Pon Yam House operated as both a store and restaurant. From 1873 to 1904, it provided a wide selection of Chinese and European-American foods to the Chinese miners who had been drawn to the Boise Basin by the Gold Rush of 1863. Pon Yam ordered large quantities of merchandise from as far away as China and the West Coast, as well as from nearer, lower-elevation farms, which required a one- to two-day trek by packtrain over the final leg to Idaho City. These goods provided Chinese residents and miners in the Basin with the means to maintain healthy diets infused with elements of cultural tradition and local resources.

Porcayo-Michelini, Antonio (Centro INAH Baja California), and Matthew Des Lauriers (California State University, San Bernardino)

[382] *The Paleo-Peninsular Tradition of Baja California, Mexico*

A territory surrounded by seas, with extensive coasts, mountain ranges, and deserts, hostile and extreme environments, remote and rugged, a true “dead-end” of about 1,250 km in length, in the past hosted a very unique and singular tradition that developed throughout this “inhospitable” landscape. Traditions from Southern California, such as the so-called San Dieguito culture, which was thought to be one of the oldest and had extended from there to the northern part of Baja California; recent archaeological research has shown that this culture is only the most marginal and northern part of another that originated within the Peninsula about 13,000 years ago and lasted until about 8,000 years ago. There are several elements that identify it, perhaps the most representative being the lithic artifacts with very sophisticated technology for their elaboration. However, the wide distribution throughout this landscape of all its material elements present on islands, coasts, valleys, mountain ranges, and deserts is what allows us to define it as a unique Paleo-Peninsular Tradition of the American Continent.

Porcayo-Michelini, Antonio [292] see Des Lauriers, Matthew

Porcayo-Michelini, Antonio [56] see Duarte, Claritsa

Porter, Samantha (University of Minnesota), Morgan Roussel (Leiden University; Paleocraft and Skills Company), Marie Soressi (Leiden University), and Gilbert Tostevin (University of Minnesota)

[384] *Entrer Trois to Trois-D: Comparing Châtelperronian and Protoaurignacian Blade Technology*

We know that Neanderthals and Anatomically Modern Humans were exchanging DNA, but were they also exchanging ideas? In this paper, we investigate this question by comparing lithic technology across the so-called “Middle to Upper Paleolithic Transition” in western Europe. Assemblages studied include La Rochette couche 7 (Mousterian of Acheulean Tradition), Abri Peyrony layer L-3A (Mousterian of Acheulean Tradition), Roc-de-Combe couche 8, Les Cottés US 6 (Châtelperronian), and Les Cottés US 4inf (Protoaurignacian). First, we use data derived from 3D models of cores attributed to the Châtelperronian and Protoaurignacian to quantitatively test three hypotheses about differences between the two technologies. Second, we will include these data in a larger attribute-based analysis employing the Behavioral Approach to Cultural Transmission (BACT) to test the hypothesis that the Châtelperronian evolved from the MTA via influence from the Protoaurignacian. In the BACT, attributes of assemblage technologies are compared within analytical domains corresponding to early and late phases of production. Combinations of similarities and differences between assemblages in these domains theoretically correspond to different levels of social intimacy between groups. Finally, we discuss how these analytical techniques could be applied to different questions within the broader study of the Aurignacian.

Portillo, Eduardo, Mario Zimmermann (Boise State University), and Lilia Fernandez Souza (Universidad Autónoma de Yucatán)

[192] *Stew or Steak: The Recovery and Interpretation of Chemical Profiles from Meaty Products in Pottery*

Subsistence and foodways have been the focus of many archaeological studies because both are part of the most intimate of day-to-day life. Particularly, the study of meaty foods provides information about social status and differentiated access. In this sense, chemical residues are indicators that help us understand ancient diets, as well as social and ecological relationships. Nonetheless, the analysis of chemical residues has interpretative as well as cost limitations for many archaeologists. This is why we designed an experimental study to evaluate diagenetic processes, chemical interactions, and methodological issues with the ultimate goal of better understanding the record of archaeological residues. We cooked chicken, turkey, catfish, dogfish, and mussels in contemporary pottery. Samples were taken from the base, body, and rims, and analyzed via pH, phosphate, fatty acid, protein, and nitrite tests. In our archaeological study, jars from domestic contexts were analyzed for protein residues. The corresponding results present several interpretative challenges when approaching the question of jar contents. Our experimental study demonstrates that differences in protein concentrations could be related to both the quantity and quality of processed meat. Hence, additional experimental work is required to better elucidate the meaty contents of archaeological pottery.

Portman, Katie [270] see Welch, John

Potter, Ben [279] see Lanoë, François

Potter, James [68] see Roady, Kegan

Pottroff, Christy [70] see Slater, Donald

Powell, Noah

[179] *How Researcher and Collector Collaboration Helped Document the First Clovis Points in the Upper Gunnison Basin, Colorado*

Although Folsom and subsequent Paleoindian groups are well-represented in the intermountain basins of the Rocky Mountains' western slope, Clovis has sometimes eluded archaeologists in those resource-rich environments. The Upper Gunnison Basin (UGB) of Colorado's southern Rocky Mountains is one such place where Clovis exists only in whispers and not in formal archaeological records. This paper presents the findings of a study of Paleoindian projectile points from private collections in UGB that suggests that this "absence" is not caused by a lack of Clovis artifacts but instead by archaeologists failing to leverage data contained in the display cases and shoe boxes of the residents most familiar with the landscape. Through collaboration with those residents, in the summer of 2024, I confirmed anecdotal reports of two Clovis points and established solid proveniences for them. In addition, I documented numerous later Paleoindian projectile points, most also with at least rudimentary proveniences. Although private collections are an often-overlooked resource that can help address a broad range of research questions, they can also foster community and archaeologist collaboration, which provides archaeologists with an opportunity to encourage responsible cultural resource stewardship in a manner that is engaging and productive for all involved.

Powers, Kayla [223] see Ferguson, Jeffrey

Powis, Terry (Kennesaw State University), Amethyst Dunn (Kennesaw State University), Ashley Goodman (Kennesaw State University), Darrell Montgomery (Kennesaw State University), and Audrey Renaud (Kennesaw State University)

[314] *Middle Woodland Life in the Etowah River Valley of North Georgia*

Recent archaeological investigations have taken place at two precontact villages located across the Etowah River from the Leake site located in Bartow County, Georgia. Excavations at Lower Dabbs and Cummings have yielded substantial cultural deposits from excavations carried out over the past decade. Leake is regarded as the preeminent site in the region during the Middle Woodland (ca. 300 BC–AD 600) and the

data produced from both Lower Dabbs and Cummings allows us to discuss the nature, structure, and extent of the relationship between these three sites situated within 500 m of one another. This paper will discuss each site and compare their sociopolitical and economic trajectories within the context of the Etowah River Valley.

Powis, Terry [58] see King, Adam

Powis, Terry [296] see Micheletti, George

Pratt, Jordan (Texas A&M University)

[317] *Western Stemmed Tradition Settlement and Mobility Strategies: A View from Weed Lake Ditch, Oregon*
Weed Lake Ditch is a rare stratified open-air Western Stemmed Tradition site located in the Harney Basin, southeastern Oregon. The site is positioned along a relic shoreline of pluvial Lake Malheur and contains a strong Younger Dryas aged occupation component. At Weed Lake Ditch both Haskett points, crescents, bone needles, bone beads, and many additional nondiagnostic stone tools were found in association with each other. Here new obsidian geochemical data is presented as a proxy to assess the settlement and mobility patterns used by the Indigenous peoples who occupied Weed Lake Ditch in the past. The new data is integrated with previous geochemical analyses from the site, as well as from additional Western Stemmed Tradition sites located throughout the Harney Basin, to provide a view of lithic technological organization strategies employed during the terminal Pleistocene. The data shows that while some obsidians were transported long distances, most obsidian procurement is focused on regional obsidians located within the Harney Basin.

Pratt, Lauren (UCLA)

[236] *Lithic Technologies in a Raw Material “Desert,” Chachapoyas, Peru*
Among the most durable of archaeological remains, stone tools and associated waste are often used as key indicators of technology, economies, subsistence, and human movement; it is therefore vital to understand how the quality, abundance, and distribution of raw lithic materials on the landscape affects human behaviors. In this paper, I explore how, from the Middle Holocene through late prehistory, the peoples of the Peruvian eastern Andes adapted to an environment of lithic scarcity. I explore how adaptations such as lithic “informality” affect the information value of the lithic record, and interrogate what such cases can tell us about the relative importance of stone in the decision-making of past groups.

Pratt, Will (University of Texas, Austin)

[105] *Interpreting Volcanic Impacts on Raised Field Agroecosystems in the Ecuadorian Highlands: Physical, Geochemical, and Paleoecological Indicators*
The most extensive raised fields systems documented in the Ecuadorian highlands are found in the Inter-Andean Valley north of Cayambe and east of Lago San Pablo. Unfortunately, many of these fields have recently been destroyed by urban development, modern farming, and the expanding Ecuadorian flower industry. The nearby site of Zuleta has a number of well-preserved buried raised fields that offer the chance to study these fields and their associated hydrologic networks, serving as a microscale representation of the more extensive and complicated raised field systems of Cayambe and Lago San Pablo. While volcanic impacts from several eruptions of Cayambe volcano and the massive Quilotoa eruption surely created challenges for the people using these fields, they also provide unique opportunities to understand the timing and nature of the changes that took place. The Quilotoa eruption especially caused severe regional impacts as well as contributed to global climatic changes. This paper outlines the interpretation of volcanic evidence at the site of Zuleta, the associated environmental changes, and some of the posited human responses. Methods used to investigate these volcanic impacts include dynamic image analysis, geochemical weathering indices, isotope stoichiometry, and diatom analysis.

Prebble, Matiu [113] see Cochrane, Ethan

Prendergast, Mary [123] see Fennessey, Brenna

Prendergast, Mary [223] see Nishida, Talia

Prentiss, Anna (University of Montana)

[129] *The Housepit 54 Project at the Bridge River Site (k'etxelknaz), Interior British Columbia: A Fine-Grained Consideration of Feasting and Social Change*

The Housepit 54 project at the Bridge River site (k'etxelknáz), located in the western interior of southern British Columbia, is designed to address questions concerning the experiences of families occupying a long-lived house. Fifteen intact anthropogenic floors dated ca. 1100–1460 cal BP provide extensive fine-grained evidence for technological, economic, demographic, and social change across the life of the house. Our final field season of excavations in 2022 were designed to facilitate multidisciplinary studies focused on select hearths and ovens identified previously. They provide the opportunity to assess the role of food-related social events (potentially feasting) in the processes of socioeconomic and political change. This poster provides background to the poster symposium with an introduction to the overall research design and a review of site strata, select features, and associated floors. The project benefits from a long-standing research partnership/collaboration between the University of Montana and Xwisten, the Bridge River Indian Band.

Prentiss, Anna [129] see Walsh, Matthew

Preucel, Robert (Brown University)

[274] *A Phenomenology of Field Houses*

Alfonso Ortiz once told me that as a child he looked forward with great anticipation to the growing season. This was the time when he and his family would move from their village homes to occupy their field house and tend their crops. He recalled it as a special time, one when he was “free from the watchful eyes of his aunties.” This comment has always stuck with me. It is testimony of the rhythms of Pueblo Indian village life and the nature of distributed childcare. In my paper, I offer some reflections on my dissertation research (conducted almost 30 years ago!) that examined the social significance of ancestral Tewa field houses on the Pajarito Plateau, New Mexico.

Price, Michael [288] see Procter, Ellery

Price, Sarah [108] see Carr, Philip

Prieto, Gabriel (University of Florida), Luisa Vetter (Pontificia Universidad Católica del Perú), Wilder Aldama, Jesus Ruiz (Metallurgy & Material Consulting, Lima, Peru), and Gladys Ocharán (MyAP S.A.C., Microscopia Electrónica y Aplicaciones en el Perú, Lima)

[374] *An Archaeometallurgy Study of Metal Fishhooks in Huanchaco: Alloys and Manufacturing Continuities and Changes Over Time*

Archaeological excavations at three sites in Huanchaco, North Coast of Peru, have yielded a few metal fishhooks associated with the Virú (150/100 BC–AD 450/500), Moche (AD 450/500–800/850), Chimú (AD 1000/1100–1450/1470), and the Inca (AD 1450/1470–1532) occupations. These metal artifacts were found in domestic and funerary contexts. The maritime nature of the Huanchaco occupations points to the necessity of using metal fishhooks in their daily subsistence activities. Interestingly, the limited number of fishhooks found in Huanchaco suggest a more restricted access by common fishermen, and a higher availability among members of the local elites who used fishhooks for more selective fisheries (i.e., larger fish species). Based on the results of seven metal fishhooks using optic microscopy, X-ray fluorescence, scanning electron microscopy with disperse spectrometry energy and radiographic imagery, we conclude that copper was the preferred metal during all times. However, there are slight differences in the alloys employed within and between societies and time periods, while the manufacturing technique seems to have been the same with a few variances over time. Moreover, our findings suggest that the usage of metal fishhooks was restricted to certain individuals and not all members of maritime communities. *****This presentation will include images of human remains.**

Prieto, Gabriel [119] see Lantow, Vivian

Prieto, Gabriel [45] see Rivera Prince, Jordi

Prieto, Victor, and Annabelle Lewis (University of Colorado, Boulder)

[238] *Exploring the Relationship between Identity and Burial at the Welsh Union Church Cemetery in Madison County, New York*

This poster details current research at the Welsh Union Church Cemetery site in Nelson, New York. From its earliest known interment in 1809 to its continued role as an active burial ground today, this cemetery indexes the history and contributions of many Welsh immigrants who settled in Madison County over the course of the nineteenth century and their descendants who maintain an ongoing interest in the site today. Using traditional cemetery archaeology methods of monument typology alongside geospatial analysis and archival research, the authors examine the unique identity practices evident at the site, such as Welsh-language monument inscriptions, and their interactions with mainstream mourning customs over time to understand the relationship between mortuary landscapes, immigrant identity, and the impacts of industrial and agricultural intensification in the region.

Prieto, Victor [238] see Miller, Elena

Primeau, Kris, Elizabeth Paris (University of Calgary), Gabriel Lalo Jacinto (Centro INAH-Chiapas), and Roberto López Bravo (Universidad de Ciencias y Artes de Chiapas)

[122] *Reconstructing the Acoustic Environment: Comparing Archaeoacoustic Modeling and Experimental Soundscapes at the Ancient Maya City of Tenam Puente*

Reconstruction of the acoustic phenomena that characterize sites, features, and other landscape locations are broadening our understanding of the multifaceted perception of sound, meaning, and embodied experience in the past. However, models, simulations, and on-site experimentation and recording are frequently tied to extant buildings and landscape features, or modern elevation, foliage, and terrain data. To understand past soundscapes, defined as the “acoustic environment as perceived or experienced and/or understood by a person or people, in context (ISO 2014:1),” we must first reconstruct the past acoustic environment. Our study builds on prior research at the ancient Maya city of Tenam Puente by Paris et al. (2024), which suggests that elites manipulated the built environment of Tenam Puente’s marketplace to facilitate auditory surveillance during the Late Classic (600–900 CE) and Early Postclassic (900–1250 CE) periods. Here, we compare experimental archaeoacoustic data collected through fieldwork at Tenam Puente using Zoom H1N recorders and calibrated NIOSH sound level recordings, to estimated soundsheds produced using the Archaeoacoustics Toolbox for GIS, utilizing environmental inputs collected on-site. We explore the advantages and limitations of each method, and consider the spatial and social implications of audibility patterns.

Procter, Ellery (Simon Fraser University), Farid Rahemtulla (University of Northern British Columbia), Michael Price (Simon Fraser University), Hua Zhang (Simon Fraser University), and Dongya Yang (Simon Fraser University)

[288] *Understanding Ancestral Lake Babine Nation Fisheries through the Ancient DNA Analysis of Archaeological Salmon Remains*

Our project aims to reconstruct traditional fishery practices used by Lake Babine Nation (LBN) through the ancient DNA (aDNA) analysis of archaeological salmon remains from Smokehouse Island (GiSp-001). This island is located within the traditional territory of LBN in north-central British Columbia (BC) and has an occupation history that dates back to 1,000 years ago. Numerous recovered salmon remains and ancestral knowledge demonstrate the importance of salmon at the site; however, aDNA analysis was necessary to reveal information pertaining to past fishery practices. Proven aDNA techniques were applied to determine the sex and species composition of the fishery to better understand prior human-salmon interactions. These aDNA techniques have generated valuable insights inaccessible through morphological analysis alone. Our current results indicate that the dominant species represented at Smokehouse Island is sockeye salmon (*Oncorhynchus nerka*), consistent with regional salmon ecology and LBN oral histories. The sex ratio appears to be biased toward male salmon, which may suggest preferential harvesting of males. While the results from this project will provide more information about human-salmon interactions in the understudied region of north-central BC, resulting information on traditional fishery practices may influence future fishery and conservation practices for LBN.

Proctor, Lucas (Utah State University)**[91] *Neolithic Mobility and Persistence in the Arabian Interior: Results from the KHS-A Site, Al-Khashbah, Oman***

This poster presents the results of recent fieldwork at the Neolithic site of KHS-A, located north of the modern Al-Khashbah oasis in central Oman. The KHS-A site was identified in 2022 and consists of a cluster of stone structures, prepared fireplaces, and lithic artifact scatters covering an area of over 3,600 m² on top of a relict Pleistocene terrace adjacent to the Wadi Samad. Our results have identified multiple phases of intact fireplaces with charcoal, bone fragments, shell beads, and lithic production debris. Radiocarbon dates suggest repeated occupations dating to the middle–late sixth and early fourth millennia BC. Early lithic results suggest several unique characteristics that differ from coastal sites, while malacological and anthracological data from the site confirm long-distance connections with the coast. From these initial test excavations, we argue that the site, and potentially other contemporary sites in the region, represent “persistent places” where mobile Neolithic peoples returned to repeatedly over centennial timescales to camp, exploit local lithic resources, graze domestic animals, and/or hunt. Future work at the site will investigate the scale of these inhabitations, their periodicity, and their relationship with local environmental conditions and resources.

Proctor, Terren [89] see Cheever, Sylvia

Protopapadakis, Michail (College of Wooster), and Lisa Monetti (College of Wooster)**[321] *Osteobiography of Skeletal Remains from the Archaeological Site of Pella, Jordan***

The Pella at Wooster Project is an ongoing effort to catalogue and digitally publicize an archaeological collection from the site of Pella, Jordan, near modern-day Tabqet Fahel. The College of Wooster excavated in Pella between 1967 and 1985 and brought a collection of artifacts to the United States. This poster showcases the analysis of a series of human remains from Pella, and employs osteobiography to better understand the life narratives of those individuals with an emphasis on paleopathology. This is achieved by integrating published articles, unpublished reports, and original osteological analysis of the remains. The data is put in context with associated archaeological artifacts from the collection, and with a paleoenvironmental reconstruction highlighting ancient climatic trends in the region. The paleopathological analysis of the remains evaluates older accounts describing osteophytosis, degenerative joint disease, anemia, healed fractures, and trephination surgery with updated literature and methodology. This project is important because it records and publicizes osteological data from a largely unpublished archaeological collection through an interdisciplinary approach. It uses osteological data to highlight individual life experiences while connecting them with the wider sociocultural and climatic context of their environment. *****This presentation will include images of human remains.**

Prout, Michael, Michele Bleuze (California State University, Los Angeles), Ellen Fricano, and James Brady (California State University, Los Angeles)**[104] *The Bioarchaeology of a Ceremonial Depository in the Petexbatun Area of Guatemala***

Between 1990 and 1993, the Petexbatun Regional Cave Survey investigated more than 20 caves surrounding the site of Dos Pilas, with six caves producing substantial human skeletal assemblages. This presentation focuses on Cueva de los Quetzales, the only one of the six not directly associated with Dos Pilas. The cave, located 12 km to the southeast of Dos Pilas under the main plazas of Las Pacayas, features a conical mound formed beneath an opening in the cave’s ceiling from which offerings were dropped in from above. This feature is a type of ritual depository identified by J. Eric Thompson in his 1959 article “The Role of Caves in Maya Culture” based on examples first reported by the British Museum expedition to Pusilha in the 1920s. Forty-two bones were recovered in Cueva de Los Quetzales with 37 recovered directly from the mound itself. Thirty-nine of the bones were analyzed at CSULA. The skeletal assemblage is interesting as it is composed almost exclusively of elements from the upper and lower limbs. The only axial skeletal elements are two parietal and temporal fragments. This presentation explores the osteological evidence suggesting protracted body treatment with certain skeletal elements being deposited into the cave below. *****This presentation will include images of human remains.**

Prufer, Keith (University of New Mexico), and Amy Thompson (University of Texas, Austin)**[51] *Despots, Optimization, and Cooperative Transitions in Maya Society***

Major evolutionary transitions in sociality are premised on the formation of cooperative groups and transformation of the collective group into an entity. Prior to the development of institutions, the kin group was the primary locus of cooperation and was limited largely by environmental and physical constraints. With the emergence of institutions, humans were able to dictate the rules for social organization, creating systems where cooperation could be advantageous to an individual, even when members of the group are unrelated. Resulting institutions could be self-regulating, conferring benefits to those who follow the rules and those who sanction rule breakers. In *Human Behavioral Ecology*, despotism is a common evolutionary development in human history, with far different strategies than the despots of Whittfogel's absolutist states. Despots are individuals able to acquire and defend a disproportionate share of resources, potentially including labor and prestige. Status is maintained by optimizing concessions sufficient to outweigh the costs and uncertainties of migration. For ancient Maya elites and their agrarian subjects, the context for decision-making changed drastically over 14 centuries along with increasing population densities, conversion of land to agriculture, management of ecosystem services, and volatile climate conditions. We discuss applications of this model to three impactful transitions.

Prufer, Keith [36] see Cerezo-Román, Jessica

Prufer, Keith [36] see Hernandez-Bolio, Gloria

Prufer, Keith [104] see Pearson, Osbjorn

Prufer, Keith [104] see Rangel, Esteban

Prufer, Keith [51] see Thompson, Amy

Prufer, Keith [320] see Tierney, Citlali

Prufer, Keith [320] see Warner, Monica

Pryce, Thomas (French National Centre for Scientific Research), and Pi Venunan (Silpakorn University)**[49] *Phu Lon and Back Again: Following the Steps of the Father of Holistic Southeast Asian Archaeometallurgy*, Professor Vincent C. Pigott**

Prehistoric metal artifacts have been studied archaeometrically since the outset of scientific archaeology in Thailand in the mid-1960s, sometimes by renowned archaeometallurgists like Bob Maddin, Cyril Stanley Smith, Igor Selimkhanov, Nigel Seeley, and Tamara Stech Wheeler. However, it was only with the founding of the Thailand Archaeometallurgy Project (TAP) in 1984, by Vincent C. Pigott and Surapol Natapintu, that ancient Southeast Asian metallurgy began to be analyzed in-the-round—that is, investigating all stages of copper-base metal consumption and production, from mining prospection to finished artifact deposition, within a well-founded anthropological and technological framework. TAP fieldwork began 40 years ago, on the banks of the Mekong River at Phu Lon, which became the region's first known ancient copper mine. The TAP moved to the Khao Wong Prachan Valley in 1986 and continued fieldwork until 1994, but the project and its spinoffs remain active and influential across Southeast Asia. Prof. Pigott trained most of the first generation of Southeast Asian archaeometallurgists, who went on to have successful careers, and his influence and mentorship continue to benefit fourth- or fifth-generation regional specialists. Here we summarize Prof. Pigott's contribution and chart the path of cutting edge archaeological research back to Phu Lon. *****This presentation will include images of human remains.**

Pryce, Thomas [49] see Hamilton, Elizabeth

Pryor, John**[218] *Engendering Archeology at the Grandad Site: An Attempt to Differentiate Women's and Men's Space Based on Archeological Data***

The Grandad site is located in the Sierra Foothills of California. CSU-Fresno has conducted a field school there for over 25 years. Since 2006 we have focused on two areas, a Chief's House (male area) and a Chaw'se or BRM (female area). One of the recent theoretical approaches in archaeology has been Engendering Archeology. Having taught this theory in my Method and Theory class, I felt this might be a

wonderful opportunity to attempt to demonstrate it to my students. Based on the assemblages from these different areas of the site, could we differentiate a “male area” from a “female area.” During the last field season, I finally got a large enough sample size to see some intriguing differences. This poster presents the results of this research.

Przadka-Giersz, Patrycja [333] see Wieckowski, Wieslaw

Przybyła, Marcin [332] see Kot, Malgorzata

Przystupa, Paulina (Alexandria Archive Institute / Open Context)

[155] *Conclusions from a Pilot Archaeological Data Literacy Program*

The Data Literacy Program (DLP) of the Alexandria Archive Institute / Open Context ran from late 2020 to 2025 with funding from the National Endowment for the Humanities and the Mellon Foundation. This paper summarizes insights gained from the program, whose goal was to widen and diversify community engagement with cultural heritage data. The paper evaluates the many ways the program cultivated archaeological data literacy through freely available online open education resources and direct education in the form of guest lectures, workshops, nontraditional publications, and conference presentations. This analysis demonstrates a need for more programs in archaeological data literacy as well as further protocols for the evaluation of methods for assessing quality and accessibility for online accessible educational resources in archaeology broadly. The paper concludes by advocating for more work, research, and publication in pedagogy tailored to archaeological data literacy. It stresses the need for new pedagogical pathways and research that broaden the archaeology skills taught to learners to regularly incorporate archaeological data literacy. Such work will meet the needs of the discipline as more aspects of archaeology pivot to data-oriented work that currently requires learners to acquire skills through nontraditional means and continuing education rather than through traditional archaeology programs.

Puckett, Neil (SEARCH), David Wilson (SEARCH), Ben Wells (SEARCH), and Eric Swanson (Atlantic Shores Offshore Wind)

[183] *Methodological Approaches to Landscape Reconstruction and Geoarchaeological Analyses of the Atlantic Outer Continental Shelf*

The Atlantic Outer Continental Shelf (OCS) is a gradually sloping set of Quaternary sediments generally extending 50–100 miles east of the Atlantic coast. With depths of 50 m or more, low sea levels after the Last Glacial Maximum allowed the OCS landscape to include rivers, lakes, forests, floodplains, and a shoreline much further east. This environment was ideal for the First Americans arriving to the region, learning the landscape, and using local resources. Our understanding of landscape preservation on the OCS is limited, but with the onset of offshore wind development this has begun to change: extensive geophysical surveys informed by geotechnical and geoarchaeological sediment analyses are revealing preserved fluvial, lacustrine, and shoreline features that existed prior to sea-level rise and inundation. This paper discusses the methodologies adopted by SEARCH geoarchaeologists to analyze and model landscape preservation on the OCS. We provide a general overview of the sub-bottom datasets used to model the former subaerial OCS. We further discuss the successful adoption of geoarchaeological coring campaigns, core analyses, radiocarbon dating, palynology, and grain analyses to better inform our expectations and models of landscape preservation.

Pueblo of Acoma Cultural Partners [362] see Duwe, Samuel

Puente, Nicholas (University of Colorado, Boulder)

[381] *Where Water Becomes Stone: A Review and Methodological Considerations of Speleothem Sourcing via Trace Elements*

Speleothems are secondary calcium carbonate formations that form within a cave as rainwater drips through the ceiling. Speleothems have been recovered from various surface and subsurface archaeological contexts. The simple, but important, fact that speleothems are cave formations provides a unique way to investigate how ancient Maya peoples engaged with subterranean spaces: doorways to the underworld realm of

ancestors and deities and sources of water necessary for agricultural fertility. Indeed, scholars can determine the original cave from which a speleothem was obtained and thereby investigate broader questions of inter- and intra-site social interactions. Put differently, what relationships, such as pilgrimage, desecration, and trade, characterized the interactions that resulted in the movement of speleothems? This paper reviews the literature pertaining to ancient speleothem movement as well as relevant studies by early speleothem sourcing projects and paleoclimatic research to propose a replicable approach to sourcing speleothems. It first outlines the importance of speleothems to Maya peoples and highlights evidence for speleothem manipulation. Second, it introduces speleogenesis, how speleothems form, and the processes that control the inclusion of source able elements. Third, it analyzes past speleothem sourcing studies and builds on their methods to provide recommendations for provenance analysis.

Puente, Nicholas [349] see Kurnick, Sarah

Pugh, Erin, Simona Cheung (Barnard College), Grace Luo (Barnard College, Columbia University), and Severin Fowles (Barnard College, Columbia University)

[228] *Trade and Ceramic Production at the Largest Developmental Village in the Northern Rio Grande*

Recent research in collaboration with Picuris Pueblo has led to the documentation of an immense Developmental period village, composed of dense pithouses and artifacts scatters extending for 3 km along a mesa edge just south of the contemporary pueblo. Known as the Eagle Pile Site, the village was an important part of Picuris oral history through the nineteenth century, though memory of the site waned in the twentieth century. Here we report on the first major study of the site's pottery, exploring questions of production, design style, and mineralogical composition. We attend, in particular, to site's assemblage of Red Mesa black-on-white, as well as to related San Juan-based types, which collectively point to the emergence of significant regional connections at Picuris during the ninth and tenth centuries CE.

Pugh, Timothy, and Evelyn Chan (Itza Project)

[51] *The "Streetlight Effect" and the Late Preclassic / Early Classic Transition in Petén, Guatemala*

Collapses are frequently observed in the archaeological record, though they are rarely catastrophic events. They generally involve migration and reorganization, which is an opportune time to reevaluate the existing system of organization. Despotic systems tend to be more visible since rulers overtly proclaim their divine right to rule. More cooperative systems are far less evident archaeologically. Consequently, when a more cooperative system replaces despotic systems, governance seems to disappear. When the opposite occurs, governance seems to appear. Using elite culture, particularly a cult of rulership, as an indicator of governance is an example of the Streetlight Effect. We argue that the Late Preclassic period collapse and the Early Classic period emergence of the aristocracy was simply a shift from a more cooperative to a more despotic system, not an advancement. We explore these ideas in the Petén Lakes region of Petén, Guatemala.

Pugh, Timothy [51] see Shiratori, Yuko

Pugliese, Melanie, Lachlan Kyle-Robinson (University of Toronto), Iban Berganzo-Besga (University of Toronto), and Monica Ramsey (University of Toronto)

[67] *Striking the Perfect Balance: Employing a Hybrid Approach to Rapidly Generate Phytolith Training Data*

Manual identification of phytoliths is time consuming and prone to error. Deep learning (DL) algorithms are transforming this methodology, significantly reducing analysis time and increasing accuracy. However, developing an effective DL workflow to identify phytoliths depends on the manual acquisition of hundreds to thousands of high-quality images for training data. We must strike a balance between obtaining lots of high-quality images (*balancing file size associated with full slide images*) and minimizing the human time needed to capture those images (*balancing time to annotate and crop individual phytoliths within full slide images*). Therefore, integrating automation with expert input is essential. Employing a Nikon Eclipse Ni-E microscope and a Digital Sight 10 camera, we have opted to use lower magnification to first obtain full slide scans of ashed comparative samples. We then manually pinpoint areas for automated high magnification Z-stacks or single plane images, which also minimizes cropping time. This hybrid approach, engineered with Nikon Imaging Specialists, is facilitating the rapid generation of critical high-quality training data, and this system will be

adapted to form part of the labs developing DL workflow system, which is set to revolutionize the scale and accuracy of archaeological phytolith analysis.

Pugliese, Melanie [67] see Kyle-Robinson, Lachlan

Pujals Blanch, Sonia (University of Barcelona), Roberta Mentasana (University of Barcelona), Monika Therrien (Fundación Erigaie, Bogotá, Colombia), and Jaume Buxeda I Garrigós (University of Barcelona)

[89] *Unveiling Colonial Influences: Ceramic Analysis and Cultural Exchange in Cartagena de Indias (Sixteenth–Eighteenth Century)*

Cartagena de Indias, in present-day Colombia, was a crucial port connecting the Americas to Spain. Initially a hub for resources taken from indigenous groups, between the sixteenth and eighteenth centuries AD, it evolved into a colonial trade center where different cultural entities coexisted. The study of ceramics from Cartagena provides valuable insights into the daily life, practices, and cultural exchanges among indigenous, Creole, and colonial communities. This research investigates the impact of European colonialism in the Colombian Caribbean by analyzing contact and postcontact ceramics from Cartagena. Samples ($n = 220$) of tableware, transportware, and cookingware were collected from a convent (Convento de San Francisco), a military site (Batería de San Ignacio), and a domestic site (Museo del Oro Zenú), to compare ceramic consumption in the city. Aiming at characterizing the provenance and technology of these productions, the study employs a range of techniques, including XRF, pXRF, XRD, petrography, SEM-EDX, and Raman spectroscopy. The results of this research shed light on the technological transfer in ceramic manufacture during Spanish colonialism and allowed the reconstruction of the ceramic trade network in the Colombian Caribbean. Specifically, we explore the blue glaze technology on imported tableware from Spain, Italy, and Mexico, highlighting the transatlantic influences in these ceramic productions.

Purcell, David (Museum of Northern Arizona), and Jeffrey Burns (Museum of Northern Arizona)

[224] *Landscape Settlement Patterns on Southern Cedar Mesa, Utah*

Glen Canyon National Recreation Area (GLCA) manages 1,229 acres of land on the southern rim of Cedar Mesa in San Juan County, Utah. Northern Arizona University surveyed 160 of those acres in 1987, and Museum of Northern Arizona inventoried the remaining 1,069 acres during three projects in 2020–2024. Including rock art sites recorded by GLCA in 1994, the area contains 83 archaeological sites comprising 89 temporal components. This is a density of 41.1 sites per square mile, 2.8 times the GLCA average. These sites are exclusively Archaic, Basketmaker II, and Pueblo I–III Ancestral Puebloan in cultural/temporal affiliation, with sites of each interval strongly associated with specific local environmental zones that form contiguous strips: mesa rim, dune ridge, and dune fields. Absent are Basketmaker III, single component Pueblo I, and Protohistoric components. The Cedar Mesa Project of the 1970s did not identify any Archaic sites but did identify early Basketmaker III sites, otherwise the recent inventories found similar site types, temporal components, and site locations. The results of the recent projects compliment and expand on the earlier sample surveys, providing additional strong evidence for cultural changes through time on Cedar Mesa in response to changing environments and dietary needs.

Purcell, David [220] see Spurr, Kimberly

Purcell, Gabrielle [193] see Carmody, Stephen B.

Purifoy, Haley

[124] *Comparing Spatial Distribution of Burned Artifacts in Hearth-Centered Activity Area at La Prele Mammoth Site, Wyoming*

Household archaeology is an effective way to study past peoples, but it is only effective when a house is present for study. Throughout Paleoindian archaeology, the lack of perishable materials makes identifying house structures difficult. In central Wyoming, the La Prele Mammoth site is a unique opportunity to study Paleoindian households. The La Prele Mammoth site (48CO1401) is a nearly 13,000-year-old Clovis

mammoth kill/scavenge site with multiple artifact scatters believed to represent hearth-centered family camps. This was determined by analysis of artifact scatters relative to hearth locations. Block D shows evidence of hearth centered activity, but the hearth itself was invisible during excavation. The hearth features lack the obvious characteristics of oxidization or staining of sediments. To determine the location of the hearth feature, I compare the distribution of charcoal, burnt lithics, and burnt bones left because of hearth centered activity to determine the location of the feature. The location of a hearth feature is important for understanding the spatial locations of other artifacts at the site and for taking the first step toward analyzing the houses Paleoindians peoples used.

Pyburn, K. Anne (Indiana University)

[295] *Decency and Dissent*

Alice Kehoe has been the reliable voice of reason in archaeology during my entire career. She championed women when the disciplinary hierarchy was a patriarchy that didn't see any problem. She advocated for Indigenous participation in knowledge production before terms like community and identity and colonialism became a part of our academic discourse. She has continued to do good science long after too many successful archaeologists forgot what science really is and why it matters. And Alice Kehoe has never patronized anyone by agreeing with them or used her scholarship to spoil the conversation. Her originality and salutary alterity have done more to strengthen archaeology as a science and as an ethical practice than most scholars could ever hope to achieve.

Pye, Mary (New World Archaeological Foundation, BYU), Gerardo Gutiérrez (University of Colorado, Boulder), and Kim Richter (Getty Research Institute)

[344] *Sacred Mountains in the Huastec Region and the Eastern Sierra Madres*

The Gulf Coast Postclassic period is something of an enigma, eclipsed by both a synchronic focus on the imperial Aztecs and diachronic studies of earlier Olmec and Classic Veracruz civilizations. Tacked on as an addendum to narratives perpetuated by the Spanish, our knowledge of Indigenous Gulf Coast cultures (ca. 1100–1521) is a patchwork, shedding little light on the region. In his archaeological synthesis of southern Veracruz and Tabasco, Michael Coe (1965) laments, “So scanty is our information on the period as a whole that hardly one example of architectural construction can be ascribed to it.” And yet, exploring the coastal lowlands from the Huasteca to southern Veracruz, Postclassic sites are abundantly in evidence. Drawing on ethnohistory, archaeology, and art, we examine the Mexican Gulf from the Classic collapse to the onset of the Spanish invasion, with special attention to key players, groups, locations, cultural symbols, and remains. From interdisciplinary perspectives of its varied subregions, we hope to begin compiling a new archaeological synthesis of this oft-neglected place.

Quave, Kylie (George Washington University), and Carlos Delgado González

[386] *Análisis comparativo de Machuqolqa y Yunkaray en el periodo pre-inca y inca temprano del Cusco*

Presentamos una comparación de dos sitios de la región al noroeste de Cusco, capital eventual del imperio Inca. El sitio de Yunkaray por la pampa de Maras y el sitio de Machuqolqa cerca a Chinchero fueron ocupados durante los siglos XIV a XV durante el supuesto periodo de desarrollo imperial de los Incas en la macrorregión del Cusco. Aquí presentamos las semejanzas y las diferencias de los sitios para comprobar la hipótesis de que compartían elementos culturales mientras que servían propósitos distintos: el Yunkaray como un centro de una población jerárquica y Machuqolqa como una estación de asentamiento semipermanente de los agropastores semimóviles quienes se asentaron en periodos limitados para guardar recursos y juntarse con otras poblaciones. Enfocándonos en los resultados de excavaciones, incluyendo fechados, elementos arquitectónicos, tecnología alfarera y restos de comida, comparamos las funciones de los sitios y cómo fue la vida diaria en dos comunidades contemporáneas durante el periodo de desarrollo inca. En los dos casos se observa aislamiento de la cultura Cusqueña en aquel periodo. A veces se ha considerado las poblaciones alrededor de Cusco como resultado de las actividades políticas, económicas y sociales de los Cusqueños; este estudio las considera como sus propias entidades sociopolíticas.

Quave, Kylie [226] see Kucur, Ezra

Queffelec, Alain (UMR5199 PACEA, CNRS, Univ. Bordeaux), Pierrick Fouéré (INRAP), Ludovic Bellot-Gurlet (Sorbonne Univ., CNRS), Yannick Lefrais (Univ. Bordeaux Montaigne, Univ. Bordeaux), and Emmanuel Fritsch (Univ. Nantes, CNRS, Eddy Foy, Univ. Paris-Saclay, and Madeleine Raymond)

[378] *Unique Raw Material and Unknown Perforation Techniques: Specificities of the Lapidary Production in the Ceramic Age of the Lesser Antilles*

Lapidary production is a prominent aspect of the material culture during the Early and Middle Ceramic Age in the Caribbean islands (400 BCE–700 AD). The variety of bead and pendant types, and raw materials, is specific to this period when compared to later eras. The origin of various rocks and minerals remain uncertain, and a peculiar material has recently been discovered in the archaeological samples: sudoite, a mineral from the chlorite group. It has been identified for the first time in the lapidary production from several islands. Regional geological data and contexts support the hypothesis of an Isthmo-Colombian origin for this mineral. Additionally, the skills demonstrated in lapidary production are remarkable, especially given the basic lithic tool kit of the time, which relied on scarce raw materials. The perforation of rock crystal and amethyst beads several centimeters in length raises questions about the techniques used. Through experimental reproduction and microscopic observation of the specific features of the wear traces, we have confirmed that these narrow-diameter perforations may have been achieved using cactus spines and quartz abrasive. These findings provide new insights into the sophisticated lapidary techniques and regional circulation networks of the Ceramic Age in the Caribbean islands.

Quijada, Joselline [171] see Echenique, Ester

Quinn, Colin (University at Buffalo), Horia Ciugudean (Muzeul National al Unirii-Alba Iulia), Sophie Chorek (University at Buffalo), and Hanna Murphy (University at Buffalo)

[301] *Burning Questions: The Bronze Age Cremation Cemetery at Galda de Jos, Romania*

Cremation is a process of fiery transformation. In a few short hours, a body is changed into a new substance—cremains—that people collect from the cooled pyre, and which can be split apart or reassembled, moved or kept, circulated or buried. By analyzing cremains, we can reconstruct multistage secondary mortuary practices and address questions of when, where, how, and by whom were the dead burned and buried. In this study, we present new analyses of cremains at Galda de Jos, Alba County, Romania. This cemetery was discovered and excavated as part of a highway construction project. Galda de Jos is the most recent example of Middle Bronze Age (Wietenberg culture) cremation cemeteries where people came together to bury cremains in urns. New radiocarbon dates provide insight into the establishment, use, and abandonment of this cemetery. We situate the Galda de Jos cremation cemetery within the broader Middle Bronze Age in Transylvania, a time of population aggregation, social segmentation, and socioeconomic transformation.

Quinn, Colin [228] see Escalante Zarco, Angela

Quinn, Patrick (University College London)

[392] *Ceramic Manufacturing Technology and Organization of Production at Emperor Qin Shihuang's Mausoleum Complex, China*

Emperor Qin Shihuang's Terracotta Army is an ancient ceramic assemblage of immense scale, importance and world renown. This impressive funerary assemblage, as well as the many thousands of other ceramic artifacts unearthed from the First Emperor's mausoleum complex, have the potential to shed a light on the planning and execution of large-scale building projects by the Qin Empire. We have recently demonstrated this by studying the ceramic paste of the of the terracotta statues and other ceramic objects in detail using scientific techniques, such as thin-section petrography and instrumental geochemistry (Quinn et al. 2017, 2020). This presentation will bring together these recent findings with previous studies (e.g., Gao et al. 2003, Zhao et al. 2003; Lei et al. 2004) to summarize our understanding of the raw material sources, production sites, and ceramic technology of the statues and associated clay-based artifacts at the Mausoleum. It demonstrates how scientific data can be used to study the organization of ceramic production in Qin period China, including topics such as the division of labor, quality control, standardization, and logistics management.

Quintana, Patricia [36] see Hernandez-Bolio, Gloria

Quintana, Patricia [36] see Zazueta, Maria

Quintana Morales, Eréndira [229] see Bryan, Lucia

Quintana Morales, Eréndira [59] see Singman-Aste, Lily

Quintanar-Isaías, Alejandra (Universidad Autónoma Metropolitana-Iztapalapa), and Ana Teresa Jaramillo (Universidad Autónoma Metropolitana)

[242] *Estudio histológico de muestras botánicas halladas en la Cueva de las Manitas*

Se estudió la anatomía de restos botánicos de hojas, tallos, fibras y semillas para relacionarlos con los grupos botánicos a los que pertenecen. Con procedimientos estándares de la anatomía vegetal se prepararon laminillas que contienen los tejidos estudiados. Se encontraron glumas y tallo de inflorescencia de maíz, hojas del totomoxtle, hojas de *Yucca*, semillas de frijol, fibras del fruto de pochote (*Ceiba* sp.), tallos, semillas y pericarpio de calabaza (*Cucurbita* sp.) así como fibras de *Agave* spp. Los tejidos se compararon con especies actuales para corroborar la identidad de estas especies.

Quintus, Seth, and Darby Filimoehala (International Archaeological Research Institute; Inical Research Institute Inc.)

[173] *The Growth and Scale of Agricultural Adaptation in the Ka'ū Field System*

Place-based agricultural adaptations are widespread across the Hawaiian archipelago. These adaptations, as Melinda Allen has demonstrated, are situated within ecological and social contexts that organize the scale and development of these adaptations. Understanding how farmers produced adaptations within this context is instrumental for understanding the resilience of food production systems and how farmers navigated their changing social positions. To this end, this paper examines the spatial and temporal patterning of agricultural adaptations in the Ka'ū field system. Ka'ū is a useful case study as it is understudied and provides a sort of contrast to other field systems, the district known to have been rebellious and farmer centric. Furthermore, the study area discussed here is situated near the upper elevation boundary of the field system. This environmental setting produced somewhat unique challenges and opportunities for production relative to the core of the field system. Results highlight a process of intensification and agricultural development that speaks to increasing demands, but the scale of adaptation indicates small-scale labor organization.

Quintus, Seth [113] see Cochrane, Ethan

Quispe-Bustamante, Hubert (Zuayer Consultores & Ejecutores S. A. C.), and Veronique Belisle (Millsaps College)

[386] *Wari Monumental Architecture: New State Canons of Power in Kaninkunka, Huaro, Cusco*

During the Middle Horizon, two expansionist states dominated the Andes: the Wari and the Tiwanaku. So far, only Moquegua has evidence of direct interaction between settlers from those two states. In the Cusco region, the presence of large Wari installations have been interpreted as evidence of strong Wari influence. However, it has also been suggested that the Tiwanaku built a major pyramidal temple at Kaninkunka near Wari settlements. To verify this hypothesis, we conducted two seasons of excavations at Kaninkunka. The analysis of construction techniques, building materials, and architecture indicate that all three construction phases at the site were associated with Wari, and not Tiwanaku. Furthermore, the pottery was clearly Wari, obsidian mostly came from a Wari-related source (Quispisisa), and offerings follow a Wari pattern. The Wari appear to have used this locale, which sits at the base of an important regional Apu, to celebrate important ritual ceremonies. The presence of some local material culture suggests that the Wari invited select members of local communities to participate in events organized at Kaninkunka, which could have fulfilled a diplomatic and religious role to reinforce Wari soft power in Cusco.

Quispe-Bustamante, Hubert [386] see Belisle, Veronique

Quispe-Bustamante, Hubert [386] see Brown, Matthew

Raab, Bailey (Binghamton University), Dana Bardolph (Northern Illinois University), Aaron Comstock (University of Louisville), and Robert Cook (Ohio State University)

[192] *Turpin Up New Data: Analysis of Paleoethnobotanical Remains from Recent Excavations at the Fort Ancient Turpin Site*

Recent investigations at the Turpin site, a Fort Ancient village site dating from 1000 to 1300 CE in southwest Ohio, have sought to determine the extent of excavations conducted at the site by Harvard University's Peabody Museum in 1885. In addition to shedding light on past disturbances of the site, these excavations have allowed for further research into Fort Ancient human-plant relationships through the generation of paleoethnobotanical samples collected and processed with modern recovery techniques. Here we provide data from our analysis of samples from the 2022 and 2023 excavations. We present an intra-site spatial analysis of human-plant relationships in conjunction with paleoethnobotanical data from the site previously published by Andrew Weiland in 2019. In addition to a heavy reliance on maize, a variety of nuts, fruits, and other weedy taxa were identified, the latter of which have not been historically considered outside of a "miscellaneous/other" classification. In this research, we begin to consider what human-plant relationships might be identified when we divest ourselves of conventional categories of plants that emphasize human use of plants instead of human relationships with plants. We have found that these categories restrict our understanding of the relationships plants have with each other and Fort Ancient people.

Raad, Danielle (Stanford Archaeology Center)

[293] *Confronting a Legacy Collection in a Student-Curated Exhibit*

Curating legacy archaeological collections poses complex challenges while offering an opportunity to engage students in critical dialogue about museum ethics, provenance research, and the politics of display. Stanford University students in my spring 2024 course Introduction to Museum Practice grappled with the purpose, potential, and challenges of curating collections. We co-curated the exhibition *De la Tierra: Indigenous Ceramics from West Mexico Transcending Time and Space*. On view at the Stanford Archaeology Center between May 2024 and April 2025, the exhibit draws from two collections of ceramics objects from West Mexico: ancient burial offerings of unknown provenience likely acquired in part from looting and twentieth-century sculptures made by Purépecha creators in Ocumicho. The juxtaposition of a legacy collection with contemporary ceramics resulted in an exhibit sparking dynamic conversations. Students crafted exhibit signage posing questions like, "Do you think that these burial objects should be on display?" and "What do you think is a responsible way to collect objects?" Based on the outcomes of co-creating *De la Tierra* with students, I present insights into the intersection of museum practice, pedagogy, and ethics, illustrating how student-led projects can train a new generation of radical museum professionals while pushing the boundaries of curatorial practice.

Rabinow, Sophie (University of Cambridge), Ruairidh Macleod (University of Cambridge, UK), Piers Mitchell (McDonald Institute for Archaeological Research, Cambridge, UK), Matthew Collins (University of Cambridge; Globe Institute, University of Copenhagen), and Nathan Wales (University of York, UK)

[288] *Fish and Feces in the Low Countries: A Comparative Analysis of Macroremains and Shotgun Sequencing Results from Fecal Sediments (Eleventh–Eighteenth Centuries)*

Shotgun sequencing of fecal sediments—i.e., foods passed through the digestive tract—has the potential to refine and specify morphology-based identifications, particularly for taxonomic groups such as fish, which are challenging to collect and identify. Here, we present the shotgun sequencing results from 13 Medieval and post-Medieval Low Countries fecal samples, which we compare to the macroremains recovered from each context. We contextualize these findings through the perspective of the Fish Event Horizon, a radical shift in fish exploitation and consumption in England and the Low Countries started in the Late Medieval period (AD 1000–1500). Archaeological fecal sediments supported an expectational concentration of DNA, which allowed for the identification/specification of several ichthyological and non-ichthyological faunal taxa, including sea lamprey (*Petromyzon marinus*) and, for the first time in Low Countries archaeological contexts, worm pipefish (*Nerophis lumbricoides*) and zander (*Sander lucioperca*). Overall, however, morphological evaluations should not be dismissed in the stead of DNA, particularly from contexts with robust ichthyological/ zooarchaeological datasets, as many taxa reported morphologically evaded molecular amplification.

Rabinowitz, Adam [114] see Character, Leila
 Rabinowitz, Adam [215] see Fleming, Elijah
 Rabinowitz, Adam [160] see Keenan Early, Erin

Rachal, David (Tierra Vieja Consulting), and Robert Dello-Russo (University of New Mexico)
[183] *Geoarchaeological Insights from Relict Gypsum Dunes along Lake Otero's Paleo-shorelines, Tularosa Basin, New Mexico*

Relict gypsum dunes on the paleo-shorelines of Lake Otero are valuable archaeological archives. When exposed at the surface, these dunes are altered by pedogenic processes, forming a white, powdery gypcrete with hardened “skins” known as “gypsum blisters.” For decades, cultural resource management projects have considered these blistered dunes too old and stable to contain buried artifacts. However, our recent geoarchaeological investigation used geological and pedological methods, including stratigraphy, soil description, and the radiocarbon dating of geologic deposits, soil carbonates, and hearth features, to examine these dunes. Results of the study indicate that the dunes began forming between 14,000 and 12,000 years ago and stabilized between 8,000 and 4,000 years ago and that the dunes may still contain older (Late Pleistocene to Early Holocene) archaeological sites. Future studies could leverage these stratigraphic insights to more effectively search for buried Paleoindian and Archaic cultural materials.

Rachal, David [53] see Willis, Mark

Radchenko, Simon, Emily Van Alst (Washington State University), and Mackenzie Cory
[368] *No Two People Are Alike . . . among the Elk Dancers at Register Cliff*

As complex archaeological phenomena, rock art images are entangled in numerous relationships of different types, including landscapes, waterways, flora and fauna, past communities, and nonhuman beings. With the rise of post-anthropocentric archaeologies and the rapid development of rock art research tools throughout the last two decades, our studies started to focus more on these relationships than on the meaning of a specific panel. This talk will explore two of the most fundamental relationships rock art could possibly have—the one between the imagery and the rock itself, and the one with the tool that brought the rock art imagery into being. Employing the digital photogrammetric study of the elk dancers' imagery at the Register Cliff (48PL132), the paper aims to reveal microscopic details of how these images were created and the influence of post-creation changes on the engraved surface. From the relative chronology of the panel to the morphology and direction of a single engraving, this site provides us with a closer look at the engraved figures to reveal how inherently different they are and what life stories they have.

Rademaker, Kurt (Center for the Study of the First Americans), Emily Milton (Michigan State University), Sarah Ann Meinekat, Brett Furlotte (University of Saskatchewan), and Daniela Osorio (Universidad de Tarapacá)

[382] *Foraging Behavior and Landscape Knowledge in the Early Sites of the Central Andes*

Can materials in the earliest archaeological sites of a region tell us where people came from, which environments and resources they were familiar with, and how much landscape knowledge they possessed? I will discuss evidence from terminal Pleistocene sites in the hyperarid Pacific coastal desert and the high Andes mountains of western South America. Early transfers from many geologic obsidian sources along the Andes provide a temporal baseline for thorough knowledge of the topographically complex highlands. Our team has developed fine-grained provenance information for Quebrada Jaguay and Cuncaicha rockshelter, providing a clearer view of diverse foraging patterns and inter-zonal movements among quasi-contemporary early sites in distinct ecozones. The origins of these distinct patterns remain elusive and are not well explained by simple models positing colonization of the Andean highlands from the Pacific coast. Current evidence allows for multiple migration models for the peopling of western South America.

Rademaker, Kurt [53] see Meinekat, Sarah
 Rademaker, Kurt [382] see Milton, Emily
 Rademaker, Kurt [382] see Osorio, Daniela

Radican, Kelsey (HDR)**[228] *Developing a Methodology for the Identification of Shell Bead Money in the Archaeological Record***

There is evidence for the use of shell bead money by hunter-gatherer communities dating back at least 2,000 years, yet there has been little research done on this topic. In her recent paper, Dr. Lynn H Gamble (2020) draws from anthropological theory about money, ethnographic records, and bead morphology from Chumash sites in Southern California to develop a methodological framework, including four criteria, to identify shell bead money in the archaeological record. Drawing from Gamble's methodology, an analysis was conducted on the criteria for two case study sites. In order to form a baseline, the criteria were tested on the Yurok culture, a proximity site in Northern California. The test was then expanded to Sub-Saharan Africa and the recent studies by Jennifer Miller (2021) on the 50,000-year-old tradition of ostrich eggshell bead use. Testing the criteria through these two case studies provides new ways of thinking about shell bead money and may suggest a need to change or further develop Gamble's criteria. Developing this methodology not only assists in the identification of new shell bead money sites but opens the door for more in depth research on trade, sociality, and other aspects related to the use of shell money.

Radivojevic, Miljana (UCL Institute of Archaeology), and Thilo Rehren (Science and Technology in Archaeology and Culture Research Center, Cyprus Institute)**[49] *Reviewing Arsenical Copper Production in Western Eurasia: New Evidence from the Balkans*****[WITHDRAWN]**

Rahemtulla, Farid [288] see Procter, Ellery

Raillard Arias, Daniela (Northwestern University), Sébastien Guillet (University of Geneva), Arlen Mildred Talaverano Sanchez, Segundo Priciliano Aguilar Silva (Asociación Comunal de Turismo Leymebamba), and Guidmar Chavez Llatance (Asociación Comunal de Turismo Leymebamba)**[45] *Ecologies of Ancestors: Examining the Intermateriality of Chachapoya aboveground Mortuary Architecture through Wood Anatomy, Geochemistry, and Local Land-Based Knowledge in the Amazonian Andes of Peru***

At the cusp between Andes and Amazon, limestone cliffs cloaked in the mist of tropical montane cloud forest house the remains of Chachapoya ancestors. Given their dramatic placement within a fractured and lush environment, the "chullpa," or aboveground mortuary structures, of precolonial Chachapoya communities have long evoked curiosity and concern among the many who view them from afar. Centering Indigenous frameworks and Andean thought, we demonstrate how the construction of a chullpa is composed of multiple, meaningful entities, acting as a node from which relationships with the ecologies of montane cloud forest radiate. As such, the Chachapoya chullpa is imbued with both ancestral agency and the vitalities of plant and earthen bodies embedded within its walls, shaping the experiences of human descendants across the landscape. Informed by local land-based and ethnobotanical knowledges, we present the results of our wood anatomy analysis on cores from tree beams preserved in mortuary structures. Further, we discuss the composition of mortar and plaster identified through initial geochemical analyses. Ultimately, the converging vitalities of ancestral, plant, and earthen bodies transcend time: we reveal a multisite, refined chronology of Chachapoya chullpa construction, demonstrating centuries of this practice that extended long before and after imperial invasions.

Rajković, Dragana [288] see Martinoia Zamolo, Valentina

Ralph, Ron [275] see Boulanger, Matthew

Ralston, Clair [45] see Stone, Pamela

Ramey, Rebecca (Southern Illinois University), and Mark Wagner (SIU Center for Archaeological Investigations)**[216] *Uncovering Kaskaskia: An Archival, Geophysical, and Archaeological Investigation into the First Capital of Illinois***
Kaskaskia, Illinois, was founded in 1706 as a French Jesuit missionary, cradled between two major water

sources: Kaskaskia and Mississippi Rivers. It was home to momentous events for the frontier, including the Revolutionary War. In 1818, it became the first capital of Illinois. Disaster struck in the 1880s, when the Mississippi River cut into the Kaskaskia River channel, eroding the eastern edge of the town, effectively destroying the town and its memory in the process. Through archival research methods, geophysical surveys, and an archaeological investigation, it seems that the long-lost town is not so lost, just buried under alluvium. Investigations into the house site of Jacques Mette prove that the entire town was not lost, as memory and previous research suggest it to be.

Ramirez, Bobby [43] see Antone, Willard

Ramirez, Cristian (Indiana University, Bloomington)

[180] *Symbolism of Obsidian Eccentrics from the Valleys of Tequila*

Eccentrics have been found all throughout Mesoamerica. This paper develops the first focused examination of the obsidian eccentrics from the Valleys of Tequila and examines some potential interpretations of their morphology and meaning. I draw on previous archaeological, ethnohistorical, and ethnographic sources. I pull from the works of Veronique Darras and her analysis on the meaning of obsidian as well as research done by Johannes Neurath, Carl Lumholtz, and Theodor Konrad Preuss on the sociopolitical organization of the Wixáritari (Huichol) to propose interpretations of the symbolism related to these obsidian eccentrics. The sixteenth-century *Relación de Michoacán* helps draw a possible connection between obsidian eccentrics and protohistoric descriptions that associate obsidian with representations of the god Curicaueri. If obsidian is considered to be the god Curicaueri according to *La Relación de Michoacán*, then what might it mean to cut and form a god into a figurine or an eccentric?

Ramirez, Estevan (Statistical Research Inc.), Richard Ciolek-Torello (Statistical Research Inc.), Tumurochir Batbayar (Mongolian Academy of Sciences, Institute of Archaeology), Tsend Amgalantugs (Mongolian Academy of Sciences, Institute of Archaeology), and Steve Norris (Statistical Research Inc.)

[122] *Documenting Urbanism in an Ancient Nomadic Landscape in Mongolia through Digital Archaeological Methods*

The incorporation of photogrammetric documentation methods at archaeological sites has been a growing interest in research across various regions of the world. In 2024, Statistical Research Inc., in collaboration with the Mongolian Academy of Sciences, Institute of Archaeology, initiated the first phase of a multiyear project focused on historic preservation and research on the development and role of urbanism and social complexity in a nomadic landscape. We employed survey and test excavations incorporating aerial and terrestrial photogrammetric methods of documentation to obtain a more complete and accurate assessment of architecture and the spatial distribution of cultural material at two eighth-century urban centers—Tsgaan Sumiin and Biibulag Balgas—built by the Uyghur Empire. As historic preservation is an important aspect of the Uyghur Cultural Heritage Project, we created a digital record of the remaining standing walls, stela, and other monuments utilizing Polycam, Drone Deploy, and Agisoft Metashape Pro. This poster demonstrates how the combination of photogrammetry and GIS is the most effective way to document a site's full spatial context. The results created three-dimensional models of both sites and georeferenced drawings in ArcGIS that captured their architectural layout and preserved a detailed digital record of their fragile structure.

Ramirez, Estevan [115] see Ciolek-Torello, Richard

Ramirez Flores, Lady [195] see Rodríguez Yábar, Alexis

Ramon Celis, Pedro

[100] *Walls of Power: An Analysis of Defensive and Social Functions of the Fortified Zapotec Site of Guiengola*

The Guiengola Archaeological Project has successfully mapped the precolumbian fortified city of Guiengola in Oaxaca, Mexico, using both pedestrian survey techniques and airborne lidar scanning. Known as the garrison where the Zapotec people defended their territory against the Mexica (Aztec) armies in 1490—an event documented in both oral histories and colonial records—Guiengola has now been revealed as a sprawling city covering 360 ha, featuring internal social complexity and serving as an autonomous political capital of the

Zapotec state. The city's layout includes a 3.5 km system of walls that provided defensive capabilities. However, some of these walls also functioned to control movement within the city and create social divisions among its inhabitants. This paper analyzes the multiple roles of Guiengola's military architecture by contrasting it with the sixteenth-century Zapotec vocabulary recorded by Juan de Córdova. Understanding how the Zapotec people described their military architecture allows us to better address the different functions and categories of military structures in Postclassic contexts, ultimately providing deeper insights into the defensive logic of this fortified city.

Ramon Celis, Pedro [269] see Carpenter, Lacey

Ramos, Jorge [26] see Miller Wolf, Katie

Ramos, Marcos Paulo (PUC-GO / FAPEG), Eric Boeda (Paris Nanterre University), and Maria Dulce Barcellos Gaspar de Oliveira (UFRJ)

[165] *Technical Alterities in Pleistocene Brazil: Sharing the Methods Applied and the Results Obtained with the Analysis of Lithic Materials of Low Archaeological Visibility Evidenced in the C7α Facies of the Vale da Pedra Furada Site (PI)*

The objective of this communication is twofold: to share the basic heuristic applied to the study of lithic materials of low archaeological visibility and to present some of the results obtained. We applied the Techno-Functional Approach to investigate the lithic materials collected in the C7α sedimentary facies of the Vale da Pedra Furada site, located in the PARNA Serra da Capivara (PI). This facies was dated to approximately 24,000 years BP and is part of a long occupational column distributed in 13 sedimentary layers that, to date, extends chronologically between 41,000 years BP and 7000 years BP. The analysis of the materials evidenced allowed us to hypothesize that they are the archaeological remains of a coherent, cohesive, and consistent "Knapping Structure." We characterize these remains as evidence of aggregation or "protocooperation" between two production principles: Affordance and Debitage (Concept C). These principles governed different groups of *chaînes opératoires* that were aimed at obtaining lithic tools ($n = 471$) fundamentally equivalent in terms of their functional potential. The main components recognized among the technotypes that make up the Panoply of Tools are derived from the functionalization processes of the types Exteriorization ($n = 173$), "All Edge" ($n = 166$) and Interiorization ($n = 76$).

Ramos, Marcos Paulo [165] see Viana, Sibeli Aparecida

Ramos Hernandez, Carmen [51] see Halperin, Christina

Ramsey, Monica [67] see Kyle-Robinson, Lachlan

Ramsey, Monica [67] see Pugliese, Melanie

Ramshaw, Elizabeth, Jacob Roberts (University of Florida), Sarah Schmitt, Daniel Contreras, and Matthew Sayre

[64] *Integrating Two Decades of Disparate Data from the La Banda Sector at Chavín de Huántar: From Pole Aerial Photography to UAV Photogrammetry via Plan Drawings*

Chavín de Huántar has been a focus of archaeological research for more than a century, but the area of densest non-monumental architecture—the La Banda Sector, the best candidate for a domestic and/or urban sector at Chavín—has only been known since 2003. In that relatively short span of time, it has been excavated by multiple projects recording data with a variety of technologies. Here we focus on the challenges and rewards of integrating these diverse data in a GIS and explore matrix classification as a means of overcoming the limitations of working primarily from plan views of a palimpsest of architectural data. Identifying the elements of this palimpsest enables analysis of the architectural layout of this densely built area, making it possible to consider whether closely spaced small-scale structures are necessarily proto-urban or even urban, whether non-monumental Chavín is necessarily domestic, and what role activity in La Banda played with respect to Chavín's function as a ceremonial center.

Ramshaw, Elizabeth [64] see Roberts, Jacob

Ramsier, Marissa (Cal Poly Humboldt), Katherine Gaddis (University of Nevada, Las Vegas), Ariel Gruenthal-Rankin (University of Hawai'i, West O'ahu), Jacek Karmowski (Jagiellonian University in Kraków, Poland), and Katarzyna Slusarska (University of Szczecin/Poland)

[321] *Novel Patterns of Localized Dental Pathology at the Medieval Cemetery of Żelewo, Poland: Implications for Habitual Activities and Lived Experience*

The late medieval cemetery at Żelewo 1-3 is a lakeside site located in what was then Pomerania and is now northwestern Poland. The site is associated with a Cistercian monastery in the nearby town of Kołbacz. Remains were excavated in 2019 and then in 2023 and 2024 as part of a salvage archaeology project that coincides with the Żelewo Bioarchaeology Field School. As typical for medieval populations, most adult individuals evinced moderate to severe dental attrition, caries, and signs of periodontal disease. Such findings are consistent with diet and standard of dental hygiene typical for the period and region. However, we also observed consistent novel patterns of attrition, caries, and edentulism among the inhabitants. This pattern included particularly severe attrition, caries, and antemortem loss of the first and/or second molars, even when the adjacent premolars and third molars were intact. We also observed patterns in sidedness and differences in mandibular or maxillary dentition. Here, we explore potential explanations for these findings, including dietary habits and potential use of dentition in repetitive material processing. We also discuss implications for helping to reconstruct lost history and lifeways of the region, one of the overarching project goals. *****This presentation will include images of human remains.**

Rand, Asta [376] see Freiwald, Carolyn

Randall, Asa (University of Oklahoma)

[125] *An Archaeology of Commercial Shell Site Destruction in Northeast Florida*

Shell miners reduced or removed shell-bearing sites across Florida in the nineteenth and twentieth centuries. Archaeologists often work around this destruction to reconstruct how ancient landscapes emerged and were experienced in the deep past. In this poster, I focus on how these ancient places of social significance were destroyed and outline an archaeology of shell site extraction through a case study from the St. Johns River valley. There, scores of shell mounds, representing hundreds of thousands of cubic meters of shell and other materials, were destroyed and their contents dispersed for use as construction aggregate and fertilizer. Using precision GNSS and lidar I identify and quantify features resulting from mining remaining in impacted landscapes. Using archival documentation, I build out a picture of the legal and practical processes that enabled the extraction, identify locations that received the mined material, and consider the social and economic factors that supported the extraction industry.

Randall, Asa [123] see Hammerstedt, Scott

Randolph, Clare (Columbia University), and Khalfan Bini Ahmed (Kenyan National Museum)

[322] *Clarifying Coral Harvesting for Historical Swahili Monuments*

Swahili architecture is well known for its grand structures, often constructed using carved, live-harvested coral. Research has been sparse on the practices of coral harvesting despite coral's importance for the medieval Swahili and for reef ecosystems. To clarify the potential impacts of coral harvesting, the authors collected survey data on the amount of live-harvested coral used in Swahili monuments in northern coastal Kenya. These data are combined here with oral histories—collected from elders in northern coastal Kenya who were harvesting coral until as recently as about 50 years ago—to present a new and more complete understanding of how coral harvesting has been carried out in historical Swahili towns. Understanding the coevolution of Swahili harvesting practices, monument building, and how coral harvesting may have impacted the marine environment in the past and present allows a deeper understanding of the importance of human resource use in marine environments in both the short- and long-term. The next phase of research on this project will compare the use of live-harvested coral between different Swahili city-states and the specific ecological impacts these practices have had on local reefs.

Rangel, Esteban (University of New Mexico), Keith Prufer (University of New Mexico), and Emily Moes (University of St. Francis)

[104] *A Tale of Two Rockshelters: A Bioarchaeological Study of Ek Xux Valley Mortuary Practices during the Late Holocene*

Rockshelters have played a significant role in Mesoamerican mortuary practices, serving as transitional spaces that embody both openness and a deep connection to the earth. Saki Tzul (ST) and Mayahak Cab Pek (MHCP), two prominent rockshelters located in the Ek Xux Valley of present-day Belize, exemplify this tradition. Excavations by the Bladen Paleoindian and Archaic Archaeological Project at both sites have demonstrated their nearly continuous use as burial spaces from the late Pleistocene through the late Classic period. While recent research has shed light on the mortuary traditions of the early and middle Holocene periods, the later interments (after 3700 cal BP) remain relatively underexplored, particularly from a bioarchaeological perspective. This presentation seeks to address this gap by focusing on burials dating to the Preclassic and Classic periods at ST and MHCP. We combine osteological, archaeological, and molecular data from $n = 33$ individuals to explore patterns of mortuary practices evident at these sites. By doing so, we aim to enhance our understanding of the relationship between these rockshelters and their role as liminal spaces in the journey to the afterlife, as well as to offer insights about the communities that utilized these mortuary spaces. *****This presentation will include images of human remains.**

Ranhorn, Kathryn [340] see James, Sydney

Rankin, Caitlin

[99] *Fire Archaeology: Protecting Cultural Resources from the Impacts of Climate Change on Public Lands*

One of the four main strategic goals of the United States Department of the Interior is to conserve, protect, manage, and restore natural and cultural resources despite climate change and other stressors. To achieve this goal, the Bureau of Land Management's Battle Mountain District Office, which oversees over 10 million acres of public lands in central Nevada, developed a robust fuels program to address the increasing intensity and frequency of wildfires in the region. The fuels program incorporates fire archaeology to ensure that efforts to reduce wildfire frequencies and intensities do not negatively impact cultural heritage. Additionally, fire archaeology helps to minimize damage from wildfire suppression activities and mitigate the impacts of wildfire damage to cultural heritage. This paper outlines the Battle Mountain District Office's fire archaeology program and discusses the role of archaeology in wildfire incidents.

Rankle, Chad [289] see Neff, Hector

Ranlett, Sarah (Yale Peabody Museum)

[227] *It's 10:00 p.m. Do You Know Where Your Legacy Collections Are? Stewarding the Yale University Prehistoric Expedition to Nubia (YUPEN, 1962–65) Collection*

The Yale University Prehistoric Expedition to Nubia (YUPEN) was mounted in the 1960s in response to UNESCO's "Call to Save the Monuments of Nubia" in advance of flooding in Egypt and Sudan caused by the construction of the Aswan High Dam. YUPEN collected several tons of material from over 350 (primarily) Pleistocene and Early Holocene archaeological contexts in the Nile River Valley in Egypt, assembling one of the most extensive prehistoric collections of its kind. Due to a variety of historical contingencies, both personal and professional, the collection was never systematically studied and parts of it ended up stored across Europe and North America in the ensuing decades. This poster will present the work being undertaken by the Yale Peabody Museum to locate the extant components of the YUPEN Collection and render it useful and accessible to researchers. In doing so it will provide an overview of the collection itself and touch on a number of topics relevant to the general stewardship of legacy collections, data and archive curation, and some practices to be kept in mind by current field projects so that as modern collections become legacy collections, they might remain useful archaeological resources.

Ranney, William (W. H. Over Museum), Nicholas Meyer (University of South Dakota), and Anthony Krus (University of South Dakota)

[125] *Survey and Excavation of the Bloomingdale Townsite (39CL44), Clay County, SD*

A survey of properties, primarily along the Vermillion River in Clay County, South Dakota, was begun in summer 2019 and continued as a University of South Dakota (USD) field school in 2021–2023. The project was initially sponsored by the Clay County Historic Preservation Commission, in conjunction with the USD Department of Anthropology. This work has focused primarily on the Bloomingdale townsite (39CL44) which was occupied from the 1860s to 1890s and had the third oldest flour mill in Dakota Territory. The 2021 excavations focused on an area believed to contain the mill's location, which was found using early maps and early aerial photographs. The 2022–2023 excavations focused on understanding additional structural remains that may have been a part of the original townsite.

Ransom, Alysa [284] see Spenard, Jon

Rapson, David, Lawrence Todd (GRSLE Inc.), Daniel Dalmas (University of Utah), Marcel Kornfeld (University of Wyoming), and Erick Robinson (Desert Research Institute)

[223] *Contextual Information at Multiple Analytical Scales: Linking Social Organization and Land-Use Models at Bugas-Holding, a Late Prehistoric Winter Camp, with the Greater Yellowstone Ecosystem (GYE), Northwestern Wyoming*

Thirteen AMS bone dates based on MNI from nine hearth and dump features at the Bugas-Holding site establish the contemporaneity of all deposits within the main block area (mean = AD 1658). This chronological framework provides an opportunity to evaluate high-resolution behavioral models of social organization and land use at multiple analytical scales, linking site-specific activities with aspects of regional ecological structure. The generalized application of current settlement models without contextual analysis can lead to misidentification—or complete oversight—of critical patterns in spatially and depositionally diverse contexts such as the Greater Yellowstone Ecosystem (GYE). Following Kuhn (1992:192), different forms of anticipatory organization among foragers have significant implications for archaeological patterning. At Bugas-Holding, emphasizing the linkage between technological and subsistence variables with specific behaviors allows us to identify the archaeological consequences of the behaviors responsible for observed patterning. For example, edXRF (energy dispersive X-ray fluorescence) analysis of known-source obsidians, alongside lithic assemblage analysis, reveals site-specific patterns of toolstone procurement, use, and discard within the broader context of social organization and regional land use. Additionally, data on stable isotopes from bison and bighorn sheep provide insights into site-specific hunting tactics, transport choices, and modes of storage, consumption, and discard.

Rapson, David [196] see Dalmas, Daniel

Ratcliffe, Jessica (NAU), Arvin Coc (Monkey Bay National Park), Kyle Voyles (National Cave and Karst Program Lead, Bureau of Land Management), and Eli Miller (Monkey Bay National Park)

[381] *Altar Cave Ritual and Communion Sites: Evaluating a Connection between Light and Dark Zones*

Ritual cave use is a popular subject in Maya archaeology, but whether proximate sites had linked use is unknown. Recent discoveries in Monkey Bay National Park—a protected area situated in the Maya Forest Corridor in central Belize—have led to new evidence of various ritual activities that took place in and around cave sites during the Late Classic period. A study at Altar Cave done in 2023 documented vast differences in artifact assemblages, visibility, and accessibility between light and dark zones. These variations in artifacts, especially faunal remains in the light zone and ceramic assemblages documented in the dark zone, may indicate specific ritual designations: shamans may have performed private rituals in the dark zone, whereas more public events could have taken place in the light zone. While that analysis expands on our knowledge of cave use during the Late Classic period and the activities that took place in public and private communions, our goal is to determine whether the usage was linked. We will map two chambers in Altar Cave and examine whether a connection can be established. This effort also could provide valuable information on how to protect the archaeology from natural or manmade forms of destruction.

Rathgaber, Michelle (Arkansas Archeological Survey), and Sarah Shepard (Arkansas Archeological Survey)

[33] *TACling the Curation Crisis: A Curation-Based Field School in Arkansas*

The continued focus of many field schools on excavation without any emphasis or discussion of the associated long-term care of the resulting collections is one of many factors contributing to the current curation crisis. With little to no focus on the responsibilities and costs associated with long-term care of collections, we are doing a disservice to archaeology and the students who are being trained to prioritize excavation rather than considering analyses of existing collections as a credible scholarly option for academic work. This, combined with the lack of undergraduate coursework focusing on curatorial methods, inadequately prepares students for what is ultimately the largest responsibility of archaeology, to protect and maintain the artifacts and data for the future. This field school focused almost exclusively on curatorial methods, ethics, and hands-on experience in collections rehabilitation and was, for many students, the first time that they had worked with artifacts or thought about the materials, space, and budgets necessary to maintain collections in perpetuity. By focusing on collections management, the students made the collections more accessible for future research and saw the need and potential for research in older, already extant collections.

Rauscher, Neve [184] see Kardulias, Drosos

Raven, Sheila [192] see Payne, Neal

Rawlings, Michelle [287] see Coon, Sarah

Ray, Erin [320] see Warner, Monica

Razo, Mikaela (University of Texas, San Antonio), Anissa Johnson (American Indians in Texas at the Spanish Colonial Missions), Rudy De La Cruz, Jr. (American Indians in Texas at the Spanish Colonial Missions), and Jessica Nowlin (University of Texas, San Antonio)

[322] *The Archaeology of Archives: Exploring Historical Maps through Connections between ArcGIS and Community Oral Histories*

This project is a collaboration between the Texas Heritage Project (THP) and its archive at the American Indians in Texas at the Spanish Colonial Missions (AITSCM) and the Community Engaged Digital Scholarship Hub (CEDISH) at the University of Texas at San Antonio (UTSA) in San Antonio, Texas. We are taking a community-based archaeological approach to a map collection stored within the grassroots Indigenous organization and its community archive. As part of this pilot project, we collaboratively determined with AITSCM to implement the Content Management System (CMS) Mukurtu as it best suits the needs of the organization and its community members. In addition to content management, we use ArcGIS to georeference the maps to archive changes in land tenure and the presence of Indigenous-built acequias, documenting their impact on the formation of San Antonio and its diverse communities. This mapping project works to accomplish the following: (1) center the community and their expertise while connecting their oral histories to historical documents; (2) offer students training for postgraduation success using software like ArcGIS and digital archiving platforms; and (3) improve the sustainability of the archive and increase access to its materials, and all its community-determined iterations, through platforms such as StoryMaps.

Real, Cristina (Universidad de Valencia), Milena Carvalho (ICArEHB), Jonathan Haws (University of Louisville), Anna Rufà (Universidade do Algarve, Faro, Portugal; PACEA-UMR 5199, Université de Bordeaux), and Alfred Sanchis (Museu de Prehistòria, Servei d'Investigació Prehistòrica, Diputació de Valencia, Spain)

[235] *Rabbit Exploitation Techniques during the Middle and Upper Paleolithic: An Approach from Experimental Archaeology and Its Application*

The archaeological record demonstrates that both Neanderthal and Anatomically Modern Human groups in west-southern Europe, particularly in the Iberian Peninsula and southern France, consistently included small prey in their subsistence strategies. Of the small prey species, Leporidae are particularly well represented in the archaeological record. Despite the significance of these prey in the human diet, our understanding of the

methods employed to hunt and kill them, and the manner in which their meat was preserved, remains incomplete. Further research is required to elucidate the processing, cooking, and preservation techniques employed. Accordingly, an experimental program has been conducted that considers three distinct cooking methods—namely, roasting, smoking, and drying. Furthermore, smoking and drying can be associated with techniques for the preservation of meat. Each method was applied to eight rabbits. This paper presents the results of the experimentation and taphonomic analysis of the bones of all individuals. The modifications recorded are compared with those identified in archaeological assemblages from the Middle and Upper Paleolithic of the Iberian Peninsula. The aim is to provide a comprehensive compendium of experimental data to assist researchers in interpreting small prey bone assemblages and in understanding the economic behavior of Paleolithic human groups.

Reamer, Justin (Bryn Mawr College)

[217] *So Many Pits, So Little Analysis: A Methodology for Interpreting Feature Function from Legacy Field Notes in the Minisink National Historic Landmark*

Generally identified through differences in soil color, texture, and composition, subterranean pit features are ubiquitous across archaeological sites in the Eastern Woodlands. Despite this ubiquity, most archaeologists have not attempted to statistically analyze features to understand their function in Indigenous foodways. Rather, published interpretations of function are most often based on interpretations made during excavations, which are themselves based on established interpretations for the geographic region the archaeologist studies. In this paper, I present a more rigorous method to interpret how archaeological features were used by Indigenous people based on archival field records from past excavations. My interpretations are based on my statistical analysis of 861 pit features excavated within the Minisink National Historic Landmark combined with ethnographic and ethnohistoric accounts of Lenape subterranean feature usage. I present a methodological framework for interpreting feature function that I argue can and should be adapted across the Eastern Woodlands to improve our understanding of why Indigenous people were constructing these pit features and how they used them. Additionally, I will discuss the problems that can come from using archival archaeological records but also the benefits of employing such large datasets.

Reardon, Emily (University of Colorado, Boulder), Elise Suckling (University of Colorado, Boulder), and Sharon DeWitte (University of Colorado, Boulder)

[238] *Maternal Mortality in Urban and Rural Communities in Late Nineteenth-Century Upstate New York*

Our study examines urban versus rural and temporal trends in maternal mortality in the context of a general transition from subsistence to commercial farming in rural communities and increasing urbanization in late nineteenth-century Upstate New York. Maternal mortality, the death of a child-bearer during pregnancy or following soon after pregnancy resolution, is often preventable, and like other health conditions and causes of death, it can reflect broader societal structural conditions and cultural practices. However, in some contexts, access to medical care and the transition to medicalized childbirth can exacerbate poor pregnancy outcomes. This can be due to poor infrastructure and lack of essential medical supplies. Historically, prior to the adoption of antisepsis procedures in routine obstetric care, childbirth in health care facilities could increase the risk of puerperal fever (sepsis). We assess trends in maternal mortality using data gathered from mortality schedules from federal and state census records ca. 1850–1880 for towns in primarily rural, agriculturally based Madison County and from the urban center of Syracuse (Onondaga County). We contextualize our findings with quantitative and qualitative data regarding relative ease of access to professional medical care and proportional mortality from other major causes of death.

Reber, Eleanora [101] see Bartz, Emily

Reber, Eleanora [192] see Cook, Robert

Reddy, Seetha [370] see Morgan, Christopher

Reed, Elizabeth (Institute for American Indian Studies), Stephanie Scialo (University of Connecticut), and Paul Wegner (Institute for American Indian Studies)

[74] *Examining Preservation in Rockshelters: The Reanalysis of Woodruff Cave*

Woodruff Cave, located near Lake Waramaug in New Preston, Connecticut, is a multicomponent Native American site that exhibits exceptional preservation of faunal remains. Researchers with the Institute for American Indian Studies (IAIS) have been reanalyzing this collection since 2021 to shed new light on the assemblage and reassess previous interpretations of the site. While the original excavators in the 1970s had assessed the majority of the collection to have been deposited during the Late Woodland period, lithic tool analysis demonstrates the cave was also used extensively in the Late and Terminal Archaic periods. Faunal analysis confirms the identification of elk in the assemblage, and the use of Zoo Mass Spectrometry (ZooMS) allowed for the identification of highly fragmented sheep bones as well. Fish remains were only identified in the shallow, recently developed stratigraphy of the site; however, absorbed lipid analysis conducted on ceramic sherds from the Woodland component of the site indicates regular use of fish. This paper discusses osteological preservation in a region where such preservation is rare, as well as the importance of returning to legacy collections with new methodology, technology, and research goals.

Reed, Emily [337] see Rosen, Arlene

Reed, Kaye [279] see Thompson, Jessica

Reed, Paul (Archaeology Southwest)

[237] *Where Should American Archaeology Be in 20 Years?*

As many (myself included) have discussed in recent years, American archaeology is making a transition. Long-suppressed and ignored viewpoints are finally being heard and interpretations are broadening. In particular, archaeologists are working collaboratively with Indigenous peoples and other descendant communities with new and innovative approaches to understanding the past. Recent improvements to the Native American Graves Protection and Repatriation Act regulations and revised funding requirements for National Science Foundation grants are reinforcing the dramatic transformation underway. We are in a very exciting, and for some, a scary time in American archaeology. In this paper, I'll explore the issues, explore examples of collaborative approaches, and offer a vision of American archaeology in 2045.

Reedy, Chandra (University of Delaware)

[171] *Combined 2D and 3D Analysis of Ceramic Sherds for Thermal Conductivity Simulations*

Measuring thermal conductivity of archaeological ceramics is useful because it is an important functional performance characteristic of vessels used for cooking or serving food or preparing or drinking hot beverages. The amount, size, and distribution of particles and pores greatly affect thermal conductivity, so this is a property that can be controlled by choice of raw materials, processing and fabrication methods, and firing regimes. Studies of thermal conductivity of actual sherds rather than laboratory mock-ups are lacking due to size, shape, and thickness requirements of traditional testing methods. New software technologies provide thermal conductivity data through simulations when the amount of porosity and the type and percentage of particles are known. We start with nondestructive micro-CT analysis of a sherd, which is then cut for an uncovered polished thin section. A new surface analysis tool (O-PTIR) provides IR and micro-Raman analysis on 450 nm spots to augment thin-section petrography. 3D image analysis incorporating AI gives percentages and distribution of pores and particles in the micro-CT images, which combined with mineralogical identifications from 2D thin sections is the data needed for thermal conductivity simulations. Discussion will focus on Tibetan talc-tempered ceramics and how their thermal conductivity differs from other ceramic materials.

Reese, Kelsey (Los Alamos National Laboratory)

[111] *Archaeological Research at the Intersection of Physical and Artificial Realities*

The proliferation of artificial intelligence coupled with the accessibility of consumer-level computing equipment that can analyze big data has heralded a new paradigm of research in the hard and social sciences. While archaeology is often reticent to broadly adopt the newest technologies, a suite of recent publications highlights the effort researchers are making to rapidly explore the potential applications of unsupervised machine learning as a means of knowledge production. Unsupervised machine learning, by design, independently manages how a model understands, weighs, and analyzes the suite of information it is provided. The broad application of unsupervised machine learning algorithms to legacy archaeological and other

datasets underscores the importance of coupling on-the-ground fieldwork efforts in the physical world to effectively understand the information being input to a model, the ability to verify the output, and to understand the interpretive value of the artificially derived results. This paper presents results from an unsupervised machine learning model to identify road features in lidar datasets across the northern US Southwest, an initial fieldwork effort to verify the results, and explores the interpretive value of a regional dataset identified through the computational power of artificial intelligence.

Reese-Taylor, Kathryn, Armando Anaya Hernández (Universidad Autónoma de Campeche), Felix Kupprat (Universidad Nacional Autónoma de México), Debra Walker (University of Florida), and Kyle Farquharson (University of Calgary)

[109] *Trade, Exchange, and Settlement in the Central Karstic Uplands during the Classic Period*

Since the mid-1990s, Fred Valdez has concentrated his investigations in the Three Rivers Area of NW Belize and NE Petén, studying Maya society on a regional scale. Others have now recognized the value in Valdez's regional viewpoint, as lidar imagery has opened the door for scholars to embrace the inter-site perspective at the core of his research. Like Valdez's investigations in the Three River area, our own research in the Calakmul biosphere seeks to understand the Classic period interaction between the primary city of Calakmul and subsidiary cities, towns, and smaller communities in this densely populated area. We are particularly interested in the economic factors that drive the intricate settlement pattern and integrate the region. To date, we have identified numerous nested compounds, hypothesized to be markets, in the area, suggesting a complex market economy developed during the Middle to Late Classic periods (400–850 CE). In this paper, we will present initial results of excavations in the settlement and in market nodes, along with spatial analyses of an extensive lidar dataset. Based on these findings, we then will offer preliminary observations regarding the impact of trade and exchange patterns on household organization and land-use strategies in the region.

Reese-Taylor, Kathryn [199] see Farquharson, Kyle

Reetz, Elizabeth (University of Iowa Office of the State Archaeologist), and Cherie Haury-Artz (University of Iowa Office of the State Archaeologist)

[340] *Implementing a Needs Assessment to Strategically Inform Revisions to the Iowa Archaeological Certification Program for Avocational Archaeologists*

The Iowa Archaeological Certification Program is a joint effort between the University of Iowa (UI) Office of the State Archaeologist (OSA) and the Iowa Archeological Society (IAS). Established in the 1970s, the program invites the interested public to learn field and lab skills while assisting professional archaeologists in a volunteer capacity and teaches participants to systematically document sites in their local communities. Recognizing that the program currently lacks curricular structure, accessibility, and a stewardship component, OSA intends to revise the format, integrate eLearning courses to increase accessibility and reach, and establish statewide community partnerships to expand opportunities for hands-on training. To create a program that best fits the expectations and requirements of diverse stakeholders, OSA partnered with a doctoral student intern from the UI Department of Teaching and Learning to develop and implement a needs assessment. The evaluation team gathered and analyzed feedback from past and potential avocational participants, Iowa-based cultural heritage professionals, OSA's Indigenous partners, and National Archaeological Site Stewardship Network members. This paper communicates the results of that study and OSA's progress in the certification program revision, and it explores how structured evaluations using community feedback can provide insights to public program sustainability and participation.

Reeves, Jonathan [279] see Thompson, Jessica

Rehren, Thilo [392] see Li, Xiuzhen

Reich, David [297] see Black, Valda

Reich, David [283] see Glover, Jeffrey

Reich, David [383] see Kollmann, Dana

Reich, David [316] see Moses, Victoria

Reid, Amy**[284]** *A Diachronic Analysis of Flaking Technology at the Multicomponent Site of Spring Lake*

The Spring Lake site (41HY160) is a significant multicomponent archaeological site in Central Texas. Located at one of the state's largest freshwater springs, the site contains material from Paleoindian to Protohistoric times. A combination of aggregate and typological analyses was used to examine over 18,000 pieces of debitage from the 2014 Spring Lake Data Recovery assemblage. Various debitage characteristics were recorded such as flake morphology, platform, bulb of percussion, raw material, and cortex to investigate load application, specialized billet technology, lithic procurement activities, production stages, and degrees of biface production versus core reduction. Specific combinations of attributes were used to assign and quantify flake types. The frequencies of each flake type were evaluated temporally. This paper will present the methods and results of these analyses and will discuss patterns identified through time.

Reid, David (University of Illinois, Chicago), Aldo Foe (University of Illinois, Chicago), Kendall Hills, and Rick Elliott (University of Illinois, Chicago)**[379]** *Political Cartographies: Colonial Mapmaking in the Philippines and the Implications for the Recovery of Missing Service Members from World War II*

In contrast to the perception of cartographic progress, wherein the scientific mapping of the world becomes more accurate over time, historical map series inherently reflect political biases of their makers where specific information is prioritized, omitted, or overlooked. This is especially the case in regions with colonial histories where mapmaking largely occurred during periods of war or political turnover. During World War II, the necessity of accurate maps across several fronts initiated one of the most intense periods of "scientific" mapmaking by global powers, often using advances in aerial photography and resulting in new representations of geographic regions. Using the Philippines as a case study, we analyze the colonial history of mapmaking by the successive Spanish, British, American, and Japanese imperial powers and how such geospatial representations reflect ontological differences within processes of placemaking. We assess our contemporary use of historical maps within GIS applications and the ongoing search for missing service members from World War II in the Philippines. We emphasize the limitations of state mapping projects that omit indigenous knowledge of local landscapes and topologies and propose new approaches to bridge cartographic theory with practice.

Reid, David [379] see Hamdan, Emadeldeen

Reid, David [379] see Kestle, Caleb

Reid, Ethan, Daniel Dalmas (University of Utah), Kasey Cole (University of Utah), Lawrence Todd (GRSLE Inc.), and Brianna Aufer**[196]** *Using Wyoming Ground Squirrel Burrows to Investigate if Surface Artifact Density Accurately Represents Subsurface Artifact Density*

Subsurface artifact density is an important part of the archaeological record for a site but is more difficult data to obtain than artifact density found on the surface. This is because examining subsurface artifact records requires excavation, auguring, and/or the use of ground-penetrating radar. These methods are destructive; require large amounts of money, personnel, and time; and are not always feasible, particularly in more remote or difficult-to-access areas. Using innovative machine-learning analyses, our project determines whether surface artifact density accurately represents subsurface artifact density using backfill produced from ground squirrel burrows. Ground squirrel burrows produce piles of dirt at their burrow openings containing subsurface artifacts. These artifact-filled dirt piles provide a noninvasive case study to test our research question. If surface artifact density represents subsurface artifact density, then artifact density in backfill dirt from rodent burrow openings should be highest in areas with high surface artifact density. Alternatively, if surface artifact density does not represent subsurface artifact density, then there will be no significant relationship between artifact density in backfill piles at rodent burrow openings with high-surface artifact density. Our results have implications for archaeological fieldwork, particularly when subsurface archaeological records are not feasible to obtain.

Reina, Carlos (ICANH)**[41]** *Rivers in the Amazon Basin: A Research Proposal from an Archaeological Perspective*

This research explores the rivers of the Colombian Amazon Basin as critical pathways in the processes of prehispanic settlement and cultural expression, particularly through rock art. Focusing on archaeological investigations along the Caquetá River and its tributaries, this study examines the relationship between the riverine landscape and the daily lives of ancient communities. It argues that the rivers not only facilitated mobility and ecological adaptation but also served as symbolic axes for artistic and spiritual expression. By combining underwater archaeology with rock art analysis, this research aims to understand the interactions between river dynamics and cultural manifestations, highlighting the role of water bodies in shaping territory and identity in prehispanic Amazonian societies.

Reina, Carlos [41] see Del Cairo Hurtado, Carlos

Reindel, Markus (German Archaeological Institute), Mike Lyons (German Archaeological Institute; University of Bonn), and Adrien Martinet**[296]** *Settlement Patterns and Political Structures of Prehispanic Northeast Honduras*

While the political structures of Mesoamerica are characterized by verticality and stratification, societies in Southern Central America exhibit a more horizontal, less hierarchical organization. However, detailed settlement pattern studies in Southern Central America that would allow a thorough investigation of this phenomenon are still very scarce. The Archaeological Project Guadalupe/Colón is reconstructing the prehispanic settlement and cultural history of northeast Honduras to provide new data about this long-neglected transitional zone between Mesoamerica and southern Central America. By conducting systematic surveys employing modern remote sensing methods—including satellite imagery, drone-based Structure from Motion (SfM) photogrammetry, and lidar—as well as traditional prospection and excavation techniques, and through typo-chronological and archaeometric analyses of artifacts, we are compiling a growing corpus of foundational archaeological data for interpreting settlement patterns and political structures. We present the results of surveys and excavations of 66 settlements dating to the Cocal (AD 1000–1525), Selin (AD 300–1000), and Betulia (250 BC–AD 300) settlement phases. The data provide insight into the densely settled Northeast Honduras Cultural Region, which is characterized by small- and medium-sized settlements interconnected by networks of economic and cultural exchange. Such societies have been described in other studies as “communities of practice.”

Reindel, Markus [182] see Mader, Christian

Reinhardt, Abbigail (Terracon Consultants)**[228]** *A Review of Previous Obsidian Sourcing Research*

A significant drought struck the Chacoan region and Mesa Verde around AD 1200, a likely factor contributing to the abandonment of Mesa Verde and prompting the ancestral Puebloans to migrate across the landscape. This research investigates the relationship between obsidian trade distributions and the migration routes of these groups during this period. By analyzing trade patterns, I aim to shed light on the interpersonal relationships and socioeconomic dynamics that influenced ancestral Puebloan migration. This study conducts a comparative analysis, compiling data from multiple journal articles to identify relationships between trade and migration routes. This poster will summarize the findings, offering insights into what the trade routes reveal about the depopulation of the Mesa Verde region in southwest Colorado.

Reinhart, Katharine (Archaeological & Historical Services Inc.)**[337]** *When Tragedy Begets “Harvest”: A Comparison of the Macrobotanical Assemblages Recovered from Two New England Colonial English House Sites*

The Waterman (Marshfield, Massachusetts; 1638–ca. 1640s) and Sprague (Andover, Connecticut; 1705–ca. 1750s) House sites are separated by a century of colonial history and modern state lines, yet linked by a common fate. Both homes were occupied by English families on colonial frontier landscapes until they burned in catastrophic fires that, in turn, allowed for the excellent preservation of macrobotanical remains directly associated with daily food preparation and preservation activities within each home. Recently completed

analysis of macrobotanical remains recovered at each site have highlighted that English colonists adapted their traditional foodways to incorporate Indigenous plant foods and knowledge. The Waterman family was one of many early families that blended Indigenous plants into their diet to survive in their new home. A century later, the Spragues also applied this successful subsistence strategy while including the European plants that were steadily becoming more accessible in the region. This paper's cross-temporal investigation highlights the botanical adaptations made by the English to their diets on the colonial frontier as well as the importance of these assemblages in recording the first bites taken by early New Englanders as their identity began to evolve from English colonists into the "Yankee" identity of later generations.

Reitze, William (University of Arizona)

[57] *Understanding the Paleoindian Occupation of the Estancia Basin: A 70-Year Record of Questions, Collections, and Learning*

The Estancia Basin of central New Mexico contained a large Pluvial lake that desiccated during the terminal Pleistocene. Human occupation by Paleoindian groups was set against a backdrop of changing landscapes and resource availability. Beginning in the 1930s and 1940s the archaeological record of the basin contributed to early discussions of the peopling of the New World. Droughts in central New Mexico in the 1950s exposed dozens of sites, which were collected by interested amateurs and student archaeologists whose research was used to help resolve questions of Clovis and Folsom chronology. This paper will revisit and present a synthesis of the last 70 years of research in the Estancia Basin. In an attempt to provide better context of Paleoindian occupation and mobility in the basin, several large lithic collections were reanalyzed, and these data are coupled with original field notes and geoarchaeological analysis to paint more vibrant picture. Prominent sites in the basin, including Lucy, Martin, Bigbee, and Kinchloe, are compared to each other, better resolved climatic records, and dozens of other sites to provide an updated view of the early occupation of central New Mexico.

Ren, Xiaoying [79] see Zhan, Xiaoya

Renard, Marilou (Sorbonne University), and Estela Martínez Mora (Instituto Nacional de Antropología e Historia)

[118] *De huesos y poder: La integración de los depósitos mortuorios posclásicos en el Conjunto Norte Rancho Aserradero, Huasteca potosina*

El asentamiento de élite del Conjunto Norte Rancho Aserradero (Huasteca potosina) ha revelado un rico conjunto mortuario. La variedad del reclutamiento, tanto en la selección de los individuos como en los objetos asociados y el tratamiento de los difuntos, es un testigo de la integración de estos contextos a la manifestación del poder político de la élite local. Los entierros de prestigio anclan en el paisaje la importancia de un linaje. Por sus tumbas, los miembros importantes de la sociedad, adquiriendo el estatus de ancestros, crean un vínculo directo entre los vivos y la tierra. Los depósitos dedicatorios, entre ellos los enterramientos múltiples, contribuyen también a enriquecer simbólicamente el poder del lugar y legitimar el enlace entre la élite y el centro de su territorio. Algunos individuos presentan un tratamiento mortuario distinto de los patrones funerarios habituales. En la muerte, sus cuerpos están sometidos a una forma de violencia. Desmembramiento, manipulación de huesos o aparente ausencia de cuidado son actos visuales y simbólicos poderosos. Están depositados en un lugar de poder, mezclados con tumbas de élite más bien que separados. Mediante diferentes procesos asociando difuntos y territorio, la muerte está instrumentalizada para construir el discurso del poder político. *****Esta presentación incluirá imágenes de restos humanos.**

Renard, Marilou [118] see Martínez Mora, Estela

Renaud, Audrey [314] see Powis, Terry

Renaud, Stephanie [125] see Leiva, Jennifer

Rennwanz, Joanna [333] see Slusarska, Katarzyna

Renson, Virginie [80] see Fenn, Thomas
 Renson, Virginie [284] see Sterner, Katherine

Reusch, Kathryn (Metropolitan State University of Denver)

[54] *Providing Secondary Products: Domestication and Castration*

One marker that can be used to distinguish between domesticated and wild animals in the archaeological record is castration. In a herd kept for their secondary products, such as milk, wool, and traction, castration allows for the useful retention of animals that would otherwise be slaughtered. What is less known is the relationship between the use of animal castration and the advent of human castration. The earliest textual references to human castration are about 6,000 years old, from religious hymns to a goddess, but the comfort with the process and idea of human castration in those texts indicates that it must have older origins. The beginnings of human castration may actually be closer to the creation of animal castration (ca. 12–10 kya) and may in fact have developed alongside it. It is possible that populations in the past engaged in both animal and “human husbandry” in an attempt to control groups of war prisoners or slaves. If these captives were thought of as chattel, the same as any other domestic animals, it would be very easy for the dominant group to engage in “human domestication,” using castration to prevent unwanted breeding but retain desired “beasts of burden.” ***This presentation will include images of human remains.

Reuther, Joshua [279] see Lanoë, François

Reyes, Mara [36] see Hernandez-Bolio, Gloria

Reyes, Omar [191] see Morello Repetto, Flavia

Reyes Madrid, Margarita [339] see Stone, Anne

Reyes-Sevilla, Nancy [386] see Barrantes-Reynolds, Felipe

Reynard, Jerome (University of the Witwatersrand)

[281] *Zooarchaeological Analyses of Howiesons Poort and Post-Howiesons Poort Fauna at Klasies River, Southern Cape, South Africa: Environmental Change and Subsistence Behavior in MIS 4 and 3*

The transition from MIS 4 to 3 encompassed significant behavioral change in southern Africa. In this region, the Howiesons Poort (HP) technocomplex, generally dated to MIS 4, is associated with more evidence of innovative behaviors, technologies, and tools. In the post-HP, during early MIS 3, there is less evidence of these behaviors and technologies. Technological differences between these periods have often been linked to environmental change from MIS 4 to 3. Given its extensive sequence, Klasies River is an important site in understanding diachronic change at this time. Faunal remains from this site are therefore a useful means of examining subsistence behavior and paleoenvironments during these periods. In this paper, zooarchaeological and taphonomic data are used to examine the links between subsistence behavior and environmental change during the HP and post-HP transition at Klasies River. The results show that humans were the primary accumulators of fauna in the HP, but less so in the post-HP with carnivores contributing significantly to the post-HP assemblage. The analyses also indicate a significant difference between HP and post-HP subsistence patterns, suggesting a close relationship between changing subsistence strategies and the MIS4/3 transition. Links between technology, subsistence behavior and environmental change are also discussed.

Reynolds, Austin [109] see Locker, Angelina

Reynolds, Cerisa [87] see Wismer, Meredith

Reynolds, Robert (Wayne State University), Sarah Saad (Wayne State University), Chencheng Zhang (Wayne State University), and Thomas Palazzolo (Wayne State University)

[277] *Generating Content for a Virtual World Learning Environment with POIs: The Land Bridge Paleo-Games*

This project utilizes a virtual reality simulation of an ancient environment currently submerged underneath

Lake Huron. The simulation was originally designed to help predict the location of ancient occupational remains of early Holocene hunter-gatherers. The system has been repurposed to provide a more immersive cultural and anthropological experience for high school STEM education. The experience consists of five basic stages that embody a gamified version of the scientific method. Students are introduced to the virtual world in a training room. Next, they explore the land bridge environment guided by information provided by a network of Points of Interest (POI). These POI work to provide a basic conceptual understanding of the paleo-landscape ecosystem. In stage three generative AI is used to help students articulate their hypotheses about the location of hunter-gatherer sites on the landscape. Stage four allows the student to express their hypotheses spatially in order to verify their intuition. These locations are then validated via an XR diving expedition to explore selected locations. The location and content of the POI are critical to the success of the land bridge virtual reality learning environment. This paper discusses the basic AI procedures used to construct and position the POI network.

Reynolds, Sally [334] see Korpershoek, Mirte

Reynolds, Sally [211] see Maryon, Sarah

Rezek, Zeljko, and Abdeljalil Bouzouggar (National Institute of Archaeological Science and Heritage)

[281] *Middle and Late Pleistocene Human Occupation in Morocco and Cultural Evolution of Early Homo sapiens* Even though the archaeological record left by groups of earlier *Homo sapiens* can be found across the African continent, more substantive knowledge of human biological and cultural evolution comes only from few regions, one of which is northwest Morocco. Stratified deposits, most notably at Irhoud, Taforalt, Rhafas, Bizmoune, and in the Rabat-Temara caves, rich in human fossils and faunal, marine shell, plant, lithic, and other materials, are invaluable for our understanding of earlier human foraging, the use of coastal resources, and the early evolution of technology and symbolic behavior. Without adhering to the MSA-LSA normative framework for tracing human behavior, technology, and adaptation, here we will synthesize published and ongoing research on various aspects of human cultural evolution from pre-Irhoud times until the Holocene. Special focus will be on recent and ongoing applications of archaeological-science methods and techniques (experimental, genetic, proteomic, isotopic, etc.) on the materials from this region. We will discuss the potential of this region for further refinement of cultural evolution models for northwest Africa, especially with regard to newly discovered Stone Age landscapes by us in the inland of southern Morocco in 2024 and more broadly for a cross-African perspective on these topics.

Rhode, David (Desert Research Institute)

[300] *High-Elevation Hunting Complexes in the Wilson Creek Range, Southern Nevada*

Large-scale prehistoric hunting complexes are well known from the Rocky Mountains, the Great Basin, and other high montane regions in western North America. Here I describe a set of large-scale hunting drive complexes from the Wilson Creek Range in southeastern Nevada. Lineaments of stone piles, cairns, and blinds, some more than a kilometer long, were constructed along the rims of montane tablelands at and above treeline. Associated chronometric indicators suggest that construction and use of these hunting complexes was initiated during the latest Paleoarchaic to Early Archaic and peaked in usage during the middle Archaic. The Wilson Creek Range high-elevation hunting complex system is considered in light of prehistoric hunting complexes in the Great Basin and elsewhere in the montane West.

Rice, Kaitlyn [216] see Cossin, Zev

Richards, Emerson (University of Central Florida)

[125] *Renewing Old Maps of the New World: ArcGIS Georeferencing Sixteenth-Century Spanish Records of New World Settlements to Determine Points of Contact*

Peter Apian's *Cosmographia* (1525) was one of the first printed texts to describe the New World and provide a map with a continent newly called America. Further, it included volvelles (circular moving diagrams that used to calculate navigational features) as well as a list of longitude/latitude coordinates of settlements newly encountered by the European explorer accompanied by descriptions of the geography and peoples of the

New World. Focusing on Florida, I will georeference Apian's coordinates onto a modern map and layer sixteenth-century maps of Florida in order to adjust for historic error in calculating and/or identifying locations. Once I have determined where these historic points are in reference to known modern points, I can begin to incorporate narrative accounts of areas from other sixteenth-century sources that may not have been cartographically documented with accuracy, or at all. The objective of this project is to use historic data, adjusted to modern landmarks, in order to recover sites of Spanish-Indigenous contact that may have gone historically unrecorded or may have been recorded using visual or verbal subjective terms that has rendered them difficult to locate.

Richards, Katie (New Mexico State University), and Bethany Miller

[380] *Ritual Closure on the Fremont Frontier*

For roughly 1,000 years, the far northern extent of the cultural North American Southwest reached into Utah, inhabited by peoples we refer to as the Fremont. During the Fremont Late period (ca. AD 1000–1300), many structures across the vast region were intentionally burned and buried with specific ritual artifacts including figurines, gaming pieces, antlers, ochre, projectile points, and more. While this practice has been noted at many Fremont village sites it has never been systematically studied. The practice of ritually terminating structures has been observed across the western United States but has been most prominently discussed and documented in the American Southwest. This paper compares ritual closures of Fremont structures to those documented in surrounding regions to better understand the origins of the practice in the Fremont region. These data are used to better understand Fremont origins and social identity.

Richards, Michael [288] see Edwards, Nicolette

Richards, Michael [288] see Martinoia Zamolo, Valentina

Richards-Rissetto, Heather [123] see Wandsnider, LuAnn

Richter, Kim (Getty Research Institute), Henri Bernard (Universidad Veracruzana), and Ixchel Fuentes (Museo de Antropología de Xalapa)

[344] *Reused, Repainted, and Rare: Late Postclassic Blue-on-White Ceramics in the Huasteca*

The Postclassic period in the Huasteca, a region along Mexico's northern Gulf Coast, is characterized by Black-on-White ceramics (Ekholm 1944). This ceramic style is widespread across the Huasteca, appearing on various vessels, from bowls to anthropomorphic and zoomorphic forms. The black decoration, likely chapopote paint, is applied directly to a cream slip-covered clay body. The designs vary, ranging from abstract to motifs to those seen on Huastec stone sculptures, such as *El Adolescente* (Museo Nacional de Antropología) and *La Apoteosis* (Brooklyn Museum), suggesting a shared symbolic language across different media and forms of expression. A notable subset of vessels features blue paint on white stucco, distinct from the typical Black-on-White ceramics. Although the Blue-on-White repainting shares the Postclassic Huastec symbolic language, it does not necessarily replicate the previous designs of a given vessel. An example at the Museo de Antropología de Xalapa (MAX), where the stucco has partially fallen off, reveals that the original black and red vertical lines contrast with the vibrant turquoise blue repainting that reflects the complex symbolic language seen in stone sculptures. This paper examines these vessels and presents data from an initial archaeometric study at the MAX to analyze the materiality of the colors.

Richter, Kim [344] see Pye, Mary

Richter, Kristine [235] see Ho, Percy Hei Chun

Rick, John [331] see Rojas-Pelayo, Lisseth

Rick, John [182] see Tomczyk, Weronika

Rick, Rosa [331] see Rojas-Pelayo, Lisseth

Rick, Rosa [182] see Tomczyk, Weronika

Ricker, Matthew [325] see Marken, Damien

Rickett, Sara (University of Utah), Lisbeth Louderback (Natural History Museum of Utah, University of Utah), and Dayna Tinsley (G2 Archaeology)

[126] *Human Settlement and Subsistence Derived from Starch Granules on Ground Stone Tools in Southern Nevada, USA*

This study integrates starch granule analysis, botanical surveys, and comprehensive site analysis to shed light on the relationship between local plant resources and past human settlement and subsistence activities. Starch granule analysis on ground stone tools has the potential to reveal information about plant foods that have been processed and consumed in the past. Botanical surveys determined the relative abundance of plant resources on the cultural landscape. This study examines the potential relationship between existing populations of *Pinus monophylla* (single-leaf pinyon) and *P. monophylla* starch residues found on the tools. Demonstrating such a relationship would suggest that the availability of this resource significantly influenced the establishment of pinyon camps in the past. To test this hypothesis, 64 ground stone tools from 12 sites were analyzed for starch residues. Sampling was conducted in the field using novel protocols designed to mitigate and assess environmental contamination, including the collection of control samples. The outcomes of this analysis will not only enhance future starch analysis protocols but also contribute to ongoing research in the Great Basin, providing valuable insights into the lifeways of past human populations in the region.

Riebe, Danielle (University of Georgia), Emily Zavodny (University of Central Florida), Susan Allen (University of Cincinnati), Victoria Nuccio (HNTB), and Olta Idrizi (University of Cincinnati)

[160] *All the Small Things: Reconstructing Changes in Environment and Diet at the Late Neolithic Site of Csökmő-Káposztás-domb*

Over the past six years, the Prehistoric Interactions on the Plain Project (PIPP) has carried out intensive and extensive archaeological investigations at the Late Neolithic site of Csökmő-Káposztás-domb located on the Great Hungarian Plain. Across the 105 ha tell-centered settlement complex, a total of 20 test units and larger excavation blocks have been strategically opened over magnetometric anomalies identified as buildings. The excavations have resulted in a plethora of archaeological materials for analysis, including both zooarchaeological and archaeobotanical remains. Preliminary results from the assemblages are presented and contextualized within a chronological framework to begin reconstructing changes in diet, environment, and sociocultural practices over the 600 years of occupation at the site.

Riel-Salvatore, Julien (Université de Montréal), and Armando Falcucci (University of Tübingen)

[384] *Investigating the Aurignacian as Basic Science in Paleoanthropology*

Probably more so than any other technocomplex, research on the Aurignacian *sensu lato* has been a crucible of basic science in Paleolithic archaeology and paleoanthropology. Over the past century and a half, steady research on this industry has greatly refined our understanding of its defining features and, increasingly, its internal variability, leading researchers to investigate it from a holistic anthropological perspective. However, its age, its context, association with scant human remains and with new technologies, and exploited prey species have also led to the development of cutting-edge methods to investigate it and its material manifestations. In many cases, these methods have subsequently been incorporated into day-to-day research in other Paleolithic contexts, thus yielding fundamental new data to contextualize the adaptation of various hominin groups over time. This paper presents an overview of what this implies for research into this technocomplex going forward and for how we consider its place in the development of paleoanthropology as a discipline overall.

Riel-Salvatore, Julien [156] see Cadieux, Agathe

Riel-Salvatore, Julien [384] see Falcucci, Armando

Riel-Salvatore, Julien [384] see Gazzo, Silvia

Riel-Salvatore, Julien [384] see Negrino, Fabio

Rieth, Amy**[114]** *Investigating Geospatial Arrangements of Stone Knapping at a Maya Lowland Site Using Random Forest Modeling*

The machine learning algorithm Random Forest has proven highly accurate in classifying archaeological soil and lithic microdebitage particles. Understanding this efficacy, this model was selected for implementation on soil samples collected from the market plaza of the Late Classic Maya site of Tzikin Tzakan. The ultimate aim of this effort is to discern the spatial arrangement of lithic microdebitage within this socioeconomic space, with the hope of contributing to a better understanding of the interpersonal dynamics surrounding the practice of stone knapping. Upon application of the Random Forest classification model to a subset of the soil samples collected at this site, nearly all samples tested contained lithic microdebitage particles. The highly frequent presence of lithic microdebitage within samples taken across the plaza indicates the strong likelihood of stone-knapping practices on the plaza floor, with good likelihood that this practice existed within multiple areas of the plaza. The use of the Random Forest classifier on these samples thus points to the existence of nodes of stone knapping within this site's plaza space.

Rieth, Christina (New York State Museum)**[377]** *Arthur C. Parker: Archaeologist and Ethnologist in New York (1881–1955)*

Arthur C. Parker was born in 1881 on the Cattaraugus Reservation in New York. Throughout his career he served both as an advocate for Indigenous peoples and sites that they inhabited. His career was based on sites in New York, working with the New York State Museum and the Rochester Museum of Arts and Sciences. Here, he helped to advance the discipline of archaeology by showing how museums can help to present information about past cultures. He authored many articles on NY archaeology and ethnology that are still classics today. During the Great Depression, he helped to create the WPA-funded Indian Affairs Project, which helped members of the Seneca Nation create artifacts that could be used in exhibits. In 1935, he was elected the first president of the Society for American Archaeology. He retired from the Rochester Museum in 1946 and continued to be active in Indian affairs until his death in 1955. In this presentation, I discuss the accomplishments of Arthur Parker and how his influences helped in creating the archaeology that we see today.

Rieth, Timothy (International Archaeological Research Institute), Alex Morrison (International Archaeological Research Institute), and Darby Filimoehala (International Archaeological Research Institute; Inical Research Institute Inc.)**[173]** *Eight Centuries of Human-Environment Interactions in Ka'ūpūlehu Ahupua'a, Hawai'i Island*

Archaeological investigations within Ka'ūpūlehu Ahupua'a on the leeward coast of Hawai'i Island during the 1980s and 1990s generated a substantial assemblage of artifacts, faunal remains, and archaeobotanical samples. Kamehameha Schools, the landowner, has curated these collections, and in part through community-guided objectives, contracted redating, zooarchaeological, and archaeobotanical studies. This renewed research (1) establishes a relatively robust chronology, (2) documents largely stable marine subsistence activities, and (3) records a dynamic plant community responding to fuel gathering, harvesting of other botanical materials, and agriculture. These results can aid community efforts for marine and forest restoration.

Rigaud, Solange [384] see Doyon, Luc

Riggs, Brett [123] see Ernenwein, Eileen

Riley, Tim (Utah State University Eastern), and Katy Corneli (Utah State University Eastern Prehistoric Museum)**[39]** *Splicing It All Back Together: Adding Context to Undocumented Perishable Collections*

As the search for archaeological information transitions from excavation to exploring extant collections, a common deficiency arises in artifacts full of potential scientific value that lack context, history, or even donation information. Whether labeled "Legacy," "Education," or simply "Found in Collections," these undocumented items are housed in museums throughout the world. And although such artifacts may be among the most well-preserved, rare, or elaborate objects in a museum's collection, they may also be at higher risk for neglect or degradation because of their status in the collection. At the USU Eastern

Prehistoric Museum, 119 perishable artifacts, formerly designated as “educational” items, were transferred into the permanent collection for preservation and research. Staff have been recording and analyzing these artifacts, which most likely come from Fremont and Ancestral Puebloan contexts, in an effort to enhance their research value. This paper details the results of that effort and lays out basic recommendations for handling and storing such fragile and easily overlooked material.

Rilk, Jennifer (Bureau of Reclamation)

[95] *Gifts in the Rifts: Possible Visitation Verifiers at the Watson Petroglyph Site, Southeastern Oregon*

During the Bureau of Reclamation’s most recent effort to document the more than 1,000 rock art elements at the Watson Petroglyph Site in Malheur County, Oregon, evidence of an unexpected cultural practice was identified. Deposited in the cracks and placed under spalls of some of the petroglyph-bearing basalt boulders are smooth river pebbles, chipped stone artifacts, and culturally modified freshwater shell fragments. Because there is no evidence of long-term precontact habitation at or near this site, it is speculated that rock art may have been the focus of this place. The images are overwhelmingly Great Basin Abstract in style, but the practice of leaving visitation verifiers at special places is known on the Columbia Plateau. This paper explores the possible cross-cultural utilization of this site and the significance of its location at the peripheries of two distinct cultural regions.

Ringelstein, Austin

[336] *“There it was, water under the baked brown hills of Ojai”: The History and Archaeology of the Senior Canyon Tunnel*

On December 13, 1929, the *Ojai Newspaper* extolled, “WATER is life itself here and without it we are helpless to develop the Ojai Valley.” Evidently, the advent of new water technologies allowed many dryer areas in the American west to rapidly transform into burgeoning agricultural and residential communities. While the so-called “Water Wars” of Los Angeles (LA) have been well documented, the development of water infrastructure along the LA and Ventura County coastal margins seem to have received less attention, even though there was a confluence of many of the same major players. Historical and archaeological investigations of the approximately 3,000-foot-long Senior Canyon Water tunnel in Ojai illustrate some of the lengths that societies went in the western United States in order to develop critical water infrastructures in their communities. This paper reports on the findings and considers some of the enduring costs and benefits of these types of enterprises.

Ringstaff, Christopher

[112] *An Examination of Indirect Percussion Knapping Tools in Texas: Experimentation, Observations, and Analytical Implications*

As part of flintknapping experimental design, archaeologists must consider raw materials and knapping tools that best replicate those used in the production of the artifacts being studied. While conducting research on indirect percussion as a reduction method in Texas lithic assemblages, a collections and literature review revealed numerous antler artifacts thought to be used for indirect percussion knapping. Various called punches, drifts, and antler cylinders, this presentation provides an overview of these implements from numerous sites and contexts across the state and evaluates their effectiveness as tools used for indirect percussion. Flintknapping experiments were performed as part of the study using replicas of the antler artifacts for biface manufacture. For comparison, a series of direct percussion biface experiments was also conducted. Use-wear generated during the experiments was documented and use-techniques are proposed based on the form and efficacy of the replicated punches. Initial results of this study reveal notable use-wear similarities between punch replicas and artifacts supporting their use as flintknapping tools. In addition, experimental bifaces attained higher width to thickness ratios using indirect percussion and debitage platforms clustered smaller when compared to direct percussion.

Rios Allier, Jorge (Indiana University)

[269] *Cultural Revaluation and Sustainable Development in Oaxaca: A Local History of the Management of Archaeological Resources*

This abstract presents an analysis of the history of archaeological resource management in Oaxaca,

highlighting contemporary challenges and emerging community-based solutions in a context of deglobalization. Throughout its history, Oaxaca has been an epicenter of Mesoamerican cultures, hosting a vast archaeological heritage that has been managed by both state institutions and local communities. However, the administration of these resources has faced significant challenges, ranging from commercial exploitation and mass tourism to a lack of resources for adequate conservation. Currently, deglobalization processes have intensified these challenges, creating uncertainty about the sustainability of traditionally centralized management models. In response to this situation, Oaxacan communities have begun to develop innovative solutions based on self-management and local participation. These community initiatives focus on the protection of archaeological heritage through cultural revaluation, the promotion of responsible tourism, and the strengthening of local governance. By reclaiming control over their archaeological resources, the communities aim not only to preserve their cultural identity but also to create sustainable development models that address the challenges posed by deglobalization. This community-based approach offers a viable alternative to traditional management models, emphasizing the importance of local participation in heritage conservation and cultural resilience in times of global change.

Rios Allier, Jorge [334] see Higelin, Ricardo

Riquelme, Rodrigo [53] see De Souza, Patricio

Riris, Philip [341] see Harris, Barney

Riris, Philip [334] see Korpershoek, Mirte

Rissolo, Dominique (University of California, San Diego), and Jeffrey Glover (Georgia State University)

[41] *The Maritime Maya and the Rise of the Itza: The View from Northern Quintana Roo, Mexico*

Coastal centers of trade and production shaped and reshaped political, economic, and social realities across the northern Maya lowlands during the Terminal Classic and Postclassic periods. Embodying a resilience and entrepreneurship unique to life by the sea, these cosmopolitan mariners and merchants made possible the rise of the Itza and the expansion of their power and influence on the Yucatán Peninsula. Recent archaeological research along the north coast of Quintana Roo reveals not only the unique culture history of the region's maritime residents but offers insights into coastal identities that were distinct from those of their inland contemporaries. In this respect, we examine how the character of coastal communities positioned them to be active agents in the remaking of northern lowland Maya society during the rise of Chichen Itza. Additionally, we focus on understanding the complex interrelationships between the ancient Maya and their environment along the northeast coast of the Yucatán Peninsula. Shoreline reconfiguration and associated ecological shifts affected the lifeways of the maritime-adapted inhabitants of the region. Correlating multiple facets of the paleoenvironment with broader social and economic developments can reveal the challenges faced and opportunities pursued by maritime peoples as they interacted with their changing coastal landscape.

Rissolo, Dominique [381] see Clark, Loren

Rissolo, Dominique [283] see Glover, Jeffrey

Ritchey, Melissa [107] see Catlin, Kathryn

Ritchison, Brandon (University of Illinois, Urbana-Champaign), and Matthew Davidson

[50] *Taking Shelter: Exploring a Sixteenth- to Eighteenth-Century Chronology on the Northern Cumberland Plateau*

In this paper we describe our initial chronological reexamination of a portion of the central Ohio River Valley during the transition from pre- to post-European contact and colonialism. The post-sixteenth-century diaspora of the Shawnee people figures prominently in historical, and archaeological, narratives of European and Early American/Native interaction throughout eastern North America. However, these narratives have frequently focused on the removal of the Shawnee from their homelands; yet diasporic communities retain strong connections to their homelands. We investigate continuity in ancestral Shawnee engagements with their homelands during this time of diaspora and transition through the creation of new radiocarbon data

from existing museum collections. We have targeted terminal indigenous occupations of open-air rockshelters in what is today the Daniel Boone National Forest as well as village sites known to bookend the Shawnee Diaspora, Hardin Village, and Lower Shawneetown.

Ritchison, Brandon [32] see Doubles, Catherine

Rivas Alava, Daniel (Emory University)

[85] *Paleopathologies Represented in the Iconography of Ancient Coastal Societies of Ecuador*

Typically, paleopathology diagnoses ancient diseases by examining human skeletal remains through gross or histological analysis, radiography, and CT imaging. However, in recent years, iconography has increasingly enabled the identification of genetic-hereditary and congenital conditions that might otherwise only be detected in well-preserved skeletal remains or through molecular studies. This poster presents the results of an iconographic analysis of 199 figurines from precolumbian cultures in the coastal region of Ecuador. Of these, 147 figurines depicted some pathology, including at least seven genetic-related pathologies, five congenital conditions, and four acquired conditions. Notably, many of these diseases were represented in figurines associated with shamans. These findings underscore the importance of integrating iconographic studies with traditional osteological analyses to deepen our understanding of paleopathologies and their conception within the cosmivision of ancient Indigenous peoples.

Rivas-Estrada, Sebastian [374] see Benzonelli, Agnese

Rivera-Collazo, Isabel [233] see Rodríguez-Delgado, Eric

Rivera I., Arturo [182] see Kennedy, Sarah

Rivera Prince, Jordi (Brown University), and Gabriel Prieto (University of Florida)

[45] *Breaking the Past to Break from the Past: Could the Construction and Placement of Contexts Containing Dismembered Natural Mummies Have Helped to Legitimize Moche Power?*

Bioarchaeological studies often focus on *who* is present in a context, *how* they got there, and *why* this might be. Votive contexts are unique because of the circumstances leading to their deposition—however, more attention is placed on the processes that resulted in these deposits, versus the places where this happened (Bradley 2000:37). Excavations at the José Olaya–La Iglesia site uncovered two distinct contexts of layered, commingled human remains with articulated limbs and isolated bones (Rivera Prince et al. 2018). Stratigraphic association suggests these individuals, buried during Huanchaco’s hegemony of the Virú society (ca. 100 BC–AD 450/500), were broken apart and redeposited in a ceremonial space by the Moche (ca. AD 450/500–850). Drawing on historicities, semiotics, and theories of placemaking, we argue that the destruction of mummies was an act of iconoclasm. Their reburial—particularly in a place with enduring connection to the past—may have changed the nature of Huanchaco’s community perspectives on death and mortuary practices. Creating places with bodies representing the past, the Moche constructed physical locations in the landscape that concretized a break from the “ways of doing things before.” An enduring existence of these contexts may have served as physical (re)inforcements of Moche power, opening a future of new possibilities. *****This presentation will include images of human remains.**

Rivera Tames, Antonella [184] see Kohut, Lauren

Rivera Tames, Antonella [192] see Langlie, BrieAnna

Rivero Weber, Lilia (Programa Universitario de Estudios sobre la Ciudad, UNAM)

[242] *La Cueva de las Manitas, pintura rupestre y su estado de conservación: Estudios preliminares*

Ubicada en una importante área cultural oaxaqueña y parte de la reserva de la Biosfera declarada por UNESCO sitio Patrimonio Mundial, la Cueva de las Manitas presenta una diversidad de pintura rupestre única en su tipo, con diferentes temporalidades de ocupación y una diversidad de aplicación de técnicas pictóricas. El conocimiento de su composición y estado de conservación es esencial para poder determinar el tratamiento de conservación que debe aplicarse a tan importante arte rupestre. En este artículo se hablará de

los procesos llevados a cabo de manera multidisciplinaria y la diversidad de estudios científicos que se han llevado a cabo para comprender el espacio cultural y sus diversos momentos creativos, así como los posibles procesos de deterioro que podrían amenazar a cada una de las representaciones culturales ahí pintadas. Por último, las primeras pruebas de tratamiento de conservación para la consolidación pétreo, y los resultados de las mismas, hacia una definición de los métodos que se utilizarán para la preservación de uno de los ejemplos más sobresalientes de arte rupestre en México.

Rivers, Stephanie

[336] *Women's Health and Patent Medicine at the Lucas Museum Site, Los Angeles*

Historical archaeology presents critical opportunities in the study of health and wellness. This is particularly true for late nineteenth-century Los Angeles, where economic growth and rapid immigration created distinct circumstances. One neighborhood, the Southern District Agricultural Park, was created in 1872 to encourage new residents to take up farming by offering a space to exhibit their agricultural talents. In addition to exhibition space, the 14.27-acre park also included several businesses along with single and multifamily homes. Extensive archaeological excavations conducted in the area in 2018 yielded a large sample of artifacts, particularly medicine bottles, that are relevant to health and wellness. Research on this collection provides insight into how individuals dealt with issues surrounding health and wellness in this Los Angeles neighborhood during the late nineteenth century.

Rizzuto, Branden (University of Toronto), and David Killick (University of Arizona)

[374] *Precolumbian Production of Copper and Copper-Arsenic Alloys on the North Coast of Peru: A View from the Jequetepeque Valley*

Scholars have argued for decades that a transition from copper to copper-arsenic alloys occurred on the North Coast of Peru sometime during the Middle Horizon period (ca. 600–1000 CE). This transition is still poorly understood because little physical evidence of smelting has been reported from the early Middle Horizon and preceding periods. Middle Sicán (ca. 900–1100 CE) metallurgy in the Lambayeque-La Leche Valleys has been extensively studied, and some variation in the *chaînes opératoires* used to produce copper-arsenic alloys has been shown. We report here results from extensive typological analyses of over 2,500 small fragments of ores, gangues, crucibles, slags, and smelted metal from the Late Moche–Transitional site of Huaca Colorada (ca. 715–915 CE), and archaeometric analyses of a sub-sample of this assemblage. We also provide a preliminary report on metallurgical debris recovered from the likely Late Intermediate period (ca. 1000–1476 CE) site of Huaca Dos Cruces. Although no intact furnaces were found at either site, these remains allow the reconstruction of some parts of the *chaîne opératoires* of metallurgy, which we compare with those documented at Sicán sites in the Lambayeque-La Leche Valleys and sites of various ages elsewhere on the North Coast of Peru.

Roady, Kegan (Chronicle Heritage), Matthew Steber (Chronicle Heritage), Kelsey Hanson (University of Texas, Arlington), and James Potter

[68] *A Cultural Resource Management Field School: Synopsis of the 2024 Field Season*

The cultural resource management (CRM) industry is growing rapidly, yet there is a widespread shortage of trained CRM professionals and a lack of adequate training opportunities for students. To address this disparity, the PaleoWest Foundation, Chronicle Heritage, and Crow Canyon Archaeological Center have partnered to offer a cultural resource management field school dedicated to providing students with the practical skills necessary to enter the CRM industry. This intensive, two-week course emphasizes training in survey methods, site recording protocols and best practices, current technology used in the field by CRM practitioners, descriptive writing for site records and reports, consultation and collaboration with Tribal Nations, and the basics of evaluating sites for listing in the National Register of Historic Preservation Act per Sections 101, 106, and 110 of the National Historic Preservation Act. In this poster, we will share the outcomes of the first year of this collaborative archaeological training program and offer some insights into what to expect in 2025.

Roberts, Jacob (University of Florida), Matthew Sayre, Elizabeth Ramshaw, Daniel Contreras, and Erick Acero-Shapiama (Programa de Investigación Arqueológica Chavín de Huántar)

[64] *Defining the Domestic at Chavín de Huántar: Learning from the La Banda Sector*

Excavations in the La Banda Sector at Chavín de Huántar have since 2003 exposed dense small-scale architecture that suggests living and working spaces of the labor force and craft specialists who were fundamental to the growth and success of this monumental center. The possible presence of walled compounds revives questions of whether urban settlement was associated with Chavín. Integration of data from the last two decades of research brings into focus a more fundamental question: how should this dense architecture be interpreted? How should the categories of “domestic” and “urban” be understood in the Middle Formative period Central Andes, if they are in fact appropriate at all? Here we integrate diverse data produced over >20 years to explore the layout, density, and function of architecture in La Banda. Architectural data from >600 m² of excavated area suggests the existence of walled compounds similar to central Andean examples from the subsequent millennium. We compare the scale, orientation and layout of these compounds to later examples to explore whether these compounds from Chavín fit an Andean urban pattern.

Roberts, Jacob [64] see Ramshaw, Elizabeth

Roberts, Jerod (Mesa Prieta Petroglyph Project)

[291] *Spatial Variability of Red Linear Pictographs in the Lower Pecos*

This study employs geospatial analysis to explore the distribution and variability of Red Linear style pictographs in the Lower Pecos Canyonlands of Texas. The examination of 614 Red Linear anthropomorphs across 25 sites reveals distinct regional patterns, including an east-west gradient in figure size, body types, and head shapes. Larger figures with diverse attributes are more prevalent in western sites, while smaller figures dominate the east, suggesting varying cultural influences across the landscape. Radiocarbon dating of selected figures provides a temporal framework, placing their production between 4830 ± 35 and 4275 ± 35 RCYBP. The integration of geospatial and chronological data refines the understanding of the Red Linear style, offering new insights into the cultural dynamics that shaped rock art production in the Lower Pecos. This research highlights the value of spatial analysis in rock art and archaeology, revealing patterns in cultural expressions across the landscape.

Roberts, Patrick [167] see Mogesie, Seminew

Roberts, Ted (UES), and Robert Stephen Simons (UES)

[60] *A New Look at the Late Archaic Period in Northwest Florida*

The Late Archaic period in northwest Florida remains poorly understood and like so many regional archaeological constructs, deserves to be periodically reexamined. Archaeologists have long investigated Late Archaic archaeological “firsts” in the region, such as the earliest pottery in North America, the earliest shell midden accumulations, and the earliest evidence for household structures, etc. As such, the relationship between general adaptations of the Late Archaic to well-known pan-regional cultural traditions has formed the basis for interaction models since the earliest archaeological investigations in northwest Florida. Leveraging new data and theoretical frameworks and stimulated by recent site characterizations undertaken by UES near Choctawhatchee Bay, we hope to reinvigorate discussions regarding the Late Archaic in the Florida Panhandle by contributing to the critical discourse necessary to keep regional variations relevant to hunter-gatherer research and studies of insipient/emerging technologies and culture change in a broader context.

Roberts Thompson, Amanda [227] see Demyan, Marcela

Roberts Thompson, Amanda [188] see Kowalewski, Stephen

Robinson, Erick [91] see Finley, Judson

Robinson, Erick [223] see Rapson, David

Robinson, Erick [280] see Thomas, David

Robinson, Gerry [340] see Hawkins, Rebecca

Robinson, Joshua [193] see Osborn, Jo

Robitaille, Anne-Julie

[348] *Materializing Sound: Exploring the Crafting of Bone Mouth Harps and Their Significance at Shimao (2300–1800 BCE), Shaanxi Province*

Recent excavations at the Late Neolithic site of Shimao (2300–1800 BCE), Shaanxi Province, have revealed the oldest specimens of mouth harps, a lamellar mouth-resonated musical instrument. Fashioned from cattle ribs, they represent the most comprehensive collection of mouth harps from a single site, pushing back the historical origins of the instrument and providing a unique window into past sound production and musical practices. Together with monumental stone fortifications and architecture, abundant elite goods, and large quantities of debris that indicate large-scale crafting activities, these findings suggest that music may have held a significant religious and political role in Shimao society. However, our understanding of the contexts in which these mouth harps were used and made remains limited. This study combines morphological analyses, experimental archaeology, and ethnographic accounts. I fabricated several replicas and conducted acoustic analyses with a comparable contemporary mouth harp to (1) understand the morphological, dimensional, and stylistic variations in Shimao's mouth harps; (2) investigate how their design affects sound production; and (3) re-create the contexts of their fabrication and use. Ultimately, this presentation uses Shimao's mouth harps to explore the connection between sound-making practices, craft production, and political-religious power during China's transition from the Neolithic to the Bronze Age.

Robles, Edsel [376] see Sugiyama, Nawa

Robles, Erika, Mackinley FitzPatrick (Harvard University), and Solsiré Cusicanqui Marsano (Harvard University)

[327] *A Case of Looting and Alteration of Archaeological Objects: An Andean Dressed Figurine at Harvard's Peabody Museum*

Looting is a significant issue in archaeology, particularly in the Andes, where it has led to the decontextualization of numerous archaeological artifacts. This paper presents a case study on an Andean figurine dressed in beautiful textiles that was donated to the Harvard Peabody Museum of Archaeology and Ethnology in 1940. The figurine and its textiles notably correspond to different prehispanic Andean cultures and contexts. This analysis exemplifies how various archaeological objects were manipulated and altered to create the final object. The aim of this study is to investigate the provenance, original function, and meaning of the components that comprise the piece, enhancing our understanding of the cultures that produced them. Analyzing this figure provides valuable insight into the dynamics and mechanisms of looting that occurred over seven decades ago. Identifying previously looted objects in museum collections can help highlight the impact of large-scale looting, the accumulation of archaeological artifacts, and their transformation into marketable items, both historically and currently. Looting not only affects our understanding of Andean history and culture but also poses challenges for the conservation and preservation of cultural heritage.

Robles García, Nelly (Instituto Nacional de Antropología e Historia)

[242] *Contextos rituales, cotidianidad y domesticación en una cueva de la Cañada Oaxaqueña*

Los recientes descubrimientos en la Cueva de las Manitas, Oaxaca, nos muestran que la domesticación de plantas, incluido el maíz, tuvo lugar en contextos rituales colectivos y una actividad cotidiana que se llevó a cabo en esta cueva desde al menos cinco mil años antes del presente. La conservación de gran variedad de materiales ha sido sorprendentemente buena, lo que nos ha permitido identificar y valorar los restos orgánicos e inorgánicos, e identificar áreas de actividad al interior de la Cueva. Así mismo percibir el ambiente intelectual de la creatividad producto de una cosmovisión sostenida a lo largo de los periodos de ocupación del sitio.

Robles García, Nelly [242] see Tuross, Noreen

Robles-Montes, Mayra, Morgan Smith, and Enrique Nava-Sánchez (CICIMAR-IPN)**[345] *Prehistoric Landscape Transformation of Isla Espíritu Santo: A Geoarchaeological Approach***

During the 12.5–6.5 ka period, early humans began to inhabit Isla Espíritu Santo (IES), which underwent significant changes due to rising sea levels. These changes led to the disappearance of ancient coastlines and the transformation of the surrounding coastal landscapes. The intricate relationship between land and ocean highlights the importance of integrating knowledge of marine geology and coastal processes to fully understand relict coastlines' preservation potential and evolution over time. This research aimed to identify the morphological features of ancient coastlines using marine geophysics, primarily employing side scan sonar and sub-bottom profiler technologies. Analysis of marine geophysics data revealed morphological and stratigraphic evidence of paleoshoreline locations along the western coast of IES and in the San Lorenzo Channel. In summary, the geoarchaeological examination of the physical landscape is essential for exploring submerged prehistoric settlements as it provides a firsthand understanding of the spatial and environmental context in which early maritime societies thrive.

Robson, Archie (Durham University), Marta Diaz-Guardamino (Durham University), and Katina Lillios (University of Iowa)**[85] *Communities of Practice in Neolithic and Copper Age Iberia: The Application of RTI to the Engraved Stone Plaques***

Engraved slate plaques are a distinctive feature of the Late Neolithic and Chalcolithic of the west and southwest of the Iberian Peninsula, largely recovered from megalithic tombs as well as diverse mortuary and nonmortuary contexts. More than a century of research has investigated their form, function, distribution, and evolution across the fourth and third millennia BCE. The plaques have been variously interpreted as heraldic objects, mnemonic devices, “goddess” figurines, and zoomorphic children’s toys, among other views. Their association with human skeletal remains has led to the suggestion that many were funerary offerings. However, the life-history of these objects have received less attention and remain a subject of ongoing research. This study applies RTI (Reflectance Transformation Imaging) to a sample of 26 plaques and plaque fragments, to analyze the sequence of marks and identify distinct and comparable traits, testing the hypothesis that shared “communities of practice” were responsible for their production. This analysis assesses the entire corpus of marks present on each artifact to establish their full life-histories. The study supports previous work that plaque production was locally specific and identifies expert and novice engravers on individual plaques. Distinctive “isolated marking groups” on several plaques were identified as possible symbols of authorship.

Rochat, Alexis [345] see Naudinot, Nicolas

Rockwell, Heather (Salve Regina University), and Nathaniel Kitchel**[217] *Red Chert Workshops of Northern Maine: A New Fluted Point Period Locality in the Munsungun Lake Formation***

In the Northeast (New England, southern Quebec, and the Canadian Maritime Provinces) red chert from the Munsungun Lake formation is often associated with the fluted-point period. Despite this, repeated association clear quarry areas for red chert are uncommon within the formation. After nearly a decade of survey and excavation at the NKP complex, the only well-tested red chert quarry currently documented in the Munsungun Lake formation failed to document unequivocal evidence for a fluted-point period occupation at this locale. In the summer of 2024, the Salve Regina University archaeological field school along with volunteers from the New Hampshire Archaeological Society conducted renewed excavations within the NKP complex. These efforts recovered two broken and one complete fluted points among other associated tools confirming the NKP complex as a locus of toolstone acquisition and tool production during the fluted-point period. The recovery of fluted points at the NKP complex also makes this locale among a small number of well-documented fluted-point period quarry related workshops both regionally and nationally. Here we detail the results of our 2024 excavations and the conclusions drawn from our preliminary analyses of these materials.

Rockwell, Heather [317] see Trischman, Kaleigh

Roddy, Kellie**[180]** *Representations of Resources in West Mexican Shaft Tomb Figures*

West Mexican shaft tomb sculptures (300 BCE–400 CE) have captivated scholars for their unique and intricate depictions, often analyzed through art historical lenses. While archaeological studies frequently touch on the significance of these figures, the specific representations of food and resources within them have received less focused attention. Notably, these figures rarely depict domesticated resources such as maize, which is commonly portrayed in other Mesoamerican regions. This research explores the significance of these representations, posing the question: What is the cultural and symbolic importance of depicting nondomesticated resources in shaft tomb figures, and how do regional styles of these sculptures correlate with the actual distribution of food resources in the region? By investigating the intersection of artistic expression and resource availability, this study seeks to uncover the potential cultural and environmental factors that influenced these unique depictions.

Rodgers, Rilee, and Naomi Curran (University of Mary Washington)**[33]** *Curating Chaos: Addressing the Curation Crisis from a Student Perspective*

The “Curation Crisis” refers to problems associated with the neglect of long-term care and management of archaeological collections. US repositories in charge of caring for archaeological collections are underfunded, understaffed, and overcrowded, leaving them unable to properly care for collections. Despite the magnitude of this problem, most undergraduate archaeology programs almost exclusively place their focus on fieldwork. The T.A.C.L. Field School hosted by the Arkansas Archeological Survey and the Institute for Field Research aims to start bridging this gap. This paper will address problems we encountered and possible solutions from our unique perspective as the next generation of archaeologists.

Rodning, Christopher (Tulane University), David Moore (Warren Wilson College), Rachel Briggs (University of North Carolina, Chapel Hill), and Robin Beck (University of Michigan)**[50]** *Dating the Berry Site in Western North Carolina: Problems, Prospects, Potential*

The Berry site, located in the upper Catawba River Valley of western North Carolina, is the location of the principal town of the Native American province and polity of Joara, and the location of the mid-sixteenth-century Spanish outpost of Cuenca and Fort San Juan. Archaeological finds from this site are critical to knowledge about precontact Indigenous peoples along the eastern edge of the Blue Ridge Mountains and to understanding of Indigenous encounters and engagements with European explorers and colonists, including those associated with the Hernando de Soto (1539–1543) and Juan Pardo (1566–1568) entradas. At present, dates assigned to the Berry site in the aggregate and to discrete contexts at the site are based largely on Spanish written accounts, temporally diagnostic artifact types, stratigraphic associations, and a small number of radiocarbon dates from Berry site contexts that predate the arrival of the first Spanish colonial expeditions. This paper relates what we know about the chronology of the Berry site to dates for sites in surrounding areas, discusses contexts for which stratigraphic associations and clues from documentary sources are good candidates for radiocarbon dating of extant samples and analyses thereof, and outlines our current chronological model for this important site.

Rodning, Christopher [110] see Clark, Emily

Rodríguez-Alegría, Enrique (University of Texas), Wesley Stoner (University of Missouri), and Christopher Pool (University of Kentucky)**[289]** *The Many Contributions of Deborah Nichols to Archaeology*

This presentation introduces the session honoring Deborah Nichols and her many substantive contributions to archaeology. The presentation focuses on three of her last major projects, which exemplify her scholarship in a broad range of periods in central Mexico and Mesoamerica. They include her field project at the Formative village of Altica in central Mexico and the publication of *The Oxford Handbook of the Aztecs* and *The Oxford Handbook of Mesoamerican Archaeology*. These three projects showcase Nichols’s scholarly interests in the study of small villages and urban centers; the study of markets, the economy, production, and exchange; and her commitment to scholarly exchange and inclusion, whether in publication projects or in the field. The three projects also showcase Nichols’s research in a broad range of time periods in Mesoamerica,

from the Formative to the Postclassic and early colonial periods. The three co-authors of this presentation collaborated with Nichols on these major projects and will examine some of the substantive and theoretical aspects of Nichols's work and inspiring legacy.

Rodriguez Alzza, Carolina (University of Texas, Austin)

[46] *Donald Lathrap's Archival Legacy: Insights into Iskonawa Material Culture 50 Years Later*

Donald Lathrap, renowned for his work on Shipibo material culture, also conducted significant research with the Iskonawa, a small Indigenous group of around 100 people living in the Peruvian Amazon. During the early 1970s, Lathrap visited the Iskonawa, meticulously documenting their ceramic production practices and collecting pottery. At the time, he could not foresee the rapid decline of these traditions, which makes his collection an invaluable record of Iskonawa culture. Lathrap's materials are split between the Spurlock Museum, which houses the pottery, and the Museum of Nebraska, where his fieldwork notebooks are kept. This presentation aims to reassess Lathrap's archival materials on Iskonawa material culture, examining their significance over 50 years later. It will first describe the collection, focusing on the artifacts Lathrap gathered to represent Iskonawa household ceramics. Then, it will explore the broader implications of these materials, shedding light on their role in the ongoing revival of Iskonawa identity. By analyzing Lathrap's notes alongside the material culture, the presentation seeks to underscore the lasting impact of his research on our understanding of the Iskonawa people.

Rodríguez-Delgado, Eric (UC San Diego), Jose Garay-Vazquez (University of Exeter), and Isabel Rivera-Collazo (University of California, San Diego)

[233] *Constructing Public Architecture and Power on the Northern Coasts of Puerto Rico: The Archaeology of the Precontact Ceremonial Complex of Tierras Nuevas*

Throughout Caribbean prehistory, the construction of public architecture in ceremonial contexts is linked to expressions of status and power over local communities and resources. The appearance of these features such as mounds and ballcourts (*bateyes*) are largely associated with the Early to Late Ceramic period—broadly defined by long-distance cultural exchanges and continuing impacts from changing climates of the Late Holocene. The arrival of new cultural traditions and practices during this period alongside the physical impacts of atmospheric changes—wetter conditions, more intense storms, and rising sea-levels—likely posed a greater threat to existing resourcing strategies and settlement organizational patterns in coastal areas. The Tierras Nuevas Archaeological Project examines how social institutions solidified their power on the coast through the construction or transformation of public spaces and their uses amid periods of changing social and physical conditions. This paper presents recent ceramic, lithic, and paleobotanical analyses recovered from the 2023 excavations of Tierras Nuevas, a ceremonial complex site located directly on the northern coast of Puerto Rico in order to shed light on the changing practices and uses related to precolumbian public architecture.

Rodríguez Yábar, Alexis (University of South Florida), and Lady Ramirez Flores

[195] *Preliminary Results of Ceramic Style Distribution and Occupation Patterns in the Middle Casma Valley*

The Casma valley, located on the northern coast of Peru, is crucial to the history of Andean archaeology, where the monumental buildings of the lower valley dating back to 3500 BC stand out. However, the middle Casma valley has received less attention. This study presents the results of an archaeological survey conducted in the southern section of the middle Casma valley in an area of 500 ha. The objective was to identify the distribution of ceramic styles in the area and to analyze their relationship with the recorded archaeological sites and the surrounding landscape. To achieve this objective, we used mobile GIS tools to systematically record each ceramic collection point in our study area. In addition, we employed drone photogrammetry to document the archaeological sites. Preliminary results suggest a stylistic variation spanning from the Early Horizon to the Late Intermediate period. The most prominent occupations are the Early Horizon (800–400 BC) associated with the Pallka archaeological complex and a later, dense occupation of the Casma polity (AD 700–1400), reflected in a series of domestic, administrative, and cemetery sites distributed throughout our study area.

Rodríguez Yábar, Alexis [195] see Dalton, Jordan

Rogers, Andrew (Statistical Research Inc.), and Nicole Herzog (University of Denver)

[129] *Starch Granule Analysis of Roasting Pit Features from Housepit 54 Reveal Temporal and Spatial Patterns in Geophyte Use over Time*

We present results from starch granule analysis on 35 lithic artifacts from two roasting pit features at Housepit 54, Bridge River, BC. One of the features dates to ~1500–1300 cal BP and is 94,306 cm³ in size. The second feature dates to ~1300–1000 cal BP and is larger at 168,780 cm³. The purpose of the microbotanical analyses was to determine which plants were used in roasting pit / hearth construction or were roasted themselves and therefore incorporated into the diets of the site occupants. Our results make clear that geophytes were an important component of the foods prepared in each feature, thereby supporting oral histories and ethnographic and ethnobotanic research previously conducted on pit-roasting features in the region. Further analysis of the two differently sized pits indicates a relationship between starch preservation and roasting pit/hearth construction and differences between resources roasted in each type of roasting pit/hearth.

Rogoff, David [349] see Kurnick, Sarah

Rojas, Jean-Paul (Vanderbilt University), Cristian Figueroa (University of Colorado, Boulder), and Rigoberto Navarro Genie (Independent Investigator)

[190] *Island Hopping: Surveying Nicaragua's Corn Island Archipelago*

Approximately 70 km from Nicaragua's southern Caribbean Coast lie the Corn Islands—a 13 km² volcanic archipelago remembered by both the ethnohistoric record and contemporary Afro-Indigenous oral tradition to have been home to the Misumalpan-speaking Kukra tribe at the point of European contact. The Kukra, who have historically inhabited both the mainland Nicaraguan coast as well as the Corn Islands, have been renowned for their expertise in fishing, hunting of marine animals, and seafaring. Despite this, limited archaeological research has explored the extent and importance of marine resources and long-distance maritime mobility for the Kukra, and much less in the insular context of the Corn Islands. Thus, following recent collections-based research and community-collaborative archaeological surveys in the Corn Islands, the team of the Proyecto Arqueológico del Municipio de Corn Island (PAMCI) has identified multiple terrestrial archaeological sites, representing material culture spanning from potentially the first peopling of the islands by Indigenous populations to British colonial occupation and forced arrival of enslaved Africans. Moreover, we discuss how the spatial distribution and material culture of the sites across the two islands provide important preliminary insight into how the islands' inhabitants might have engaged with and moved around their surrounding islandscape and seascapes.

Rojas, Maria, and Abner Alberda

[41] *Ethnoarchaeological Study of Prehispanic Boats in the Lakes of Atitlán and Izabal, Guatemala*

The study of the development of various prehispanic populations in Guatemala has primarily focused on relationships established through land-based networks. This perspective has limited the understanding of a broader development in which bodies of water played a crucial role, and whose activities and exchanges have not been sufficiently considered. In response to this data gap, an ethnographic-archaeological project was proposed in 2024 with the aim of investigating traditional naval vessel practices in Indigenous communities and comparing them with existing archaeological data for the lakes of Atitlán and Izabal. This project seeks to explore activities related to construction, navigation, and the relationships that may have been established through bodies of water in prehispanic times and which may continue to the present day.

Rojas-Pelayo, Lisseth (University of Florida), Erick Acero-Shapiama (Programa de Investigación Arqueológica Chavín de Huántar), John Rick (Stanford University; Programa de Investigación Arqueológica Chavín de Huántar), and Rosa Rick (Programa de Investigación Arqueológica Chavín de Huántar)

[331] *Making Communities Static through Human Remains Networks: An Initial Approach to Burial Site Selection in Mariash-Recuay Times at Chavín de Huántar*

The deceased have the capacity to engage with the living, impacting social roles, meanings, and the perception of places. At Chavín de Huántar, a prominent ceremonial center during the Formative period, the spatial

reoccupation by Mariash-Recuay exemplifies this interaction. This study investigates whether placing funerary contexts near the corridor between buildings C and D created a tangible and symbolic link between the formative material culture and the posterior communities. Through the intentional actions of these communities, the dead may be viewed as active agents in the evolution and transformation of that place and its identity. This research aims to contribute to the broader dialogue on the agency of the dead in placemaking and political landscapes, proposing that funerary practices were a precursor to the Recuay architectural occupation and served as a means of physical and social reclamation, embodying landscape connectivity with the former temple. The execution of those funerary events not only demanded collaborative work but also intra-community activities such as rituals and feasting held in surrounding areas. To face this, we combine archaeological records with spatial data and bioarchaeological analysis to provide a more detailed examination of the significance of the location studied. *****This presentation will include images of human remains.**

Rojas-Pelayo, Lisseth [159] see Acero-Shapiama, Erick

Rojas-Pelayo, Lisseth [182] see Tomczyk, Weronika

Roland, Sydney

[190] *The Lapita Cultural Complex: The Change, Movement, and Variability*

The Lapita Cultural Complex's (LCC) beginnings can be traced back to 3000 BP and connected to the Bismarck Archipelago. These material cultural practices can be seen spread throughout the Pacific Islands throughout time and with this dispersal came modifications and variations in the decoration and stylings of pottery. The pottery of the LCC can be divided into three different temporal units: Early, Middle and Late. Throughout these different temporal units of the LCC pottery, the intricacies of the designs begin to lessen, from the earlier dentate stamping style to the later plainware. The reasoning for this is not known though theory indicates it is due to the labor-intensive aspect of this method and other forms were a better fit for the ever-changing societal unit.

Rolett, Barry [173] see Molle, Guillaume

Roman-Ramirez, Edwin [26] see Scherer, Andrew

Roman-Ramirez, Edwin [45] see Scherer, Andrew

Roman Vargas, José (Paris I Panthéon-Sorbonne University), Henry Tantaleán (Universidad Nacional Mayor de San Marcos), Carito Tavera-Medina (University of Barcelona), Sayury Sanandres (Universidad Nacional Mayor de San Marcos), and Ricardo De La Cruz (Universidad Nacional Mayor de San Marcos)

[182] *Conociendo la fauna de los moches de Chicama: Una investigación arqueozoológica desde el sitio de Licapa II, costa norte del Perú*

Las evidencias de animales en el registro arqueológico en el sitio de Licapa II durante la época Moche, constituyen una línea de interpretación necesaria para comprender los procesos sociales durante el siglo VII dC en los Andes Centrales. Es así, que en esta ponencia presentamos y discutimos los resultados derivados del análisis de la muestra ósea animal proveniente del sitio arqueológico de Licapa II ubicado en la Costa Norte del Perú. El sitio se encuentra compuesto por diversos espacios entre los que resalta la producción de alimentos. Se excavó un área de 320 m² perteneciente a la zona urbana del sitio. En relación con la representación taxonómica, el conjunto arqueofaunístico se caracteriza por la presencia en mayor medida de camélidos. Sin embargo, destacamos la presencia de especies exóticas, que conjuntamente con otras materialidades posicionan al sitio en un importante eje de constante interacción.

Roman Vargas, José [282] see Tantaleán, Henry

Romero, Annette [207] see Breslawski, Ryan

Romero, Danielle [124] see Schollmeyer, Karen

Romero Butrón, Ashuni Emmanuel (Instituto Nacional de Antropología e Historia)**[283] *Shells, Turtles, and Ancestors: The Ancient Prehispanic Settlement of “El Meco”***

The archaeological site “El Meco” is located in the northeastern region of the Yucatán Peninsula, on the coast of the Caribbean Sea. The first explorations by W. Sanders in 1954 and the latter by Andrews, Robles, and colleagues in 1977 provided the basis to know the different moments of occupation that the site had and its nature. Seventy years later, the recent research conducted as part of the first season of the Proyecto de Investigación y Conservación “El Meco” (2023–2024) has allowed us to delve into the proposal of the hamlet or fishing village for the Classic period, in the Middle and Late Classic hiatus, as well as in the settlement proposed for the Terminal Late Classic, and the Postclassic. This shows the relevance of the site’s location for the maintenance of its population, the supply of raw materials, and likewise, its geopolitical situation within the maritime network of the flow of material and immaterial goods. At the same time, these different elements would be part of the symbolic and ideological construction of the groups that inhabited the site, showing a close relationship with the shells, turtles, and their ancestors. *****This presentation will include images of human remains.**

Romero Butrón, Ashuni Emmanuel [199] see Carino Anaya, Tanya

Romero Villanueva, Guadalupe (CONICET-INAPL, Argentina), Marcela Sepúlveda (Universidad de Tarapacá), and Ramiro Barberena (CONICET-UNCUYO)**[174] *Unveiling Time: Advancements and Challenges in Rock Art Dating across South America***

South America was the last continent to be explored by humans. While its rock art is globally important, it remains largely undated by absolute methods. However, over the past decade, the field of pigment art dating in this region has experienced a remarkable surge, with more than half of the extant dates generated during this period. While this progress is promising, now is an opportune moment to critically assess the key challenges faced in these case studies, alongside the theoretical and methodological advancements that this chronological data has contributed to the exploration of regional rock art studies. In this review, we examine the existing published direct dates of rock art paintings from South America by analyzing the foundational questions, protocols, analytical techniques, technical results, and archaeological interpretations. Accurate and reliable dating of rock art paintings is crucial for understanding how these traditions emerged, developed, and spread, deeply intertwined with the socio-ecological and historical dynamics of local communities. Finally, we discuss the significance of this body of chronometric data in enhancing our understanding of ancient visual communication strategies for landscape marking and information exchange in the last continental region to be colonized by humans.

Romo, Sean [75] see Derry, Emma

Roney, John [98] see Hard, Robert

Rooney, Matthew (Arkansas Archeological Survey)**[190] *African American Household Change over Time at an Arkansas Plantation***

The Hollywood and Valley Plantation, located in southeast Arkansas on the banks of Bayou Bartholomew, was home to at least four waves of migrating African Americans: two forced migrations of enslaved people of color in the 1820s and 1840s, and two voluntary migrations of Black sharecroppers in the 1870s and 1900s. Preliminary excavations at two different archaeological sites have uncovered three living spaces away from the surviving big house that have remnants of smaller houses built and lived in by Black families over the course of a century. Analysis of ceramic, glass, nail, and brick artifacts allow for a seriation of these three living spaces that correlates with documentary research about three of the four known migration events to this Arkansas plantation. The material culture recovered shows the materiality of enslaved African Americans living on an antebellum frontier and how this changed when sharecroppers replaced their labor and arrived along with the railroad, the development of nearby small towns, and greater access to retail shops and nonlocal products.

Roos, Christopher (Southern Methodist University), Mark Kaib (US Fish and Wildlife Service), Nicholas Laluk (University of California, Berkeley), Christopher Guiterman (CIRES, University of Colorado, Boulder; NOAA's National Centers for Environmental Information), and Thomas Swetnam (Laboratory of Tree-Ring Research, University of Arizona)

[375] *Tree-Ring Records of Pre-Reservation Ndée (Western Apache) Fire Stewardship and Niche Construction in East-Central Arizona 1600–1870 CE*

In the US Southwest, well-replicated fire histories suggest that abundant lightning and climate conditions drove frequent low-severity wildfires independent of human activities even as ethnography indicates that highly mobile, small groups of Western Apache (Ndée) foragers used fire in myriad land-use contexts. Here we leverage published and unpublished fire-scar records from Ndée traditional territory in central and eastern Arizona ($N = 25$ sites, $N = 669$ trees) to demonstrate that historical fire regimes in Western Apache traditional territory were overwhelmingly influenced by Ndée cultural burning. Our tree-ring synthesis shows significantly lower mean fire return intervals in Ndée territory than elsewhere in the region for centuries before the establishment of reservations (1600–1870 CE). Despite the heightened fire activity, fires were largely small and asynchronous, occurred disproportionately in late April and May, when Apaches spent significant time in these pine forests, and occurred independent of climate drivers. This suggests that Ndée fire stewardship created a patchwork of nearly annual small, spring fires that inhibited natural fire spread and limited the influence of drought on fire activity. Our work shows that even relatively small, highly mobile populations of forager-gardeners had significant influence on pre-Euro-American fire regimes despite abundant natural ignitions.

Roos, Christopher [112] see Allen, Myriah

Roos, Christopher [101] see Liebmann, Matthew

Roosevelt, Anna (University of Illinois, Chicago)

[377] *Digging a Forgotten Archeological Sequence in Amazonia: The Nineteenth Century to Mid-Twentieth Century and Beyond*

Nineteenth-century natural scientists interested in Amazon archaeology saw the region as having a long prehistoric sequence of early hunters, sedentary ceramic fisherpeople, farmers, and complex societies. Both South American scientists and institutions invited European and North Americans to join research in the region. But by ca. 1950, the first professional archaeologists coming in from North America had concluded that the rainforest had limited the entry of humans until migrants from Andean agricultural civilizations invaded in late prehistory. The advanced cultures of the migrants were assumed to have soon devolved to shifting villages in the hot, humid, hostile environment. The mid-twentieth-century scholars actively engaged South Americans in their research, and other foreign teams came to work there with time. But in contrast to assumptions about a hostile environment, these other archaeologists found evidence of both terminal Pleistocene hunting-gathering cultures and the eventual development of agriculture, complex cultures, and large, dense settlements in the Holocene. This paper reviews how research with different theoretical approaches and technical advances in dating, bioarchaeology, and geoarchaeology in the 1970s, 1980s, and 1990s transformed the picture of human prehistory in the Amazon to a sequence similar to but not identical to nineteenth-century notions.

Ropp, Allyson, and Ashley Lemke

[389] *Underwater Archaeology: Spade-Free Efforts toward Raising Our Sunken Past*

Underwater archaeology sits at a critical juncture between spade and spade-free archaeology. While many underwater archaeological projects have utilized traditional excavation methods to illuminate our sunken history, recent efforts have turned toward spade-free, in situ and/or virtual reality methodologies to investigate these sites, work toward their preservation, and expand our archaeological knowledge. This paper explores the intricacies of in situ underwater archaeological methods across diverse resources, efforts in interdisciplinary research of underwater sites, and current issues within the field of spade-free underwater archaeology. It will outline case studies in the Mallows Bay-Potomac River, Wisconsin Shipwreck Coast, and Thunder Bay National Marine Sanctuaries in the United States.

Rorabaugh, Adam**[206]** *Witness Them: Traditional Coast Salish Oral History and Fact-Checking Implications for Today*

In traditional Coast Salish societies of the Pacific Northwest Coast, the peoples of what is now Western Washington and Southwestern British Columbia, oral traditions were verified through a process called witnessing. Witnesses would be trained to recount and verify oral history and traditional teachings at high fidelity. Here, a simple model based on dual inheritance approaches to genes and culture, is used to compare this specific form of verifying socially important information compared to modern mass communication. The model suggests that witnessing is a high fidelity form of transmitting knowledge with a low error rate, more in line with modern apprenticeships than mass communication. Social mechanisms such as witnessing provide solutions to issues faced in contemporary discourse where the validity of information and even fact-checking mechanisms may be biased or counterfactual. This effort also demonstrates the utility of using modeling approaches to highlight how specific, historically contingent institutions such as witnesses can be drawn on to model potential solutions to contemporary issues solved in the past in traditional Coast Salish practice.

Rorhus, Katrina [300] see Dersam, Scott

Rosa Figueroa, Jeffrey (Environmental Resource Management [ERM])**[381]** *Archaeology's Problematic Relationship with Artifacts: A Critical Examination of Implicit Assumptions in Maya Cave Archaeology*

Archaeology is invariably defined along the lines of the scientific study of material remains to reconstruct past human history. This would appear to make artifact analysis central to archaeological research. In the course of my research on the Midnight Terror Cave artifact assemblage, however, I have found this to be far from the case. Examining the historical development of Maya cave archaeology, a major problem for the development of the subfield was the failure to define the nature of cave artifact assemblages. The field's first analyses appeared during the second half of the twentieth century, setting the model for the analysis of cave artifact assemblages. Rather than further developing these, artifact analyses all but disappeared from research and dissertations in the twenty-first century. Shortly after Maya cave archaeology was recognized as a legitimate area of study, only two dissertations produced cave artifact analyses. This raises some disturbing questions about the empirical foundation of these studies. This presentation explores the decline in artifact analysis over the last 35 years.

Rosado-Ramirez, Roberto (University of Virginia)**[284]** *Residential Limestone Quarrying as an Ancient Maya Craft Production Activity*

This presentation will focus on limestone quarrying activities in the Classic Maya (600–1000 CE) city of Ake, in present-day Yucatán, Mexico. Although often characterized as an unskilled activity, limestone quarrying required training, skill, and a specialized tool kit. The skills and specialized knowledge of ancient Maya quarry workers enabled them to identify and exploit specific qualities and types of limestone materials for construction projects. This craft production activity allowed the creation of both prestige and utilitarian items used as part of the built environment in ancient Maya communities. By conducting an analysis of 72 domestic limestone quarries, and focusing on data recovered from the excavation of one of these quarries, as well as ethnographic information, this presentation will demonstrate that residential limestone quarries were active settings where individuals produced construction materials at the household level. This paper will contribute to our understanding of ancient Maya production activities and the implementation of Indigenous knowledge at domestic settings.

Rosales Tham, Teresa Esperanza [182] see Mader, Christian

Roscoe, Paul (University of Maine)**[113]** *Leadership and Violence in the Small-Scale Societies of New Guinea*

The degree to which leaders of egalitarian and trans-egalitarian societies deployed violence to achieve and maintain their position has long been a matter of anthropological and archaeological discussion. I investigate this issue using a database of political information drawn from 148 New Guinea societies ranging from hunter-gatherers through Great-Men and Big-Men cultivators to petty-chieftdom fisher-folk. I find that, in

general, would-be New Guinea leaders sought to acquire and wield their need for influence to an aura of prestige. To lead, they commonly had to exert pressure on others, an exercise with the obvious potential to provoke resistance. To forestall resistance, therefore, they simultaneously sought to garner prestige by providing abundant prosocial benefits to their community. In most New Guinea societies, in other words, leaders did not resort to violence, whether advancing their own agendas or those of their communities. But some did. Some of these more violent leaders may simply have been incompetent, failing to recognize where they should draw the line. Other cases, however, point to how violence might emerge from a context of consensus leadership to become a more conventional instrument for acquiring and maintaining power.

Rose, Charles (University of Nebraska)

[224] *Identifying Vulnerable Archaeological Sites and Landforms in the Upper Missouri River Watershed*

In the summer of 2024 flooding of the Upper Missouri caused catastrophic damage across the region, blowing out bridges and culverts and altering stream banks along many of the streams that feed into the Missouri River and the Missouri River itself. This poster presents research that models the flood and erosional risk to archaeological sites in the Upper Missouri Watershed as derived from recent climate data (FEMA and NOAA), existing climate models, and known affected sites. Additionally, using existing predictive models of site potential I identify landforms with high site potential that are at similar risk of flood and erosion. Local dam impoundments and their effects on archaeological sites as they are raised and drawn down are also examined. The significance of this work lies in its ability to identify at-risk archaeological deposits and, in turn, allowing for efforts to prioritize either protection against flood damage or investigation for research potential while they are still intact.

Rose, Katherine (Institute for Field Research)

[229] *Cities in the Shadow of the God Amun: New Lidar Data from Jebel Barkal*

This paper explores urbanism in Northern Sudan through remote sensing methods. The site of Jebel Barkal is located 400 km from Khartoum, near the Nile. The site served as the royal capital of Kush from the eighth century BCE and remained a major urban and religious center throughout the Meroitic period. Since 2018 the Jebel Barkal Archaeological Project, in collaboration with the National Corporation for Antiquities and Museums of Sudan, has been excavating and surveying areas of the East Mound where a dense settlement was identified. We present the preliminary results of new lidar and thermal imagery data. The lidar and the thermal imagery extend beyond the East Mound into the modern dense and lush agricultural fields. The data allows us to more accurately map the settlement's spatial extent and situate it within its broader landscape context. We also identify additional features such as architecture, activity areas, and paleochannels. This work contributes to our understanding of how major Kushite cities grow, evolve, and respond to environmental factors throughout their life histories. Lastly, this paper ruminates on the impact of archaeological inquiry in Sudan, which is currently experiencing a civil war after years of political unrest, while centering Sudanese voices.

Rose, Nicole (Northern Arizona University), and Alexander Bauer (Queens College)

[223] *Technological Landscapes on the Sinop Promontory: Production and Circulation of Ceramic Objects in the Precolonial Era*

A maritime hub in the Greek colonial period, the Sinop promontory of Black Sea Turkey served as a center for the movement of goods and peoples since at least the Bronze Age. Previous work has established Sinop as one locale out of many in a Black Sea world constructed by seasonal fishers and spheres of trade and exchange alike. This poster revisits ceramic materials collected by the Sinop Regional Archaeological Project during extensive surveys of the Sinop region in the 1997–1999 field seasons. Employing handheld XRF, this research uses ceramic geochemical composition to reconstruct the technological landscape of the Sinop promontory in the Bronze and Early Iron Age in order to interrogate the relationship between the Sinop coast and its hinterland prior to Greek colonization of the region.

Rosen, Arlene (University of Texas, Austin), Emily Reed, Erika Blecha (University of Kansas), Rolfe Mandel (Kansas Geological Survey), and Bryon Schroeder (Center for Big Bend Studies, Sul Ross State University)

[337] *Dryland Foraging and Resilience in the Archaic Period at San Esteban Rockshelter, SW Texas: Phytolith Perspectives*

Recent excavations at San Esteban Rockshelter in the Chihuahuan Desert of southwest Texas have revealed a long history of occupation beginning early in the Paleoindigenous period through Early and Late Archaic periods. This deep-time sequence offers the possibility of tracking human plant foraging practices from the Late Pleistocene through the Holocene, a timeframe that was characterized by dramatic changes in climate from a cool/moist Younger Dryas and early Holocene to a hot/dry mid-Holocene Altithermal, and then a return to cooler-moister conditions in the late Holocene. The rich phytolith record at the site has yielded evidence for plant use that demonstrates the resilience of pre-agricultural populations in this region throughout these episodes of environmental change. Phytolith evidence shows extensive use of wetland, woodland, and grassland resources, as well as exploitation of wild millets, indicating a complex pattern of foraging and long-term traditions in ecological knowledge.

Rosencrance, Richie (University of Nevada, Reno)

[382] *Younger Dryas Cold Adaptation in the Northern Great Basin and Southern Columbia Plateau of North America*

Cold mitigation through technological, social, and settlement strategies is one of humanity's defining evolutionary benchmarks. Even with fire and shelter, humans are unable to sustainably live in environments where temperatures fall below 0°C. The innovation of structurally and functionally complex technologies such as multilayered insulated clothing, snares and deadfalls, and projectile weaponry allowed our ancestors to withstand bitter cold and procure adequate food in places with low biodiversity. The First Peoples of the Americas undoubtedly used cold adaptive strategies, yet details from the Pleistocene archaeological record are rare with previous discourse being focused on select regions. In this paper I use expectations derived from archaeological and ethnographic data to evaluate new and existing archaeological evidence for cold adaptive strategies during the Younger Dryas in the Northern Great Basin and Southern Columbia Plateau of North America. Findings show the collective archaeological evidence as one of the most detailed and robust datasets in the world of this antiquity. Ultimately, these data highlight the area as a key laboratory for understanding the complex intersection of social organization, technology, and climate in the settlement of North America, humanity's adaptations to cold.

Rosenfeld, Silvana (High Point University, NC)

[182] *Between Domestic Trash and Intentional Deposits at La Banda, Chavín de Huántar, Peru*

In this paper, I will present some of the zooarchaeological material recovered in the last two seasons of excavations at La Banda sector in Chavín de Huántar. La Banda appears to have different areas, including a workshop, multipurpose rooms, and a recently discovered large-stone long platform. Bone tools, decorated bone ornaments, and at least one exotic skull were found among the material that was recovered associated with the platform walls. What is the nature of these deposits? Comparison with other deposits excavated in La Banda and in the main monumental area of Chavín should shed light on the composition, variation, and reasons of these deposits.

Rosenswig, Robert (University at Albany SUNY)

[387] *The Belize Archaic Project: New Survey and Excavation Results*

The 8,000 years before ceramic first appear is the longest epoch in the human occupation of Mesoamerica when domestication and sedentary life changed how the inhabitants of the region lived. Yet, despite the importance of changing adaptation, Mesoamerica's Archaic period is known from only a handful of sites, and most of these are caves and rockshelters. Beginning 25 years ago, the Belize Archaic Project has documented numerous open-air sites from the Late Archaic period (6000–3000 BP) along the Freshwater Creek drainage in the tropical lowlands of northern Belize. Since 2019, a systematic survey has recorded over 200 Archaic period sites and excavations have now been carried out at 20 of these sites. Substantial lithic assemblages, pit features, and prepared cobble surfaces provide direct evidence of occupation from this area of lowland Mesoamerica. This paper reviews new archaeological findings and introduces subsequent papers that present lithic, dating, and paleo-environmental analysis generated by the Belize Archaic Project.

Rosenswig, Robert [387] see George, Richard

Rosenswig, Robert [387] see Hillman, Aubrey
 Rosenswig, Robert [387] see Walsh, Megan

Rosenthal, Jeff [207] see Eubanks, Jill

Rosinko, Isabella

[87] *A Preliminary Analysis of Faunal Remains at the Shepard Site (34CU220): An Ancestral Wichita Middle Plains Village Site in Western Oklahoma*

The Shepard site (34CU220) is located along a tributary of the Washita River in western Oklahoma. In 2001 construction of an oil well pad triggered a salvage excavation of the site. Based on radiocarbon dating, the assemblage represents ancestral Wichita material associated with the Middle Plains Village, Turkey Creek phase (AD 1250–1450). Previous research on the botanical remains at the site was done by Richard Drass; however, other materials have gone unanalyzed. This poster presents the preliminary results of an analysis of the 34CU220 faunal assemblage, focusing on bison remains. The Middle Plains Village period marks a re-intensification of bison hunting and dependency on bison for subsistence. This analysis of the 34CU220 bison has important implications for understanding interactions between Ancestral Wichita people and bison as well as how those interactions were shaped and upheld by subsistence activities.

Rospopo, Steven (New Mexico Highlands University), and Linda Wheelbarger (Totah Archeological Project, San Juan College)

[326] *An Applied Ceramic Typology and Architectural Analysis that Refines the Occupation Sequence of the LA 8619 Point Great House Community in San Juan County, New Mexico*

Ancestral Puebloan researchers in the US Southwest have considered the Middle San Juan Region transitional to the Chaco-Cibola cultural tradition to the south and the Northern San Juan-Mesa Verde traditions to the north. Analyses of 24 years of ceramic artifacts from Middle San Juan River basin sites suggests that the region should be considered to be an independent cultural tradition within the Ancestral Puebloan sphere of influence. The Middle San Juan Basin exhibits a series of center places and associated satellite sites with dynamic web of interregional and intraregional trade and exchange webs from AD 750 to 1300. The occupation sequence of the LA8619 Point Great House Community has been inferred from correlation studies between ceramic typology and site architecture supplemented by limited dendrochronology evidence. The frequency and distribution of well-defined ceramic temporal traditions, further refined by the use of the mean ceramic date tool, suggests that there were three distinct occupation periods at LA8619 that correspond to previous migration models. Starting with initial population aggregation in the eighth century, ceramic typology evidence suggests that Middle San Juan communities functioned as local adaptation centers for selected regional traditions within an underlying San Juan River Basin tradition ceramic style.

Ross, Jamie (Texas Historical Commission)

[275] *Cui Bono: Working toward More Reciprocal Community and Volunteer Relationships in Archeological Collections Work*

In 2022, staff in the Texas Historical Commission Historic Sites division received funding through an Institute of Museum and Library Services (IMLS) Save America's Treasures grant to develop a Community Curation program. This program is intended to enable the rehabilitation of legacy archaeological collections through the creation of an outreach program focusing on training students, source communities, and volunteers in archaeological collections processing methods. Work has begun to develop a curriculum and training series for volunteers intended minimize issues with long-term storage of collected artifacts and documentation. This ongoing project will work to establish a cohort of archaeological collections volunteers who will raise the standard of current legacy archaeological collections and work toward making these collections more organized, better identified, and more accessible. This paper examines the motivation, plans, and process for the Community Curation program, as well as address what has become one of our most challenging concerns—how do we make this program as beneficial to the participants as it is to us.

Rossen, Jack (Chronicle Heritage), David Pollack (Kentucky Archaeological Survey), and A. Gwynn Henderson (Kentucky Archaeological Survey)

[337] *New Archaeobotany from the Augusta Site, Kentucky, Expands Our Understanding of Fort Ancient Plant Use and Its Role in Mortuary Ritual*

Fort Ancient plant use from ca 1000 to 1750 CE is well understood from numerous sites in the middle Ohio River Valley of Kentucky, Ohio, and Indiana. The Fort Ancient people living on the fringes of Mississippi chiefdoms grew eight-row corn and *Phaseolus* beans, while deemphasizing nuts and native starchy-oily seeded native cultigens. This plant-use system represents part of an identity that was distinctive from their Mississippian neighbors. Plant remains recently recovered from the Augusta site (Bracken County, Kentucky) diverge from the well-known Fort Ancient plant use profile. At Augusta, an unusual wood charcoal collection is dominated by American elm. The unexpected presence of Midwestern 12 corn, trace amounts of native cultigens, a high ubiquity of *Phaseolus* beans, an unusually wide range of fleshy fruits, and the appearance of pecan are all consistent with mortuary feasting, where visitors brought, prepared, consumed, and disposed of the remnants of out-of-ordinary foods at a ritual setting. This paper describes and discusses this new archaeobotanical development, specifically how samples from specialized activity contexts can expand our understanding of an ancient Indigenous plant use system.

Roth, Barbara [113] see Harrod, Ryan

Roth, Barbara [245] see Jones, Kara

Rothhammer, Francisco [182] see Capriles, José

Rougier, Hélène [36] see Darlington, Emily

Rouse, Lynne M. [80] see Ho, Joyce Wing In

Roussel, Morgan [229] see Dusseldorp, Gerrit

Roussel, Morgan [384] see Porter, Samantha

Rowe, Robert (KLJ Engineering)

[302] *The Blue Scorpion Rides Again: The Turquoise Mines of Xvshuuk Mniish*

Thirty-five years ago, the turquoise mines of the Xvshuuk Mniish (Blue Scorpion) site in southern Arizona were recorded for the first time. This Hohokam turquoise mining and processing site was operated for approximately 300 years before being abruptly abandoned. After 35 years we return for a fresh look at the site to reexamine the spatial layout of the site, artifacts, beacon fires and trails, and the postulated routes that the turquoise was traded along. This presentation will also focus on procurement techniques associated with turquoise mining at the site including how the material was mined, what effort was expended to extract the raw blue stone, and the processing to finished trade product. Comparisons with other turquoise mines in the American Southwest and Mexican Northwest including those of the Ancestral Puebloans, Mimbres, Western Patayan, and their trading partners, the Chalchihuites.

Rowe, Sarah [297] see Duke, Guy

Rowe, Sarah [243] see Skowronek, Russell

Rubin de Rubin, Julio Cezar [199] see Silva, Rosicler

Rubin de Rubin, Julio Cezar [165] see Viana, Sibeli Aparecida

Rucinski, Hannah [268] see Pfannkuche, Sara

Rudnicka, Emanuela (University of Warsaw)

[119] *Basketry for the Dead: The Technology of Wari Cane Boxes*

Although Peruvian basketry remains unexplored, recent investigations at Castillo de Huarmey offer insights into this ancient craft. Dating back to the Middle Horizon (AD 600–1000), the site served as a multifaceted

locus, encompassing administrative, religious, and funerary functions for Wari culture. In 2012, the site yielded the burials of numerous aristocrats, accompanied by over 1,200 artifacts. In 2022, further excavation revealed the tombs of artisans affiliated with the imperial court. The baskets found in the graves were lined with textiles, and decorated with camelid wool yarns. Their content, primarily associated with textile production and ceremonial practices, also encompassed personal effects, including bronze implements, wooden utensils, rattles and *Spondylus* shells. This paper aims to present the preliminary results of research focused on reconstructing the chaîne opératoire of Wari cane boxes. Traceological studies involving stone and metal tools, microscopic examinations, and analyses such as HPLC-MS, FTIR and Raman spectroscopy were employed to identify the raw materials used in crafting the baskets. These included cane, resin, cotton, and camelid wool dyed with flavonoids and cochineal, among others. The combination of archaeometric studies and experimental archaeology will make it possible to reconstruct archaeological artifacts and understand the gestures of ancient craftspeople in the past.

Rueda, Angela [293] see Heacock, Erika

Ruf, Kim

[291] *Stoneworking in the Southern Zone: An Initial Study of Costa Rican Petroglyphs and Their Implications for Precolumbian Human-Landscape Interaction*

Southern Costa Rica is home to several hundred petroglyphs displaying anthropomorphic, zoomorphic, and geometric motifs. While some depict concrete scenes, others seem to represent abstract images that have been difficult to interpret thus far. Various theories have sought to address the meanings behind the designs, with interpretations ranging from maps of communities to road markers, or signs of sociopolitical influence. Petroglyph stone shapes include carefully crafted barrels or seats, spheres, stone pillars, and largely unworked boulders. To date, most research on petroglyphs in Costa Rica has focused on the interpretation and classification of styles and motifs. Instead, this multiyear research project seeks to investigate the integration of petroglyph stones within the wider precolumbian archaeological landscape and explore the role of large-scale stoneworking in both a Costa Rican and wider Central American context. In this session, I will present preliminary results from the initial field segment of this project.

Rufà, Anna [235] see Real, Cristina

Ruiz, Jesus [374] see Prieto, Gabriel

Ruiz, Joaquin [228] see Ganiyu, Abiodun

Ruiz, Judith (UNAM), Ulises Fuentes Torres (UNAM), and Yamile Lira-Lopez (Universidad Veracruzana)

[343] *Bioarqueología del cuidado en Maltrata, Veracruz, México: El caso de las enfermedades treponémicas en la infancia*

In this work, we propose to know the type of care received by a girl between 8 and 10 years of age who suffered from possible congenital syphilis in the chronic stage in the prehispanic population of the Maltrata valley. To do this, we use the postulates of the bioarchaeology of care and apply it to this case study that comes from the middle and upper Preclassic period, where the presence of *Treponema pallidum* has been diagnosed at a paleopathological level. Currently, if patients are not treated in early stages, these types of infections can cause physical impairments and even death. So, the care and attention that sick people can receive is key to ensuring their health and survival. Undertaking this task constitutes a useful reflective exercise to learn more about the behavior of solidarity in ancient human populations, related to the processes of care and attention to the sick.

*****This presentation will include images of human remains.**

Ruiz-Pérez, Javier (Texas A&M University), Julie Aleman (CEREGE), and Joseph Veldman (Texas A&M University)

[67] *A Rapid and Reproducible Protocol for Soil Macro-charcoal Analysis*

The study of charcoal fragments preserved in soils and sediments allows us to reconstruct fire histories,

enhancing our understanding of past vegetation dynamics and human-plant-fire interactions. However, most existing procedures for charcoal extraction and analysis are incompletely described and hence difficult to reproduce. To improve the standardization, replicability, and accessibility of soil charcoal analysis, we developed a detailed protocol for isolating macroscopic charcoal fragments $\geq 500 \mu\text{m}$ from soil and semiautomatically quantifying them. The extraction phase involves chemical soaking and sieving the soil to collect macro-charcoal fragments, and the analysis phase uses ImageJ software to count and measure the fragments from microscope images. Tested on 339 soil samples from tropical savannas and forests in eastern lowland Bolivia, the protocol produces clean charcoal samples, a set of microscope images, and datasets with total charcoal mass, fragments count, and morphological measurements (area, length, and width).

RuizDiaz, Julio (Cornell University), Mirtha Alfonso Monges (Museo de ITAIPU, Tierra Guaraní), Débora Soto Vera (Museo Etnográfico Doctor Andrés Barbero), Raquel Zalazar (Museo Etnográfico Doctor Andrés Barbero), and Vanessa Obando (Museo Etnográfico Doctor Andrés Barbero)

[327] *Legacy Collections and Climate Change: Challenges and Strategies at the Museo Etnográfico Doctor Andrés Barbero*

Legacy and orphaned collections are increasingly recognized as valuable resources for archaeologists and are gaining attention in scholarly discussions. These collections, often overlooked in the day-to-day practice of archaeology, hold significant cultural and historical value, particularly in institutions like the Museo Etnográfico Doctor Andrés Barbero (MEAB) in Paraguay. In 2023, a project funded by the Fondo Nacional de la Cultura y las Artes (FONDEC) was launched to reorganize and catalogue MEAB's archaeological collections, aiming to improve their accessibility and research potential. The following year, with support from the International Committee for Museums and Collections of Archaeology and History (ICMAH) and the Strategic Allocation Review Committee (SAREC) of ICOM, with the support of ICOM's National Committee in Paraguay and Fundación La Piedad, the project expanded to develop strategies for enhancing infrastructure and conservation processes, addressing the vulnerabilities posed by Paraguay's climatic conditions. Preliminary findings indicate significant progress in safeguarding the collections and emphasize the importance of community involvement, particularly through the engagement of volunteers from the Universidad Nacional de Asunción (UNA). These efforts highlight the potential for sustainable museum practices and provide a model for other institutions facing similar challenges.

Runggaldier, Astrid (University of Texas, Austin)

[52] *Reduce, Reuse, Recycle: Aquaculture and Small Finds in the Collections of Maya Archaeological Assemblages of the BREA Project in Belize*

This presentation addresses data from a region of Belize located between two areas, Programme for Belize in the northwest and Colha in northeastern Belize, where Fred Valdez has focused several decades of research. Following in Valdez's interests in ceramics and material culture studies, I focus on aspects of the "small finds" category in the laboratory assemblage of materials from the Belize River East Archaeology (BREA) Project, which beginning in 2011 has been documenting and researching the cultural and environmental history of the Belize River drainage, comprising Preceramic period land and resource use, Maya settlements and landscapes, Spanish and British colonial contexts, and the Kriol heritage of current communities. This work examines aquaculture objects that have variously been referred to as fishing net weights or net sinkers, as well as objects described in the literature as perforated disks or interpreted as spindle whorls and weft weights, within a framework of depositional theory, use-lives of objects, and ceramic reuse behavior. The analysis of processes like discard and recycling within the context of pottery making, fishing technologies, and weaving explores the links between material culture and social practice, with the goal of providing insightful queries into Maya ceramic production and economic specialization.

Rush, Elizabeth (US Bureau of Reclamation)

[95] *Setting the Tone for Resource Protection and Preservation: How Early Site Avoidance/Mitigation Can Be Used to Engage Construction Contractors in Protecting the Resource*

In the front range foothills, prehistoric stone fortification sites were originally recorded as "non-eligible ranching features." The sites co-occurred with construction associated with building Chimney Hollow

Reservoir. Upon consultation with Tribal Nations, the Southern Ute Indian Tribe visited the features and identified them from their ethnographic history as stone fortifications associated with skirmishes between the Ute and Arapaho tribes. With this new information, Bureau of Reclamation archaeologists updated the site forms, recommended the site as eligible for the National Register of Historic Places, and developed a Memorandum of Agreement to protect the site during the construction activities that were planned in the area. Development of the agreement, and the excitement of the presence of the archaeological features, set the tone for the rest of the construction activities. Construction contractors in the field took pride in being part of preserving the archaeological resources in the area, leading to multiple post-review discoveries made by the contractors. This is an example of how partnering with contractors and subcontractors can create an engaging environment in which they feel included and empowered to speak up when material culture is recovered leading to a greater understanding of the cultural history of the project area.

Russell, Bradley [104] see Serafin, Stanley

Russell, Nerissa (Cornell University)

[54] *Practices of Animal Domestication*

Animal domestication is notoriously difficult to define, and most definitions leave out human-animal relations that have some of the characteristics of animal domestication. While I still believe that it is often useful to distinguish wild and domestic animals, we can surely recognize that domestication is a process. For both these reasons, it may be useful to focus on domesticatory practices: the actions deployed to create and sustain a domestic human-animal relationship. These domesticatory practices will always need to be multiple and variable to create a durable relationship, and not all these relationships will look like domestication. That is, one way to escape some of the difficulties of definition is to focus on the process. Potential advantages of this approach include that it would help to spell out more clearly what we mean by terms such as management, herding, or domestication; it would help us think constructively about human-animal relationships that bear some resemblance to domestication but don't usually count (e.g., storks, Asian elephants, honeybees); and it should foreground care as well as control. It might facilitate collaboration with wildlife management professionals. From a multispecies perspective, we might also consider whether animals engage in domesticatory practices with humans.

Russell, Scott [375] see Dean, Jeffrey

Ruth, Alissa (Arizona State University), Michael E. Smith (Arizona State University), Kostalena Michelaki (School of Human Evolution and Social Change), Christopher Caseldine (Arizona State University), and Matthew Kroot

[346] *The Archaeology Research Laboratory: A Site for Increased Access to Student Training*

Participation in undergraduate research enhances students' likelihood of matriculating into graduate programs, fosters a scientific identity, promotes a sense of belonging, and develops valuable transferrable skills. Archaeology has a strong history of hands-on training through field schools, online and digital platforms, and coursework. While field schools are a common rite of passage, they are often costly and may exclude historically underrepresented students. Additionally, field schools primarily focus on data collection rather than training students on the full research process. The archaeology laboratory offers crucial technical and analytical skill development. Recent research indicates that laboratory experiences yield significant learning outcomes for students. However, there is limited formal guidance on managing student integration into the operation of a research lab. This paper presents best practices for leading a research laboratory from an expert panel of archaeologists, addressing resource requirements, policies, mentorship, and professional development to create inclusive and supportive laboratory environments, aiming to enhance student access to more holistic training in archaeological research.

Ruth, Susan (Central New Mexico Community College)

[57] *Staying Warm in the Pleistocene: The Organization of Hideworking*

Survival in cold climates is as much about staying warm as it is about food, perhaps even more so. Hide working was not a secondary, optional activity during the Ice Age but as necessary and indispensable as

hunting. Paleoindigenous peoples, especially the very young and the very old, were in need of warm and dry clothing, bedding, and shelter. Unfortunately, the study of fur and animal-hide products during the Ice Age has received scant attention, in part because its residues aren't always clear and in part because processing animal skins has an unglamorous reputation. My research explores two related questions: (1) Can we tell who was doing the hide-processing and sewing at the end of the last Ice Age? and (2) What do the archaeological record and historical images reveal about how hide working was organized in terms of supply of tools and the spatial location of hide processing? The results of this analysis suggest that both the makers and the organization of hide working are identifiable, which can help us see a fuller picture of Ice Age peoples.

Ruth, Susan [57] see Kilby, David

Rutherford, Allen (AR Consultants Inc.), Nathan Palmer (AR Consultants Inc.), and Cole Clawson

[314] *A Comparison of Ceramic Assemblages from Two Early to Middle Caddo Household Contexts in Northeast Texas*

Phase III data collection excavations at two sites in Fannin County, Texas, identified household contexts dating to the Early to Middle Caddo periods (AD 1000–1450). Ceramic analysis from those contexts has focused on differentiating between utilitarian and fine wares and using their ratios, in conjunction with radiocarbon dating of intact features, to assess changes in ceramic use at the household level over time. More broadly, this research is focused on understanding Caddo lifeways on the western margin of their occupational territory and how those lifeways are reflected in their material culture and settlement patterning. Topics covered in the presentation will include a discussion of emergency mitigation excavation methods, ceramic analysis, the role of radiocarbon dating in assessing complicated and overlapping chronological contexts, and spatial analysis.

Rutkoski, Ashley (University of Florida), Nicolas Gauthier (University of Florida), Andrea Torvinen (Florida Museum, University of Florida), Lindsay Bloch (Tempered Archaeological Services, LLC), and Neill Wallis (Florida Museum of Natural History)

[114] *Enhancing Petrographic Analysis with Convolutional Neural Networks*

Archaeological research has highlighted the role of mollusks in coastal communities' foodways, construction practices, and cultural traditions, but its use within pottery production has received less attention. Key morphological and chemical signatures are altered during pottery manufacture, impeding identification of shell taxon. Increased systematic examination of fracture pattern variability among mollusks has presented a new avenue for visual identification and the application of machine-learning techniques. To increase the reliability and accuracy of this approach, we created an experimental dataset composed of various types of shell temper available to Mississippian communities living along the Northern Gulf and trained a convolutional neural network (CNN) to identify variability in mollusk fracture patterns. We review the basics steps for creating a dataset, techniques for capturing cross section images, and the process for training an image classification model. We apply this model to archaeological samples from the Pensacola region to show how training a CNN can be used to identify patterns that reflect raw material selection, environmental availability, and functional properties considered by Indigenous potters. While the focus here is on pottery identification, the methods discussed are broadly applicable to other archaeological questions, as we aim to demonstrate the advantages of using image classification models.

Rutkoski, Ashley [66] see Torvinen, Andrea

Ruvalcaba Sil, Jose Luis [378] see Bernard, Henri

Ruzain, Faris [174] see Green, Helen

Ryan, Ethan (Historical Research Associates Inc.), Jeannie Larmon, Kelly Derr (Historical Research Associates Inc.), and Kathryn Burk-Hise (Historical Research Associates Inc.)

[95] *From the Land of the Flying Shrimp: Results from a Large-Scale Cultural Resource Investigation near American Falls, Idaho*

Historical Research Associates Inc. has been conducting large-scale cultural resource investigations in support of the Bureau of Reclamation's (BOR) American Falls Resource Management Plan (RMP) Cultural Resources Update Project near American Falls, Idaho. This project includes cultural resource inventory of approximately 8,100 acres of private, Idaho Department of Fish and Wildlife, Bureau of Land Management, and Reclamation land in Power and Bingham Counties, Idaho. The inventories are tied to the development of an updated RMP and will be used to make recommendations in the RMP for potential future undertakings. The primary focus is on an inventory of cultural resources within the non-inundated portions of the larger RMP Area of Potential Effects. This project also includes updating approximately 375 previously recorded archaeological, historic period, or architectural resources in addition to the survey. The results of this fieldwork highlight challenges of managing the vast number of cultural resources across a broad area, both individually and at a landscape scale, as well as challenges in the field (access, quicksand, snakes, and flying "shrimp"). This presentation will provide an overview of the inventory results, identifying important trends and data concerning archaeological and architectural resources from periods spanning the last 12,000 years.

Ryan, Ethan [129] see Hampton, Ashley

Ryan, Susan (Crow Canyon Archaeological Center), Grant Coffey (Crow Canyon Archaeological Center), and Katharine Williams (University of New Mexico)

[55] *To Be or Not to Be? Ground Truthing Lidar-Identified Agricultural Features at a Large Ancestral Community Center in the Northern US Southwest*

The Hampton Pueblo is an ancestral site located in modern-day southwest Colorado and dating to the Pueblo I through Pueblo III periods (AD 750–1300). With over 100 kivas, 600 surface rooms, one great kiva, and a road, this village is one of the largest and longest occupied in the central Mesa Verde region. Located near a large seep spring, deep Aeolian soils, and situated at the head of a drainage, this community center was home to hundreds, if not thousands, of people for many generations. Newly published USGS lidar imagery has allowed for the identification of dozens of linear rows of potential agricultural features located immediately northwest of mapped masonry architecture. This presentation summarizes fieldwork initiated in the fall of 2024 to "ground truth" these potential features and efforts to identify and confirm ancient locations of agricultural fields through geomorphological, macrobotanical, phytolith, and pollen analyses.

Rybin, Evgeny [332] see Khatsenovich, Arina

Rybka, Ryan

[268] *Pipeline Walkers: Excavating into Pipeline Surveillance along the Line 3 Pipeline in Northern Minnesota*

Resistance to the construction of crude oil pipelines on Indigenous sovereign lands has become recognized locally and globally as a decolonial practice that also addresses the realities of climate change. Braided together closely with Indigenous-led resistance movements to petroleum infrastructure are the many communities, stakeholders, and accompanying surveilling technologies—drones, planes, helicopters, and omnipresent law enforcement—that are collectively used to maintain the status quo of oil infrastructure. Over the past century and a half, oil pipelines have been surveyed, monitored, and surveilled due to a variety of risks—actual and perceived—including the threat of pipeline destruction, the loss of lucrative product, the implications for environmental contamination, and the local and global implications of decolonization. Over time, each new surveilling technological iteration highlights relationships among local communities and buried pipelines that otherwise go unseen. In this paper, I investigate the Line 3 Enbridge pipeline in northern Minnesota and demonstrate the importance of examining the hidden material histories of surveillance as an archaeological method of pipeline excavation. Through archival, photographic, and social network analysis, this paper explores material pipeline surveillance technologies over time and how their uses have transitioned from protecting pipelines against communities to being a method of decolonization.

Ryden, Ronald [324] see Chenault, Mark

Ryker, Hannah [189] see Nolan, Kevin

Saad, Sarah [277] see Reynolds, Robert

Sabo, Allison, William Pestle, Francisco Gallardo (Pontificia Universidad Católica de Chile), Richard Ivan Daza Riquelme (Secretaria Técnica del Consejo de Monumentos Nacionales, OTR Atacama), and Gloria Cabello (Pontificia Universidad Católica de Chile)

[199] *Exploring Remote Sensing for Lithic Source Geolocation in the Southern Atacama Desert, Chile*

Starkly juxtaposed resource distribution presented a notable challenge to the prehistoric inhabitants of the southern Atacama Desert. While the Pacific coast yielded a reliable abundance of food resources and materials (shell, bone, animal hide) for subsistence and certain types of manufacture, other raw materials had to be sought from discrete locales within the vast expanse of the inhospitable inner desert. In the case of high-quality lithic raw material, suitable sources could lay dozens, if not hundreds, of kilometers from coastal settlements, obliging long-distance travel for procurement and/or involvement in systems of exchange. The present work details preliminary attempts to apply satellite-based remote sensing techniques, developed and applied by Borie and colleagues in other regions of the Atacama to a study region at the southern end of the world's driest desert. Our hope was that the use of multispectral Landsat imagery would reveal the locations of sources of high quality silicious raw material in our study area. While successful in some regard, due to differences in regional geology and the inability of the remote sensing approach employed to differentiate between minerals/rocks with similar spectral characteristics, the results obtained were contingent, obliging further refinement to the techniques employed.

Sabo, Allison [233] see Pestle, William

Sabourin, Faith (University of Texas, Austin), and Robyn Dodge (Hicks & Company)

[228] *Social Dynamics and Class Distinction in the Context of Ancient Maya Marketplaces*

This poster focuses on the ancient Maya hinterland settlement Hun Tun, located in northwestern Belize. Hun Tun was occupied during the Late to Terminal Classic (CE 600–850). It functioned as a resource-specialized community and was integrated into a regional marketplace network. Data was collected at Hun Tun during the 2023 field season, in fulfillment of a collaborative NSF marketplace grant, including soil samples, trench excavations of potential market plaza surfaces, excavation of monuments, ceramic analysis, and identification of modern tree species. Chronology for the marketplace study was restricted to the Late Classic period (CE 600–850). This data aids interpretation of the Late Classical Maya economy within the Three Rivers region of northwestern Belize, in using a regional model of a pre-capitalist, non-Western economy. Internal social stratification, landscape modification by way of agricultural terraces, water management features, and trade and exchange were all observed at Hun Tun. In total, including Hun Tun, data from 12 ancient Maya sites collaborated to investigate an integrated market system in the Three Rivers Region of northwestern Belize. This research aims to contextualize Hun Tun and other Late Classic settlements among a profound network of resource-specialized communities.

Saccone, Elena [185] see Blasco, Jimena

Sain, Douglas, Brad Lanning (Chronicle Heritage), and Emily Ford (Chronicle Heritage)

[68] *Burial Recovery Excavations at the Vicksburg National Military Park (VICK) in Vicksburg, Mississippi*

Chronicle Heritage has recently completed burial recovery excavations at the Vicksburg National Military Park (VICK) in Vicksburg, Mississippi. This undertaking was in response to a landslide event in February 2020 and continued erosional activity. The initial landslide caused the collapse of a portion of the cemetery's Section T, burying a portion of Section J. An emergency assessment of the site by SEAC archaeologists in May 2020 was conducted to document the extent of the landslide and remove displaced burials. Our investigations focused on the recovery of graves within Section T that were in immediate danger from erosion and the graves within Section J covered by the landslide. This poster presents the results of burial

recovery excavations at the VICK. The efforts of this project facilitate the preservation of significant cultural heritage through the recovery and reconstruction of disturbed burials and allow for future reinterment of these remains as discrete individuals. The results offer important information about the individuals buried in this portion of the cemetery and the history of interment at the VICK. Moreover, the results provide valuable insight into past lives and life experiences and conserve a record of these individuals for later generations.

Saitta, Dean (University of Denver)

[342] *A Marxist Archaeologist*

Interpretive frameworks in archaeology over the last four decades have significantly benefited from engagements with Marxian theory. One of the chief proponents of these engagements, obviously, has been Randall McGuire. Given his prolific and widely respected scholarship about a great range of theoretical, methodological, and empirical issues McGuire is one of just a small handful of American scholars who could have written *A Marxist Archaeology* and have its fundamental messages stick. This presentation acknowledges the debt of gratitude owed to a passionate, dedicated scholar who significantly influenced the work of peers, junior colleagues, and students over the last 40 years. Through his original work and inspiration of others McGuire made archaeology a much more interesting, and much better, practice.

Sakaguchi, Takashi, and Yoshiyuki Iizuka (Academia Sinica)

[284] *Noninvasive Chemical Investigation of Stone Ornaments from the Kashiwagi-B Site in the Late Jomon of Central Hokkaido Utilizing Portable X-Ray Fluorescence Spectroscopy*

The goal of this paper is to better understand variability in raw materials of stone ornaments recovered from burials at the Kashiwagi-B site, which consists of *shuteibo* (a type of communal cemetery characterized by a circular embankment constructed in the latter half of the Late Jomon of central Hokkaido) and non-*shuteibo* burials. Utilizing p-XRF, this research conducted noninvasive chemical analyses of 77 samples from nine *shuteibo* and non-*shuteibo* burials. The analyses identified that raw materials for beads from *shuteibo* burials were jadeite and Omphacite jades except for the unidentified materials due to weathering, while materials from non-*shuteibo* burials were talcs, chlorites, and nephrites. In terms of human aesthetics, rarity, and durability, jade beads were probably desirable and highly valued materials as compared to those of chlorites and talcs. Some *shuteibo* burials also contained large prestigious slate stone clubs as regalia probably imported from the Tohoku regions via long-distance trades. The different assemblage in stone raw material for ornaments between the burials at Kashiwagi-B indicates possible intra-site material wealth-based socioeconomic differentiation; the individuals buried in *shuteibo* burials may have been from elites, while non-*shuteibo* burials may reflect relatively lower status.

Sakai, Masato (Yamagata University), Juan Pablo Villanueva Hidalgo, and Yuji Seki (National Museum of Ethnology)

[282] *Generating the Architectural Landscape at the Capilla and Pacopampa: From the Pandanche Phase to the Pacopampa Phase*

This presentation will focus on the architectural landscape of the Capilla Mound and the Pacopampa Temple, which are part of the Pacopampa archaeological complex. Excavations at the Capilla have revealed elite tombs and stone structures from the Pandanche and Pacopampa I phases. The axes of the stone structures in both phases were oriented at approximately 256° azimuth, corresponding to the summit of Cerro Cotorá. This landscape was maintained from the Pandanche phase to the Pacopampa I phase. During the Pacopampa IA phase when the axis of the Pacopampa Temple is oriented toward the rising direction of the Pleiades, the Capilla and the Pacopampa Temple faced different directions. As a result of secular changes in the Pleiades, the axis of the Pacopampa Temple no longer coincided with the rising direction of the Pleiades during the Pacopampa IB phase. Therefore, the Pacopampa Temple adopted the architectural axis of the Capilla, and the Capilla and the Pacopampa Temple were integrated into a single architectural complex. This adoption suggests that the Capilla and the Pacopampa Temple were part of a unified large archaeological complex during Pacopampa IB, forming a new landscape. This change highlights the dynamic architectural development of the Pacopampa IB phase.

Sakai, Sachiko (California State University, Long Beach), Steven Wong (California State University, Long Beach), Greg Vasquez, and Hayley Sartor (California State University, Long Beach)

[223] *Examination of Multigeneration Use of the Rooms in the “Zip Code Site,” a Large Virgin Branch Puebloan Site at the Mt. Trumbull Area in the Arizona Strip*

The objective of this study is to better understand the settlement patterns of the Virgin Branch Puebloans, small-scale farmers who inhabited the marginal environment of the Mt. Trumbull area in the Arizona Strip. The Zip Code site (131BLM) is a large site with multiple pueblo structures, extending at least 200 m in length. From 2018 to 2023, several rooms were excavated to better understand the history of the site's use. The previous analyses of optically stimulated luminescence (OSL) dating of sherds from these rooms supported the hypothesis that this large site is the result of long-term occupation and not all of the structures and rooms were used simultaneously. The 2024 excavation revealed that some rooms had been occupied by multiple generations, as evidenced by multilevel floors. This poster presents a summary of the excavation of these multilevel floors, including three-dimensional models of the structures, shifts in artifact types, and chemical compositional analyses of the soil from different depths using pXRF, in conjunction with OSL dating, to explore the history of the site's occupation.

Sala, Nohemi [384] see Alcaraz-Castaño, Manuel

Salazar, Daniel [383] see Morales-Aguilar, Carlos

Salazar, Julian [171] see Vazquez Fiorani, Agustina

Salazar Chávez, Víctor Emmanuel [296] see Blomster, Jeffrey

Saldana, Melanie (California State University, Los Angeles), Michele Bleuze (California State University, Los Angeles), and James Brady (California State University, Los Angeles)

[104] *Mesoamerican Subterranean Bioarchaeology: A Preliminary Foray into Defining Its Scope and Theoretical Posture*

The need for a subterranean bioarchaeology emerged in the 1990s in the midst of the great expansion of archaeological investigation of the subterranean. This revealed the inadequacies of previous analyses and conceptualizations of human remains in subterranean space. It was standard practice to refer to any human bones encountered as burials, reflecting an implicit assumption that all human remains were derived from funerary activity. Early on it was recognized that the overwhelming majority of reports of human remains from caves referred to bones deposited on the surface (Brady 1989:343–344). Thus, caves produce an abundance of “burials” that were never buried. This is problematic. The weaknesses in the funerary assumption are exemplified in J. Eric Thompson's (1959, 1975) groundbreaking syntheses of Maya cave use that, while arguing for a ritual function, never considers the possibility of human sacrifice as being part of these rituals. A subterranean bioarchaeology is rooted in the fact that subterranean features across Mesoamerica served as ritual spaces that carried strong ideological significance. Therefore, the theoretical underpinnings of a subterranean bioarchaeological analysis must be informed by a framework drawn from cultural landscapes, religion, and cosmology, an approach not typically employed in bioarchaeology. *****This presentation will include images of human remains.**

Saldana, Melanie [104] see Fricano, Ellen

Saleh, Andrew [122] see Kirk, Scott

Saleh, Andrew [268] see Thornton, Megan

Salgado, Sandra [89] see Lopez Varela, Sandra

Salgado, Silvia [378] see Menager, Matthieu

Sallum, Marianne (Federal University of São Paulo, Brazil; University of Lisbon, Portugal), Daniela Balanzategui (University of Massachusetts, Boston), Francisco Noelli, Khaterine Chala, and Catarina Nimbopyruá Delfina dos Santos

[315] *Archaeology and Networks of Solidarity in Brazil and Ecuador: Women, Human Rights, and Sovereignty*

This paper will reflect on the interactions and networks of solidarity among Indigenous, Afro-descendant women and beyond to capture the dynamics of collaboration in the face of different forms of violence worldwide. Social movements have demonstrated the determination of women to preserve their knowledge, resisting ongoing oppressions aimed at disrupting their existence, much like their ancestors who defended their humanity. Recently, new and diverse solidarity networks have emerged to reestablish alliances that were disrupted by capitalism and colonialism, promoting struggles for self-determination and the decolonization of minds and bodies. This paper highlights the persistence of Afro-Ecuadorian women from the Chota Valley (Ecuador) and Indigenous women from the coast of São Paulo (Brazil).

Salomon Velasco, Lua

[63] *Unveiling the Colors of Jama Coaque: A Chromatic Analysis of the Jama Valley (Methodological Proposal)*

This project involves a methodological proposal for analyzing the color palette of the Jama Valley, using ceramic materials discovered in this region as the primary source. For the preliminary results based on the methodological purpose, the analysis initially focuses on the Jama-Coaque culture, with plans to expand the research to materials from other cultural affiliations in the same area. The anticipated results not only contribute to academic knowledge about the Jama-Coaque culture and other local cultures but also serve as a foundation for future interdisciplinary research in archaeology, chemistry, and cultural anthropology. This approach employs X-ray fluorescence (XRF) analysis to determine the chemical and mineralogical composition of the pigments used in the ceramics. Despite previous studies in the region, none have used ceramic materials from specific archaeological contexts. This project is unique in its approach by analyzing the color palette from a contextualized perspective, which is crucial for understanding not only the stylistic and technical aspects of the ceramics but also their cultural and social significance in the context of the Jama Valley.

Salomon Velasco, Lua [321] see Anzellini, Armando

Samson, Alice (University of Leicester), Jago Cooper, and Roberto Valcárcel Rojas (Instituto Tecnológico de Santo Domingo [INTEC])

[371] *Whose Worlds Anyway? Multispecies and Non-anthropocentric Approaches to Caribbean Histories*

Drawn on a wall between two crosses, this is how an Indigenous *zemi* (object-person) appears in a cave shrine. In a midden surrounded by fish bones and thimbles, this is how a pig's head ended up in an encomienda household. Wrapped in hammocks against the insects, this is how laborers, enslaved people, and colonizers slept at night in goldmines across the islands. Food, bodies, and beliefs were locations of ontological bridging and difference in the violent and unequal world of the sixteenth-century Caribbean. In this paper we take a multispecies and non-anthropocentric approach to explore how diverse communities, including colonizing animals such as pigs, object-persons, and materials, created a radically new postcolumbian world.

Samson, Alice [371] see Valcárcel Rojas, Roberto

San Juan, Giuseppe [56] see Flores-Fernandez, Carola

San Roman, Manuel [301] see Martin, Fabiana María

San Roman, Manuel [191] see Morello Repetto, Flavia

Sanandres, Sayury [182] see Roman Vargas, José

Sanchez-Borjas, Angel (Pontificia Universidad Católica del Perú), Christian Mesia-Montenegro (Universidad Privada del Norte), and Jose Narvaez

[334] *Use of the Landscape as a Route Marker and Symbolism Associated with the Geoglyphs of the Middle Casma River Valley, Peru*

Recent investigations in the middle Casma River valley have uncovered a series of geoglyphs used as guides and markers within a desert landscape crisscrossed by pathways. This landscape likely hosted fertility-related rituals by valley populations. Unfortunately, this valuable cultural heritage is under threat from expanding agriculture and illegal mining. With the discovery of over 200 geoglyphs, this area ranks among the largest concentrations of geoglyphs after Nasca and Palpa. These geoglyphs have been identified through satellite imagery and aerial drone mapping. One significant geoglyph is a serpent-shaped figure created using both positive (clearing) and negative (addition) techniques. This geoglyph connects the Formative site of Pampa de las Llamas to a large rock at the base of a nearby ravine. Another notable discovery is a Moche-style erotic vessel, found near a path leading to a geoglyph field. This vessel offers one of the earliest examples linking geoglyphs with fertility rituals on the Peruvian coast, emphasizing that much remains to be investigated in the arid areas surrounding key archaeological sites.

Sanchez-Borjas, Angel [195] see Mesia-Montenegro, Christian

Sanchez Miranda, Guadalupe [189] see Krug, Andrew

Sanchez Miranda, Guadalupe [300] see Pailes, Matthew

Sánchez-Morales, Ismael (Arizona Museum of Natural History)

[175] *“Unpacking” Ancient Behaviors: Variability of Forager Land Use during the Moroccan Middle Stone Age*

Steve Kuhn’s contributions to the study of hunter-gatherer lithic technologies are far-reaching and include innovative analytical methods and theoretical approaches to understanding early human economic behaviors. Steve’s methods and theories have greatly influenced the interpretations of data from diverse regions and time periods. The Middle Stone Age (MSA) of Morocco is one example. Here, I present some of the most significant results of comparative analyses of selected MSA lithic assemblages from four Moroccan cave sites located in both coastal and inland settings. Results indicate a degree of variability in land-use behaviors between coastal and inland sites. This is reflected in differences in the prevalence of retouched artifacts, abundance of potentially specialized implements, rates of artifact reduction, and lithic raw material provisioning patterns. These data point to a general pattern of repeated, brief, and, at least in one site, specialized logistical occupations in the Moroccan littoral, whereas inland cave sites reflect relatively prolonged visits during which more varied tasks were conducted revealing diversity in behavioral adaptations associated with site setting. This research is largely grounded in the methods developed by Steve Kuhn and attests to the global legacy of his career.

Sánchez-Morales, Ismael [281] see Kuhn, Steven

Sánchez-Morales, Lara (New York University)

[233] *Using Alluvial Sequences to Detangle Climate Change and Social Processes in the Caribbean: An Example from Borikén (Puerto Rico)*

Alluvial sequences have proven to be useful archives retaining proxy information about past climate and environmental changes associated with episodes of human habitation in different contexts. In the insular Caribbean, proxy evidence from sedimentary records such as these have provided a window into understanding the timing and processes of human arrival and early niche construction in the archipelago. In this paper, I present new data that clarifies how lowland river valleys in north-central Borikén (Puerto Rico) responded to climate change from the Mid to Late Holocene (ca. 6400 cal BP). This new sedimentary record is based on floodplain sequences containing a series of paleosols chronologically associated with the first arrival of Archaic groups to the island. These ancient surfaces span the entire Archaic cultural period. Thus, this sedimentary archive allows a further understanding of the climate and environmental processes that contextualized initial landscape domestication and settlement in Borikén.

Sánchez Ramírez, Patricia [83] see Juárez, Isis

Sanchez-Romero, Laura

[279] *Spatial Analysis of Original Excavation Data: The Middle Pleistocene Localities of Ambrona and Torralba (Spain)*

The classic Middle Pleistocene localities of Ambrona and Torralba have been the center of multiple debates about Pleistocene behaviors, environments, and evolution. These two occurrences yielded numerous elephant bones and lithic artifacts, leading to its first interpretation as an elephant kill site, and provoking subsequent studies and debates about that interpretation. Torralba and Ambrona were first excavated at the beginning of the twentieth-century by the Marqués de Cerralbo. After Cerralbo, these localities were excavated by a multidisciplinary team led by the American paleoanthropologist F. Clark Howell between the 1960s and 1980s. This work generated a large body of documentation, including maps, photographs, catalogues, drawings, and notes. The interpretation of these localities was based on (1) that both localities were considered “twins” and (2) hominids were seen as the main agents of accumulation and modification of bones. Recent years of research have demonstrated that these localities are not “twins” and, thanks to the work with stratigraphic sections and georeferenced and digitalized distribution maps of bones and stones, the formation and accumulation processes of stones and bones have been unveiled.

Sanchis, Alfred [235] see Real, Cristina

Sandweiss, Dan (University of Maine), and Monica Barnes (Andean Past)

[370] *Andean Past: An Open-Access Journal for Andean Archaeology and Ethnohistory (1987 to Present)*

Andean Past is a peer-reviewed, interannual publication series on Andean archaeology and ethnohistory. Founded by Dan Sandweiss at Cornell University in the mid-1980s, 14 volumes have been published since 1987. Monica Barnes joined as co-editor for volume 3 (1992) and became the editor from volume 5; Dan serves as founding editor. Here, we discuss the founding of the journal, the focus on data, the commitment to review papers in Spanish and translate them into English (if accepted) at no cost to the author, peer-review policies, the history of the editors and the editorial board, the transition from paper copies published by Cornell to open access, no APC, digital publication through the University of Maine from volume 12 (2016), and measures of impact of the journal.

Sandweiss, Dan [123] see Hoover, Kelly

Santander, Boris [53] see De Souza, Patricio

Santeramo, Riccardo [168] see Menéndez-Blanco, Andrés

Santillán, América (El Colegio de Michoacán), and Allisong Michelle Villaquiran Mejia

[180] *Optimización metodológica en la prospección arqueológica: Desafíos y soluciones en Teuchitlán, Jalisco, ante la expansión del Paisaje Agavero*

Los trabajos arqueológicos en la región nuclear de la cultura Teuchitlán, destacada por el sitio de Los Guachimontones, han seguido una perspectiva antropológica basada en la prospección sistemática desde el siglo XX. Esta metodología ha permitido identificar más de 1,000 sitios arqueológicos y ha sido esencial para las excavaciones y mapeos sistemáticos, contribuyendo al estudio y conservación de la cultura material. Sin embargo, el cultivo masivo del agave azul en los valles adyacentes al volcán de Tequila, Jalisco, representa un desafío significativo para la arqueología de la región, ya que ha provocado la destrucción de numerosos sitios y alterado el paisaje cultural. Este problema amenaza la continuidad de investigaciones cruciales para comprender la complejidad social de las antiguas culturas de Jalisco. Ante esta situación, durante la temporada de campo de 2024, en el proyecto “Orígenes de la sociedad compleja en Jalisco,” se implementaron métodos innovadores como el uso de SIG y la estandarización de tipologías, para optimizar el registro arqueológico en un entorno amenazado. Estos esfuerzos buscan mitigar los impactos negativos del paisaje agavero en la preservación de los sitios arqueológicos y asegurar una cobertura integral del área de estudio.

Santisteban, Sintia [189] see Mullins, Patrick

Santoro, Calogero [182] see Capriles, José

Santoro, Calogero [39] see Correa Lau, Jacqueline

Santoro, Calogero [382] see Osorio, Daniela

Santoro, Calogero [53] see Ugalde, Paula

Saouma, Sara (Utah State University)

[91] *From Migration to Adaptation: A Morphological Study of Fremont Maize Cobs in the Northern Colorado Plateau*
Approximately 5,000 years ago, maize (*Zea mays*) spread from its native region in southern Mexico into the American Southwest, where it underwent significant phenotypic changes due to human selection pressures. These changes were crucial for maize to adapt to various environmental conditions, including heat, water stress, and cold climates. Despite this, there is limited information on how maize adapted after its migration into the northern periphery of the Colorado Plateau. This project presents a morphometric analysis of uncharred maize samples from seven Fremont archaeological sites in Utah, spanning various physiographic zones across the state. The analysis focuses on phenotypic variability and addresses change in maize cob attributes over time. It considers the influence of physiographic locality and environmental factors on agricultural practices in arid and semiarid conditions.

Saper, Shelby [382] see Smith, Geoffrey

Saracino, Jennifer (University of Arizona)

[172] *Glyphs as Placemaking in the Uppsala Map of Mexico-Tenochtitlan (ca. 1540)*

The Uppsala Map of Mexico-Tenochtitlan depicts the Basin of Mexico circa 1540, just decades after the Spanish invasion. Created by Nahuatl mapmakers, it presents the only early colonial representation of the city and its surrounding basin from a Nahuatl perspective amid a moment of dramatic cultural and environmental upheaval. Scholars have long characterized the map as heavily influenced by western European pictorial tradition, citing its naturalistic representation of the basin and its topography. However, this characterization minimizes the signifying capacity of Central Mexican place glyphs, of which there are almost 200, as constitutive of the Indigenous placemaking strategies that the mapmakers enacted in the creation of the map. By integrating glyphic imagery into their naturalistic representation of landscape, the mapmakers incorporated symbolic, cosmological, and cultural information tied to places and sites embedded in the collective memory of the Nahuatl mapmakers and their communities. This paper offers an analysis of the interplay between the glyphs and the composition of the map as way to explore how the Nahuatl mapmakers wielded glyphs as part of a relational discourse in which they actively forged meanings of place amid colonial transformation through intentional compositional and iconographic choices.

Sarjeant, Carmen (Archaeological Investigations Northwest), and Marly Howell

[61] *Technological Change Inside and Out: Temporal Patterns in Ceramic Earthenwares from Provincial Pre-Angkorian to Angkorian Cambodia*

Earthenware ceramics from Pre-Angkorian and Angkorian sites in Cambodia have been generally understudied in Southeast Asia. A comprehensive analysis of the earthenware assemblage from the site of Prasat Baset in Battambang province, northwest Cambodia, is underway. Characterizations of the composition of the ceramic fabrics, ceramic vessel morphology and decorative attributes demonstrate clear technological changes in earthenware production at Prasat Baset between the fifth and thirteenth centuries CE. The preliminary results of the analysis are presented and correlated with sociopolitical influences of the wider Angkorian civilization on earthenware production and consumption within provincial areas as well as the retention of local manufacturing traditions.

Sarjeant, Carmen [61] see Howell, Marly

Sarmiento Rodríguez, Juan (NGO Colombia Anfibia), Carlos Del Cairo Hurtado (Instituto Colombiano de Antropología e Historia), Laura Victoria Báez Santos (NGO Colombia Anfibia), Jesús Alberto Aldana Mendoza (NGO Colombia Anfibia), and Ana Carolina Guatame Garcia (EQUITAS)

[41] *Arqueología de un posible cementerio prehispánico en la zona intermareal en Barú, Cartagena de Indias (Colombia)*

Desde hace varios años, en la Península de Barú e Islas del Rosario, al sur de la Bahía de Cartagena de Indias (Colombia), se ha venido hablando de la existencia de un cementerio prehispánico ubicado en el borde costero de la región. Distintas prospecciones arqueológicas y aproximaciones históricas se han llevado a cabo sin obtener resultados positivos, a pesar del alto potencial del área de interés. Sin embargo, no fue hasta el año 2023 cuando en el marco de una investigación arqueológica se identificaron evidencias en una zona intermareal, que sugieren finalmente el hallazgo de este cementerio asociado a las comunidades indígenas/originarias que habitaban la región desde antes del arribo español al territorio. El hallazgo de elementos de diversos tipos cerámicos y diferentes restos óseos, aún pendientes de identificar, permiten sugerir los primeros indicios de este contexto nunca antes abordado desde una perspectiva arqueológica. Gracias a los aportes provenientes de las fuentes orales locales fue posible no sólo dar con el hallazgo, sino establecer una delimitación inicial del sitio. En consecuencia, el propósito de esta ponencia consiste en presentar las primeras aproximaciones en la zona donde se presume el hallazgo de este contexto asociado posiblemente a un cementerio prehispánico. *****Esta presentación incluirá imágenes de restos humanos.**

Sarmiento Rodríguez, Juan [41] see Del Cairo Hurtado, Carlos

Sartor, Hayley [223] see Sakai, Sachiko

Sasaki, Ken-ichi (Meiji University)

[113] *Acquiring Economic Power in Chieftom Societies of Early Japan*

Japanese chiefly polities began evolving toward states during the Kofun period (middle third to early seventh centuries CE), as evidenced by the appearance of a key material symbol of increased social complexity and control: keyhole-shaped mounded tombs. Construction of these distinctive tombs reflects several meanings, which differed from one region to another. I argue that keyhole-shaped tombs symbolize some degree of elite political control over local economies. As a case in point, large keyhole-shaped tombs were erected during the fifth and sixth centuries in the coastal region at Lake Kasumigaura, the second-largest lake in Japan, located some 45–50 miles northeast of modern Tokyo. In the early fifth century, 186 m long and 123 m long keyhole-shaped tombs appeared at the lake's northwestern and southeastern corner. From the end of the fifth to early sixth centuries, several 90 m long keyhole-shaped tombs were built in the northern coastal areas. These tombs were very close to the locations of piers recorded on an early seventeenth-century map. I suggest that these keyhole-shaped tombs were planned and constructed by local elites who accumulated power and wealth by controlling water transportation and the movement of goods from the coastal region to the lake.

Sassorossi, William [292] see Evans, Amanda

Sathiakumar, Abhishek, Caroline Graham, Lia Kitteringham (Colorado State University; Chronicle Heritage Group, Denver, CO), and Cannon Kelly (Colorado State University)

[128] *Utilizing Micromorphology to Identify Past Landscape Modification and the Construction of a Middle Woodland Geometric Enclosure in Central Kentucky*

The growing use of soil micromorphology has allowed geoarchaeologists to better understand landscape use and modification by people in the past. By identifying the effects that anthropogenic activities have on pedogenesis and the alteration of sediment deposition at the microscopic scale, archaeologists can better relate the processes seen in macro-level bulk analyses of archaeological features with what is visible in such features at the microscopic level. Moreover, micromorphological studies has consistently provided information on human activities and postdepositional processes that are not discernable at the macroscale. We employ micromorphological studies of several contexts associated with the preconstruction and construction contexts of the eastern Bogie Circle, a Middle Woodland (ca. 300 BCE–500 CE) earthen enclosure in Central Kentucky.

By analyzing slides from the buried A-horizon beneath the enclosure's embankment, and slides that are comprised of B- and C-horizon deposits within the enclosure's embankment fills, we work to better understand what was taking place at the site before and during construction of this monument. We then integrate our findings within the broader context of the landform the enclosure was constructed on and analyses of sediment and soil analyses from a bulk column collected from the embankment.

Sathiakumar, Abhishek [128] see Graham, Caroline

Satterwhite, R. David (Crow Canyon Archaeological Center), Steve Copeland (Crow Canyon Archaeological Center), R. J. Sinensky (Crow Canyon Archaeological Center), Jonathan Dombrosky (Crow Canyon Archaeological Center), and Jamie Merewether (Crow Canyon Archaeological Center)

[86] *Ancestral Pueblo Turkey Management at 5MT1905: Evidence for Confinement of Turkeys within a Pueblo II Roomblock in Southwest Colorado*

The human-turkey relationship is an important aspect of Ancestral Pueblo history and has been the focus of recent research in the US Southwest and Northwest Mexico. One of the most important turkey management approaches employed by Ancestral and modern Pueblo peoples involves confinement (i.e., penning or tethering). The central Mesa Verde region, located in southwest Colorado, is one area where Ancestral Pueblo confinement strategies need further clarification. At the Haynie site (5MT1905), an AD 850–950 early PI village and AD 950–1150 Chaco Great House located in this area, there is evidence for turkey containment within a Pueblo II period (900–1150 CE) masonry surface room. Excrement staining, a turkey dung mat, gizzard stones, and eggshell concentrated in a distinct and likely stockaded portion of the room all suggest reuse of domestic spaces as loci for turkey confinement. This poster provides one example of human management of turkeys in a village setting during the early Pueblo II period in the central Mesa Verde region, adding additional context to the existing body of work assessing Ancestral Pueblo-turkey relationships.

Sattler, Robert (Tanana Chiefs Conference)

[214] *Tanana Chiefs Conference Cultural Resources Program, Interior Alaska*
[WITHDRAWN]

Sauer, Jacob (Vanderbilt University)

[170] *They Have NOT “Risen Up and Rebelled”: Mapuche Offense and Defense in the Sixteenth and Seventeenth Centuries*

The so-called War of Arauco in south-central Chile in the sixteenth and seventeenth centuries is often referred to as a “rebellion,” “uprising,” or “insurrection” by the indigenous Mapuche against the colonizing Spanish. These terms suggest, and popular ideas perpetuate the idea, that the Spanish effectively colonized southern Chile and brought the Mapuche under imperial authority. Only after several attempts as well as marked modification to cultural practices were the Mapuche able to effectively “rebel” against their Spanish overseers and gain their independence. However, a reevaluation of the documents from the time period through the lens of the archaeological record paints a different picture. Rather than “uprising” the Mapuche instead engaged in intentional offensive and defensive actions from the outset of contact, keeping the Spanish from exercising any degree of effective colonial control in Mapuche territory, eventually succeeding in forcing the removal of all Spanish settlements. This evaluation may aid in reexamining the nature of Indigenous-European interactions elsewhere in the Americas.

Saul, Frank [52] see Martin, Lauri

Saunders, Christopher (University of Georgia)

[237] *Contextualizing the Visualization of Iconography and Funerary Belongings in Southeastern Archaeological Practice*

Visualization of artifacts is a key element of archaeology and the dissemination of information. Although technology has improved exponentially in the past few decades, the ethical use of such visual depictions of artifacts have not caught up to the degree of information these images have the potential to convey. Here, I

examine recent trends in the use and quality of images depicting Indigenous Ancestors and funerary belongings in publications on southeastern archaeology. I demonstrate that there is a disparity between the quality and clarity of photographs versus drawn illustrations when depicting these funerary subjects. Analysis of image subject, relevance, originality, and artifact site data show patterns of illustrations providing clearer and more direct alignment with the topics within publications as opposed to photographs. From this study, we can identify gaps within how images are currently used and provide actionable steps toward better practices of archaeological visualization in order to convey the greatest amount of relevant information through ethical and collaborative methods. This presentation does not contain images of human remains.

Sausser, Macayla (Texas A&M University), and Nicholas Bentley (Texas A&M University)

[88] *Turtles All the Way Down: A Zooarchaeological Analysis of Lady Bug (8JE795), an Inundated Archaeological Site in the Lower Aucilla River, Florida*

Located in the lower Aucilla River in northwest Florida, the Lady Bug site (8JE795) is a late Pleistocene archaeological site that contains more than 2 m of stratified faunal bearing sedimentary deposits. A diachronic zooarchaeological analysis will be performed on faunal material from these strata to better understand the environmental changes occurring in northwest Florida from the late Pleistocene to mid Holocene. The faunal material collected in ¼" screens during excavation will be examined level by level. Comparative specimens will be used to identify the faunal remains to their furthest possible taxonomic identification using morphological and metric characteristics. The minimum number of individuals (MNI) for each species will be determined. If species identification is not possible, then the genus will be recorded. Observing the changes in percent of terrestrial, aquatic, and semi-aquatic animal species throughout each stratum will help indicate environmental change. Once data collection is complete, a comparative analysis of faunal material from each identified stratum will be conducted, observing changes in species through time.

Saxon, Jasmine, and Jessica Ericson

[322] *Exploring Nontraditional Methods of Heritage Preservation: A Focus on Community Engagement*

Explore the spirit of preservation with Community Connections LLC, a women-owned archaeological consulting firm committed to advancing community-informed outcomes and nontraditional cultural resources practices. We'll examine case studies such as Guardians of Historic Lakewood and International Archaeology Day to unravel the complex dynamics between archaeology, preservation, and community engagement, while advocating for inclusive heritage resource management practices. By investigating the success and challenges of community heritage projects, we prioritize a future of unity, understanding, and the preservation of our collective heritage.

Sayle, Kerry [320] see Hamilton, Derek

Sayre, Matthew [64] see Ramshaw, Elizabeth

Sayre, Matthew [64] see Roberts, Jacob

Scaffidi, Beth (University of California, Merced), and Mark Horton (Royal Agricultural University)

[167] *Contact, Colonists, and Common Pool Resources: Insights from SIA of Terrestrial Fauna from North Carolina Coast and Interior in the Little Ice Age*

In recent years, human skeletons have become less accessible to bioarchaeologists aiming to understand past lifeways through destructive chemical analyses—despite these methods being more affordable, accessible, and well-established than ever in the biological, social, and life sciences. Human skeletons provide the most direct evidence of how human health, mortality, morbidity, well-being, and social conflict responded to period of climate change and common pool resource depletion. Since this knowledge is more critical than ever to understanding humanity's successes and failures in the face of our current challenges, we must continue to push the bounds of theoretical and analytical frameworks that can illuminate the impact of shock events in human food ecology beyond the limits of bioarchaeology. This paper combines stable isotope analysis of AMS-dated deer, racoon, pig, and dog bone (as proxies for human diet and subsistence) with deer fracture patterns (arrow vs. gunshot) to compare differences in agriculture and hunting between inland, Moravian-

settled Cherokee lands and coastal, English-settled Algonquin lands during the Little Ice Age (LIA; ~1580–1850s CE). Results suggest that maize agriculture decreased and hunting intensified in the coast but were unchanged in the Yadkin River Valley, perhaps related to differences in colonial-Indigenous relationships and landscape morality.

Scaffidi, Beth [193] see Osborn, Jo

Schachner, Gregson [298] see Solometo, Julie

Schaefer, Benjamin [379] see Banikazemi, Cyrus

Schaefer, Jonathan [223] see Ferguson, Jeffrey

Schaefer, Jordan

[368] *Capturing Experience through 3D Modeling and Archaeoacoustics in 12th Unnamed Cave, a Dark-Zone Cave Art Site in Tennessee*

Recent advances in 3D modeling have allowed archaeologists to explore cave art sites as dynamic spaces where perception and physical experience played active roles in the formation of said artwork. In the American Southeast, where caves were and still are seen by many Indigenous peoples as portals to another spiritual world, 3D reconstructions have much potential for exploring the relationship between cave art and the ontological perspectives of those who created it. One such site where the 3D approach has proven effective is 12th Unnamed Cave, a dark-zone cave art site that consists of several complex passageways with over 300 documented petroglyphs scattered throughout. By recontextualizing 12th Unnamed Cave as an experiential space where sight, sound, and movement influence one's perception of different passageways, it becomes apparent that rock art images were selectively placed in areas that promote specific feelings. Through a combination of photogrammetry and archaeoacoustics, a digital 3D model of 12th Unnamed Cave was constructed, through which different experiential variables were measured in relation to the rock art imagery. Findings suggest that 12th Unnamed Cave's artists used rock art to promote a cosmological model where movement through the cave allowed one to reenact the process of renewal.

Schauble, Lauren [198] see Harahsheh, Maryam

Schautteet, Anna (Raba Kistner)

[367] *Lithic Technology and Bison Hunting*

Archaeological investigations conducted at the Alamo compound produced a multitude of cultural materials, among them being chipped stone tools. In depth analysis of the Alamo lithic assemblage identified formal hafted tools, hide scrapers, and arrow points. In Texas, the bison hunting tool kit generally consists of hide scrapers, arrow points, and beveled knives. The presence of these tools indicates a reliance on seasonal bison hunting by mission inhabitants. Ethnographic accounts document the utilization of bison hides for domestic purposes within the missions. While bison hunting was no longer necessary at this point in history, the act and produced materials afforded Indigenous groups a connection to pre-mission lifeways. This paper will aim to establish the relationship between the lithic assemblage at the Alamo to both ethnographic accounts, and archaeological understanding of seasonal bison hunting at other missions within Texas.

Scheffler, Timothy (TesARCH Services)

[291] *The Anakuakala Pictograph (Ki'i Pakuhi) from Hawai'i Island: A Contextual and Comparative Assessment*

The 2014 eruption of Kīlauea Volcano prompted the emergency survey of a cave in the Puna District of Hawai'i Island. The survey recorded several kilometers of cave passage including stacked rock structures, midden, and also a distinctive feature in the form of a geometric design. Given its geologic context and layout on the cave floor it is of unquestionable anthropogenic origin. The pictograph consists of multiple elements, including slabs of rock and long rootlets collected from elsewhere in the cave. It is surrounded by patches of concentrated ash. Two AMS radiocarbon dates on the ash and rootlet material suggest it was assembled in the seventeenth century. A case is made for the importance of the cave at the landscape level and in culture

history. The image is compared with the tradition of string figure making in Hawai'i and with a petroglyph from Kaho'olawe Island, with which there are similarities. Analogies are suggested between its graphic elements and visual representations of Polynesian wayfaring and astronomical lore. Multiple lines of independent, yet circumstantial evidence are combined in an attempt to place the feature within a broader discussion of anthropological archaeology and social production in precontact Hawai'i. The image's function remains unknown.

Schefuß, Enno [281] see Esteban, Irene

Schenk, Kristine [227] see Demyan, Marcela

Schenk, Kristine [188] see Kowalewski, Stephen

Scherer, Andrew (Brown University), Cristina Garcia, Edwin Roman-Ramirez, Stephen Houston (Brown University; Peabody Museum of Archaeology and Ethnology, Harvard University), and Eduardo Bustamante

[45] *Cranial Bowls, Broken Bones, and Precious Bodies: The Presence of Teotihuacan at Tikal*

For decades, scholars have recognized ties between the Central Mexican metropolis of Teotihuacan and the Maya city of Tikal, particularly in the wake of a poorly understood event in AD 378. At Tikal, the strongest evidence for that connection comes from the southern edge of the site center, within a precinct centered around an architectural complex that, in its later stages, resembled the Ciudadela of Teotihuacan. Despite much Central Mexican material culture in this zone, the burials are consistent with Maya mortuary traditions, and isotopic evidence has yet to identify people who spent part of their childhood outside the Maya area. Beyond the burials, however, are deposits of human remains that point to the distinct treatment of the dead in this part of the city. This includes 69 offering vessels carved from human crania and numerous broken and polished long bones, among other disarticulated human remains. Moreover, the bodies of at least three children associated with a Teotihuacan-style altar are likely the remains of human sacrifice, a practice that was shared by both cities at this time. This paper considers those remains relative to the making (or unmaking) of the Central Mexican precinct at this great Maya city. *****This presentation will include images of human remains.**

Scherer, Andrew (Brown University), Edwin Roman-Ramirez, Charles Golden (Brandeis University), and Fernando Godos (INAH)

[26] *Diverse Perspectives on Precolonial Maya Human Remains and the Foreigners Who Study Them*

The ethics surrounding the study of the skeletal remains of the "ancient Maya" are fraught and variable. For much of the second millennium AD, large swaths of the southern Maya lowlands were sparsely occupied by Indigenous peoples, with population booms spurred by internal migration only in recent decades. Thus, relevant stakeholders are diverse, including descendant communities, non-descendant communities, and modern nation-states with varying laws and standards. Local stakeholders also have diverse priorities owing to variable economic resources, political organizations, and land ownership rights, while precolonial ruins may be viewed as belonging to non-ancestral others, whether the semi-supernatural "ancient Maya," the Aztecs, or the gods. Even the term "Maya" is not necessarily an identity to which Indigenous people of the region subscribe outside the Yucatán. A common thread, however, is the perceived financial potential of ruined places and concerns over the extractive nature of archaeology. Archaeologists are generally understood as foreigners, a moral category encompassing international researchers as well as national archaeologists in Mexico and Guatemala, who predominately do not identify as Indigenous and live and study in distant urban centers. Our discussion centers on our own experiences working with communities in rural Chiapas and at Maya centers in Petén, Guatemala.

Scherer, Andrew [343] see Bolster, Alyssa

Schick, Kathy [229] see Meier, Trenton

Schleher, Kari (Maxwell Museum, University of New Mexico), Hannah Mattson (University of New Mexico), Madison Drew (University of New Mexico), and Christopher Chavez (Santo Domingo Pueblo Tribal Historic Preservation Officer)

[42] *Contemporary Pueblo Perspectives on Ancestral Jewelry Production: Views from Santo Domingo/Kewa and Zuni/A:shiwí Pueblos*

With the goal of understanding the deep history of jewelry making in the US Southwest, we are working collaboratively with Indigenous artists from Santo Domingo and Zuni Pueblos. This project involves three phases: (1) collections review of over 500 Ancestral Pueblo jewelry pieces and jewelry-making tools from New Mexico at the Maxwell Museum (MMA); (2) filming artists in their studios to explore contemporary jewelry production techniques; and (3) a co-curated exhibit at MMA that presents over 1,000 years Pueblo jewelry production continuity and change. Together with the artists, we have identified multiple themes: (1) jewelry production is deeply rooted in the Ancestral Pueblo past; (2) adornment and jewelry making are and always have been vital to the identity of Pueblo communities; (3) there are both continuities and significant changes in technology used to make jewelry over time; and (4) jewelry making is economically important to Pueblo artists. This project seeks to eliminate barriers between archaeologists and community members through collaboratively learning from traditional jewelry production. Artists will also make contemporary pieces for the exhibit inspired by ancestral jewelry. The co-curators will design the exhibit to highlight continuity, innovation, and change in this important art form in Pueblo communities across generations.

Schmader, Matthew (University of New Mexico)

[220] *Pueblo Resistance, Interethnic Conflict, and the Coronado Expedition to Central New Mexico (1540–1542)*

In early 1540, hundreds of people assembled in west-central Mexico to start a journey northward searching for an overland route to Asia. The viceroy of Nueva España, Antonio de Mendoza, was sanctioned to conduct the exploration, and chose Francisco Vázquez de Coronado to lead it. The enterprise was one of the largest and most expensive in the early Spanish exploration of the Western Hemisphere. Three hundred and seventy Europeans were accompanied by an estimated 2,000 indigenous Mexican soldiers and laborers from a wide variety of cultural groups. The expedition was the first major contact between outsiders and Indigenous peoples of the American Southwest. Investigation at a large village on the Rio Grande north of Albuquerque, New Mexico, has revealed physical evidence, underlying tactics, and outcomes of a stand-off between the expedition and the ancestors of today's Southern Tiwa people. Distinctive artifacts can be tied back to the different groups who used them in the fight. One important element of this work includes identifying many hundreds of stones thrown by Tiwa defenders in defense of their village. This confrontation was the first, but certainly not the last, in decades of struggle between native peoples and would-be colonizers of New Mexico from Nueva España.

Schmaus, Tekla (Washington State University)

[278] *Sheep, Cows, Landscapes: Eurasian Archaeology?*

This paper draws on faunal analyses and field surveys conducted in Armenia and Central Asia to consider the utility of the idea of Eurasian archaeology. Broadly synthetic, it compares pastoral strategies and land-use practices from the Bronze Age through the Medieval period. Although species composition and herding strategies may have varied with time and place, mobility remains a unifying theme across the continent. Furthermore, the landscapes of these regions have all been deeply impacted by the impacts of modernist agriculture. By comparing regions, and the impacts of collectivization in different regions, we can better understand the extent of disruption at different sites. Drawing together these threads demonstrates the continued relevance of archaeological dialogue that spans Eurasia, yet leaves space for local variation. No matter what kind of livestock we study, they and their people have been co-creating Eurasian landscapes for millennia.

Schmidt, Morgan [341] see Perron, Taylor

Schmitt, Dave [288] see Edwards, Nicolette

Schmitt, Sarah [64] see Ramshaw, Elizabeth

Schneider, Blair [364] see Norman, Lauren

Schneider, Danielle (Bureau of Reclamation)

[95] *Navajo-Gallup Water Supply Project Further Mitigation Program*

The Navajo-Gallup Water Supply Project (NGWSP) is a large-scale project that when complete will provide water to the eastern section of the Navajo Nation, southwestern portion of the Jicarilla Apache Nation, and the city of Gallup, New Mexico. The Bureau of Reclamation is responsible for considering the effects of the NGWSP on historic properties and the mitigation of adverse effects to those properties. Through continued consultation and collaboration, the Further Mitigation Program (FMP) was conceived. “Further” in this context infers that the program will go further than traditional Western-oriented archaeological mitigation (WCAO 2024). This paper discusses the FMP and its implications on the future of mitigation for Reclamation and for the West.

Schneider von Deimling, Jens [277] see Auer, Jens

Schnell, Joshua (University of Pittsburgh)

[343] *Jewels of the Mouth: Tooth Polishing and Oral Care as Care among the Classic Maya*

Since its inception, studies carried out under the auspices of the Bioarchaeology of Care have largely focused on individuals with significant pathologies and impairments. Often, the concept of caregiving in the past (though defined broadly as “health-related care”) takes on a rather narrow scope limited to caregiving without which an individual could not have survived. This paper encourages an expansion of our idea of care and caregiving in the past to include routine and habitual aesthetic and hygiene upkeep practices (i.e., “personal care”) as well as minor medical interventions. In this pursuit, it highlights the important role that the mouth and human dentition plays in enabling bioarchaeologists to approach these added dimensions of care. This paper makes this argument by examining the practice of tooth polishing among the Classic Maya. Tooth polishing represents an understudied yet widespread component of a complex dental tradition comprising aesthetic, therapeutic, and hygienic care practices. The Classic Maya understood the teeth as jewels that needed to be polished, but the act of tooth polishing was as much about cultural aesthetics as it was about dental hygiene. It was a common personal care practice that was also part of upkeeping the “crafted body.” ***This presentation will include images of human remains.

Schober, Theresa [33] see Peres, Tanya

Schollmeyer, Karen (Archaeology Southwest), Danielle Romero (Western New Mexico University Museum), and Rebecca Harkness

[124] *Supra-household Organization at the NAN Ranch Site, Southwest New Mexico*

The NAN Ranch archaeological site is a Mimbres Classic and Late Pithouse period (AD 750–1130) village in the Mimbres Valley of southwestern New Mexico. This pueblo was one of the largest in the region and also one of the largest controlled excavations of a Mimbres Classic site, directed by Harry Shafer at Texas A&M University in the 1970s–1990s. One interesting feature of this village is its evidence of extended-family household groups, identified through architectural analyses and burial data by Shafer. These groups are thought to have cooperated for subsistence activities like growing crops and constructing and maintaining irrigation systems. Certain groups are also argued to have controlled access to important natural and social resources, including prime agricultural land and specialized knowledge and ritual practices. This study expands on Shafer’s original analyses, examining additional evidence for supra-household groups and variability among them based on architectural features and artifacts associated with rooms and groups of rooms. We assess patterns in supra-household group size, craft and food production, storage space, and other attributes in order to better understand the range of activities conducted by these groups and how they contributed to the social and economic fabric of the NAN Ranch village.

Schollmeyer, Karen [385] see Oas, Sarah

Scholnick, Jonathan (Bucknell University), Juan Manuel Palomo, and Jessica Munson

[166] *Unveiling Ancient Maya Health and Well-Being: Osteological Insights and Social Disparities from Altar de Sacrificios and the Upper Usumacinta Confluence Zone*

Previous investigations at Altar de Sacrificios by Harvard University in the 1960s uncovered 140 individuals from diverse residential and ceremonial contexts concentrated around the site epicenter. Recent excavations by PAALS have increased this sample to over 200 individuals from more dispersed spatial contexts in the Upper Usumacinta Confluence Zone (UUCZ) that span the Late Preclassic to Terminal Classic periods. Osteological analysis reveals various paleopathologies across the population such as porotic hyperostosis, buccal abscess, cavities, and periodontal and periostitis infections. These data are used to calculate health indices for the entire sample to examine variation in the population health and disparities in health status over time within the UUCZ. In addition, we describe the dental decorations and other bodily practices that were observed throughout the burial population. Overall, these results reveal a complex relationship between health, wealth, and social status within this ancient Maya community which offer important insights to characterize human well-being. These data permit comparisons between the site core and peripheral settlements, as well as longitudinal analyses across the Preclassic and Classic periods. *****This presentation will include images of human remains.**

Schortman, Edward [171] see Urban, Patricia

Schrader, Max, Chrissina Burke, and Kaimana Bueno

[293] *(Animal) Skeletons in the Closet: Decolonizing Comparative Faunal Collections*

The Northern Arizona University Department of Anthropology Faunal Analysis Laboratory (NAUDAFAL) prioritizes decolonizing zooarchaeology through our work. Despite this mission, the lab's comparative collection is stored and organized in alignment with arbitrary Euro-Western epistemologies and lacks Indigenous perspectives for organizing and handling faunal remains. Our presentation outlines how we collaborated with Indigenous communities in northern Arizona to decolonize our comparative collection and create a safe space for Indigenous students interested in zooarchaeology. Our work included a physical reorganization of the comparative collection, the creation of a provenance recording protocol, and appropriate identification and dissemination of the animals present in the lab. Beyond implementing a material reorganization that is more inclusive of Indigenous students, the project wove stronger, more reciprocal relationships between anthropology students and Indigenous communities by training students in decolonizing methodologies. Additionally, this project confronts a gap in the discipline, as there is little existing literature on decolonizing comparative research collections.

Schreg, Rainer [284] see Fisher, Lynn

Schreiner, Nina, and Miranda Panther

[275] *From Repatriation to Collaboration for South Carolina State Collections: The Keowee-Toxaway Reservoir Project*

Stewarding state-controlled archaeological collections is challenging when state budget allocations determine the degree to which best practices may be realized in the repository. When daily routines are constrained by under-resourcing, engaging community stakeholders may seem out of reach; but regardless of capacity, state agencies must comply with the Native American Graves Protection and Repatriation Act (NAGPRA). We argue that NAGPRA compliance should be prioritized as an opportunity rather than avoided as a burden and provide a case study in relationship building from one of the smallest offices of state archaeology in the US Southeast. In 2023 and 2024, the South Carolina Institute of Archaeology and Anthropology revived stalled NAGPRA consultations. Frequent communication with the Eastern Band of Cherokee Indians evolved into the Keowee-Toxaway Reservoir Project (KTRP), a collaborative investigation of orphaned and legacy collections from the midcentury salvage era. The KTRP addresses the under-documented archaeological record of Cherokee Lower Towns in South Carolina by introducing traditional knowledge to collections care and research (43CFR10.1(d)).

Schreiner, Nina [293] see Lindler, Joseph

Schreiner, Thomas [383] see Hernández, Enrique

Schroder, Whittaker (University of Florida)

[291] *Reexamining Maya Rock Art at Planchón de las Figuras, Chiapas, Mexico: Documentation of Petroglyphs with Close Range, High-Resolution Photogrammetry and Relief Visualization*

The Maya are well-known for their sculptures in stone, most prolific during the Classic period (AD 250–800); what Gordon Willey and Robert Redfield once called “great styles” or “great traditions,” respectively. More recently, archaeologists have investigated other forms of Maya rock art and graffiti, most commonly found inside caves and architectural spaces. One of the largest examples of Maya rock art was first identified in 1903 as “Planchón de las Figuras,” roughly translated as “Great Slab of the Figures.” This site consists of a large rock art panel covered in petroglyphs, forming a beach of stratified limestone on the bank of the Lacantún River in Chiapas, Mexico. Several archaeologists have photographed and sketched these petroglyphs, which include scores of anthropomorphic, zoomorphic, geometric, and architectural designs. However, the full extent of the rock art panel and its relation to other archaeological sites has remained unclear. This research presents a very low altitude drone survey and close-range photogrammetric documentation of Planchón de las Figuras to construct a 3D model of the site. Using techniques adopted from microtopographic analysis, the 3D model was converted into a digital elevation model enhanced with relief visualization, documenting known and previously unknown petroglyphs within this sacred landscape.

Schroeder, Bryon (Center for Big Bend Studies, Sul Ross State University)

[275] *No Context: Can We Achieve Meaningful Research with Unprovenienced Legacy Collections?*

Engaged amateurs, or Responsive and Responsible Stewards (RRS), are the drivers behind some of the discipline’s most influential field efforts and consequential material collections. There are numerous examples of RRS collaboration with the professional community, and we often use their involvement as a valuable source of knowledge about the past. However, this often includes collaborative fieldwork where professional communities recover or verify locational information about recovered materials. Collected or orphaned materials without clear locational information are denigrated. As a discipline, we tend to value locational data more than recovered artifacts, and the loss of a verifiable context by professionals has left important collections unanalyzed. Can we build methods to incorporate unprovenienced legacy collections into more extensive analyses? This talk will include several examples of context-free archaeology and the methods associated with building spatial information.

Schroeder, Bryon [128] see Kidwell, Jasmine

Schroeder, Bryon [337] see Rosen, Arlene

Schroeder, Eric, and Jeremy Elliott

[112] *Collaborative Research at the Paint Rock Site*

The Paint Rock Project is a Native American collaborative research project that centers on the conservation of Native American heritage and culture facilitated by the Campbell Family, tribal elders, and researchers from Abilene Christian University and the Edwards Plateau Archaeological Research Group. Situated within the Middle Colorado River Valley of west-central Texas, the Paint Rock site contains pre- and postcontact period rock art and archaeological deposits spanning over 2,000 years of Native American and colonial history. Research at the site involves the sharing and preservation of traditional cultural knowledge and history through workshops on traditional lifeways and indigenous languages, participation in ritual practices, as well as the interpretation of rock art and archaeological investigation. The goal of the project is to create and maintain a space for the exchange and preservation of Indigenous epistemologies. This presentation will focus on the interpretive aspects of some of the rock art panels and the current interpretive framework on the associated archaeological deposits.

Schroeder, Eric [275] see Bussiere, Lauren

Schroeder, Sissel (UW-Madison), and Tamara Thomsen (Wisconsin Historical Society Maritime Archaeology Program)

[160] *Indigenous Wood Choice, Technological Innovation, and Dugout Canoes in Eastern North America*

Recent interest in the archaeology of dugouts and dugout canoe travel has accelerated research on these unique artifacts in collections, is associated with an increase in inadvertent discoveries, has prompted searches for dugout canoes in lakes and waterways using novel methods, and expanded efforts to date and identify wood type of dugouts. With a sample of nearly 200 dugouts from eastern North America for which wood type has been reported, we have determined that these watercraft were made from a variety of wood types that typically correlate with the premodern vegetation in the regions where they were found. The diversity of hardwood and softwood taxa used provides a critique of dominant colonial accounts that emphasize softwoods with combustible pitch that presumably would have made it easier to hollow out a trunk using fire and stone and shell tools. The assemblage, with canoes dating across approximately 6,000 years, also captures the impact of climate change on wood choice, particularly for the mid-Holocene Midcontinent.

Schülke, Almut [345] see Calvo Gómez, Jorge

Schultz, JoAnna (ENMU)

[127] *Macro-Micro Use-Wear on Hell Gap Ground Stone Tools by Characterizing Wear Traces*

3D modeling within ground stone tools creates a closer look into specifics of how they were utilized. This model specifically is intended to better recognize utilizations of ground stone as well as multipurpose usage of these tool kits. The project focus is the enhanced description of this artifact's use-wear and possible deposits of ochre by using observation, microscopy, photogrammetry, and creating a 3D model of artifact (HG-UWII-3759) since ground stone tools are defined among the utilitarian, observed through collected ground stone tools at Hell Gap (NHL), including those of abraders, hand stones, grinding slabs, pestles, and more. This model takes a step further into redeveloping the idea of ground stone tool kits. By using the artifact one can better determine its likeness in comparison to other tool kits found at Hell Gap (NHL).

Schultz, John [323] see McGehee, Kelly

Schumacher, Emily (University of Science & Arts of Oklahoma), and Miriam Belmaker (University of Tulsa)

[233] *Don't Forget about Me: The Role of "Minor" Fortifications in the Interpretation of Military Landscapes*

Military sites and spaces are of great interest to archaeologists, historians, and the public. They are significant for interpreting past events and understanding the lives of those who lived and labored there. The larger and grandiose military sites often become the primary focus of conservation and research efforts for their monumentality and their links to historical people and events. However, this emphasis on "major" military sites and spaces only tells part of the story. The colonial landscapes of the Caribbean were once dotted with "minor" fortifications. These smaller spaces and their occupants were active participants in the defense systems established by Europeans on the islands, yet they are often absent from historical and archaeological interpretations. Moreover, the public and descendant communities may not know they exist, let alone their significance. This paper thus explores the role of such "minor" fortifications in interpreting military landscapes. Focusing on the case study of Fort Louise Augusta, a former Danish coastal battery in St. Croix, US Virgin Islands, this paper discusses how incorporating such sites into archaeological studies of fortifications and military landscapes results in more nuanced interpretations than focusing on large sites alone.

Schurr, Mark (University of Notre Dame), and Terrance Martin

[74] *Eastern Oneota Ecology at the Dawn of History: Stable Isotope Perspectives*

Indigenous Eastern Oneota groups inhabited the Prairie Peninsula region of midwestern North America for several centuries. It is widely known they used maize and wild resources from a variety of different ecosystems. The ecosystems they used are usually inferred through site-catchment analysis or the presence of faunal and floral remains from different habitats. We use the stable carbon and nitrogen isotope ratios of faunal remains from Middle Grant Creek Site in northwestern Illinois, USA, to determine what types of

habitats the animals were obtained from. The Middle Grant Creek site was an agricultural village that supported a population of around 150 people during one of the coldest periods of the Little Ice Age. It is usually assumed that Oneota groups cultivated fields by their village, exploited nearby wetlands, and traveled long distances to acquire prairie resources. Stable isotopes from a large and well-preserved faunal assemblage show the inhabitants of Middle Grant Creek exploited aquatic resources from beyond typical catchment areas, and terrestrial fauna from nearby prairies, in contrast to prevailing models. These unique activities, coupled with maize production in modified wetlands, may have been responses to an adverse climate.

Schurr, Mark [223] see Langgle, Melanie

Schwartz, Aliana (University of West Florida), and Katie Miller Wolf

[36] *Dental Evidence for Structural Resilience and Vulnerability at Ancient Copan, Honduras*

Late Classic Copan was a densely populated, socially complex center of ancient Maya political and economic activity. Society was structured around status, residences, and complex demonstrations of identity and lived experiences. Despite these multiplicitous variations in social positions, previous analyses have found high rates of nonspecific stress indicators across all demographic groups at the site. Bioarchaeological research continues to grapple with the relationship between these stress markers and a population's health. Using micro and macroscopic approaches, this paper investigates differences in the timing, duration, and severity of linear enamel hypoplasias among individuals interned at Copan. By examining the changes in individual stress responses across successive stress episodes, long-term, embodied effects of stress exposure during childhood are explored. The frameworks of structural vulnerability and resilience are applied to interrogate how social positionality, as reflected in death, affected how individuals living in similar physical environments differentially encountered and responded to challenges to their health. ***This presentation will include images of Mesoamerican human remains.

Schwartz, Christopher [385] see Oas, Sarah

Schwartz, Ira (University of Toronto)

[278] *Azizkendi Tepe: Results from the Second Season of Excavations at a New "Leilatepe" Period Site in the Republic of Georgia*

Azizkendi Tepe is a Late Chalcolithic period (ca 3900–3500 BCE) site located in the Marneuli plain in southern Georgia. The site was discovered in 2019 during pedestrian survey and after just two seasons of excavation it has come to hold a unique and important place in the archaeology of the South Caucasus. Research at Azizkendi Tepe has revealed new information about the complex process of acculturation that took place during the "Leilatepe" period as Mesopotamian people migrated into the region. Over time, locals and newcomers participated in the formation of new social realities and novel practices that are visible in the material record at Azizkendi Tepe. This paper presents excavated material from that site, and situates it in the broader context of changing practices and identities during the mid-fifth millennium BCE.

Schwarz, Kevin

[51] *The Space between Cooperation and Despotism: The Archaeology of Maya Architecture and Raised Field Agriculture in the Petén Lakes Region, Guatemala, during the Classic to Postclassic Transition*

The space between cooperative society and despotism is vast, and understanding how ancient societies worked with archaeology can be challenging. But, in the current era, with democracy and authoritarianism contending, it is important to study such phenomena, particularly in periods of transition. The collapse of Classic Maya states (AD 750–900) is one such transition in which the emphasis of much scholarship has been the failure of divine kingship and decline of hierarchical society. Utilizing a dataset from the Lowland Maya and focusing on the Petén Lakes region of Guatemala, recent investigations indicate the following Postclassic period was one of transformation in which dual rulership came to the fore, and a *multepal* (councilor) form of rulership was visible in certain circumstances. The presentation engages with the material record of architecture and evidence of canal construction and raised field agriculture, to explore the reemergence of a cooperative and less centralized and hierarchical society in the Postclassic and Early Historic periods (AD 900–1525 and AD 1525–1697).

Schwarz, Victoria [382] see Milton, Emily

Schweickart, Eric (Colonial Williamsburg Foundation)

[178] *A Provenience Analysis of Glass Wine Bottle Seals and the Commodification of Household Goods in Early Eighteenth-Century Colonial Virginia*

In this presentation I use a pXRF analysis of the chemical composition of glass wine bottle seals recovered from John Custis IV's manor house in Williamsburg, Virginia, to investigate the development of mercantile networks in the early eighteenth-century British Atlantic world. Utilizing the documentary and archaeological record related to this planter and merchant, I will show how British tobacco factors changed their interactions with manufacturers over the course of the first four decades of the 1700s to meet the demands of planters. As Bristol-based merchants worked to compete with their London colleagues, they increased the speed that they could get Virginian planters their goods by splitting up the orders between multiple manufacturers. This process served to further obscure the relationship between the producers and consumers of household goods, increasing the commodification of everyday objects circulating in the mercantile networks of the Atlantic World and leading to the rise of consumerism in both the new world and the old.

Schweickart, Eric [70] see Castleberry, Crystal

Schwendler, Rebecca (Histria Cultural Resource Consulting LLC), Charles Egeland (University of North Carolina, Greensboro), Sakhawat Hossan (University of North Carolina, Greensboro), Isobel Wisher (Aarhus University), and Arnault-Quentin Vermillet (Aarhus University)

[156] *Perforated Disks as Indicators of Magdalenian Social Networks*

During the Middle and Upper Magdalenian (ca. 18,000–14,000 cal BP), people across western and central Europe created and circulated perforated disks made largely of bone and stone. Averaging ca. 4 cm in diameter, the disks were one of many portable decorated items produced during the Magdalenian in the context of rapid population expansions and migrations. The diversity in materials, motifs, and chrono-spatial distributions of the disks suggest changes in the types and patterns of social connections among hunter-forager groups as they navigated postglacial physical and social landscapes. To test hypotheses about how Magdalenian peoples used material culture to construct and maintain social networks, we derive indices of disk motif similarity using categorical, image analysis, and perceptual salience approaches. We then use these similarity indices as input for formal network analysis to identify clusters of similarly decorated disks and track whether those clusters coincide with geographical proximity and/or climatic zones. We find that Magdalenian peoples actively used perforated disks to signal social similarities and bonds well outside the geographical distances and topographical areas that would be expected by a “safety net” model of human interactions.

Scialo, Stephanie (University of Connecticut), and David Leslie

[217] *Between Two Sources: Interpretations of the Dolly Copp and Dolly Copp II Sites in Randolph, New Hampshire*

During the 2023 field season, Heritage Consultants LLC conducted Phase IB and II survey excavations at the Dolly Copp and Dolly Copp II sites, located above the Moose River in the White Mountains in Randolph, New Hampshire. Lithic artifacts recovered from both locations included large preforms, unifacial tools, wedges, overshot flakes, and channel flakes, suggesting both sites date to the Paleoindian era. An intact hearth feature dating to the early Holocene identified at the Dolly Copp II site further corroborated this conclusion. This region of the White Mountains contains several Paleoindian sites; however, most are located on elevated terraces and high lookout areas above the river valley. These newly identified sites stand out from previous locales as concentrated and isolated deposits within the river valley and display significant exploitation of local rhyolite sources from nearby Jefferson and Mount Jasper. Both sites fit within previously predicted settlement patterns of Paleoindians within the Israel and Moose River Corridor and fall in ideal locations for campsites to manufacture and maintain tools while hunting within the valley. The excavations also highlight the success of maintaining positive long-term client relationships in CRM, through which additional survey of the Dolly Copp site was supported.

Scialo, Stephanie [74] see Reed, Elizabeth

Scott, George [165] see Delgado, Miguel

Scott Cummings, Linda (PaleoResearch Institute), R. A. Varney (PaleoResearch Institute), Scott Anfinson (University of Minnesota), Thomas Stafford, Jr. (Stafford Research Inc.), and John Southon (Keck Carbon Cycle AMS, University of California, Irvine)

[301] *Radiocarbon Dating in Minnesota and Beyond: Fish, Wild Rice, Charred Food Crust, Archaeological Bone and Charcoal, and Human Collagen and Tissues—Expanding Our Understanding of Ancient Carbon*

After a robust start that included dating bone collagen from four fish caught in 1939 and curated at MNHS, that larger project set out to investigate the accuracy of radiocarbon dates on various sample types in the state. Radiocarbon dates on fish ranged from 307 to 1225 BP, aligning with trophic levels. More dates on modern fish fall within this range. Modern wild rice from some lakes dated “too old.” Charred food crust adhering to Brainerd ceramics and other culturally associated ceramics produced dates that are “too old” for their associated contexts. Bone collagen produced dates that were older than those on charcoal. We examined local geology, including underlying carbonates, which contribute dissolved ancient carbon to the ecosystem. These results were funded by the Minnesota Statewide Survey. Continued studies funded by NSF examined charred food crust from other locations in an effort to map areas of concern outside Minnesota. This was followed, recently, by radiocarbon dating bone collagen and apatite, and tissue samples from a living individual, which is rare, in an effort to find a key to explain dates that appear to be “too old” obtained from archaeological bone collagen.

Scott Cummings, Linda [301] see Anfinson, Scott

Sear, David (University of Southampton), Mark Peuple (University of Southampton), Charlotte Hipkiss (National Stable Isotope Research Facility, British Geological Survey), Pete Langdon (University of Southampton), and Justin Sheffield (University of Southampton)

[173] *Did a Changing Climate in the Tropical South Pacific Contribute to the Eastward Migration and Settlement of Polynesia?*

The migration of humans into the eastern Pacific was rapid and focused around 900–1250 CE. Although the causes of this rapid migration are likely varied, we put forward new evidence to suggest that a change in the mean state of the tropical south Pacific from a La Niña-like to El Niño-like state around the period of migration could have created conditions for migrations east. We use a range of sediment archives and hydroclimate proxies located in sites within the center of migration to reconstruct climate conditions that were characterized by a drier southwest Pacific and wetter eastern Pacific 1000 CE. Reductions in zonal sea surface temperatures associated with these changes suggest a weakening of easterly winds that would favor sailing east. Climate modeling supports our reconstructions and suggest reductions in annual rainfall of approximately 20%–30% in the Samoa/Tonga archipelagos. Results from socio-hydrological models of Makatea islands highlight the sensitivity of growing populations to droughts within a drying climate. Using these lines of evidence, we suggest that as populations grew, particularly in island types sensitive to droughts, people with some knowledge of eastern “Gateway islands” chose to move east at a time when wetter conditions supported their long-term settlement.

Searcy, Michael [245] see Davidson, Jaron

Sedig, Jakob

[68] *Innovation, Growth, and Preservation in CRM*

Three themes unite the posters in this session: Innovation, Growth, and Preservation. This poster reviews how Chronicle Heritage’s leadership in the CRM field encompasses these themes. The last few years have seen significant advancements in CRM. Fewer than 20 years ago, most archaeologists were trained to do basic tasks, such as mapping or profiling, solely by hand or with the analog tools the field has employed for over a century. Today, off-the-shelf smartphones provide all the necessary tools for lidar, 3D photogrammetry, GIS mapping, and more. These rapid advancements in technology and their affordability allow CRM specialists to work more accurately and efficiently than ever. This increased efficiency is one factor in the growth of some companies, including Chronicle Heritage, to sizes previously unseen in CRM. Companies are also expanding into new

international markets. Amid these changes, archaeology has shifted from an excavation and data recovery model to one that emphasizes preservation, led by Indigenous scholars and the descendants of communities most impacted by archaeological research. This poster reviews these interrelated themes, their impact on CRM, and the lessons Chronicle Heritage staff have learned during this rapidly evolving era of CRM archaeology.

Sedig, Jakob [283] see Glover, Jeffrey

Sedig, Jakob [383] see Kollmann, Dana

Sedig, Jakob [68] see Seltzer-Rogers, Heather

Sedlmayr, Jayc (UTHSC), Ran Barkai (Tel-Aviv University), Clay Corbin (Commonwealth University of Pennsylvania), and Martin Oliva (Moravian Museum)

[279] *The Significance of Proboscidea Heads in the Paleolithic: Ethnoarchaeology of Trans-species Skull Cult with Reference to the Pavlonian and Mezinia*

In numerous cultures human and nonhuman heads and their separable components have been revered as spiritually significant and as sacra used in ritual within “head (or skull) cults,” often considered as ensouled beings imbued with vital force. Potent elements of the head include soft-tissue structures such as eyes, tongue, the brain, and ears; skeletal structures including the neuro- and viscerocrania, mandible, ear ossicles, and hyoid; and cephalic extensions frequently perceived as imbued with potency including horns, antlers, hair, beard, whiskers, and teeth. Tusks, the trunk, and molars are often viewed as separable “outgrowths” of the head in proboscideans. Cephalic parts, many with material correlates, have been used for magical purposes, healing medicines, psychopompy and necromancy, etc. There is a rich ethnohistoric record of the elephant head as sacra and some of the most magnificent examples of “skull cults” in archaeology include Neanderthal and *Homo sapiens* interaction with mammoth skulls, mandibles, molars, and tusks, especially in Pavlonian Moravia and Mezinian Ukraine that we briefly survey.

Seebach, John (Colorado Mesa University)

[230] *“Does this look Clovis-y to you?” Documenting the Whitewater Biface Cache, Mesa County, Colorado*

Two hunters discovered a small cache of 15 finely worked bifaces near Whitewater, Colorado, in 1976. As has become customary for assemblages of this type, the deposit has been considered as one of Clovis affiliation (13,050–12,750 cal BP). The size, workmanship, and manufacturing details of the analyzed pieces are certainly reminiscent of artifacts found within Clovis caches. Detailed and comparative analyses, however, cannot reliably confirm Clovis affiliation, particularly as the once easy correlation between biface caches and Clovis-era lithic technology is increasingly being questioned. With regard to the Whitewater Cache, one complicating aspect is the fact local lithic materials were predominantly used in the manufacture of the bifaces, with a single exception. The exception may have been imported 600 km into the region, indicating transport or trade distances that are commonly held to be typical of early Paleoindian populations. Whether Paleoindian or not, the Whitewater Cache adds another datapoint to the chronologically challenged attempts to link biface caching to mobility and raw material economies among prehistoric North American foragers.

Segura Llanos, Rafael (Universidad Antonio Ruiz de Montoya)

[195] *The Andean Urban Center of Cajamarquilla: Environmental and Occupational Dynamics*

The Central Andes saw a long and complex development of prehistoric urban life. Although considerable progress has been made in understanding this process, our assessment is still very fragmentary due to the lack of key data on centers that appear to have been pivotal at the regional scale. In this paper, I examine Cajamarquilla, a site (>100 ha) on the Peruvian central coast, distinguished by a major irrigation and vast underground storage system and repeatedly cited in the discussions on the Middle Horizon (AD 600–1000) and Late Intermediate period (AD 1000–1476). Until recently, however, such considerations were based without well-defined chronology of its main occupations and a multidisciplinary reconstruction of the local environmental conditions that framed its development and decline. We discuss two major outcomes of our 2012–2015 fieldwork at the site: the implications of a new set of radiocarbon dates and their provenance and the results of our environmentally oriented geomorphological survey and paleobotanical analysis. Together, they allow us to reexamine the relationship between urban evolution at Cajamarquilla and the social and biophysical dynamics that occurred during the last 1,000 years preceding the European conquest.

Segura Llanos, Rafael [119] see Shimada, Izumi

Seidemann, Ryan (Water Institute), and Christine Halling (University of New Orleans)

[232] *Climate Change and the Dead: Interactions between Climate Reality and the Section 106 Process When Caskets Float*

Federal agencies are mandated to follow the National Historic Preservation Act's Section 106 process when undertaking or funding projects that have the potential to impact certain historic sites or structures. These mandates have run headlong into the reality of cemetery damage from recent, increasingly devastating storms and other impacts of climate change. Between 2020 and 2021, Louisiana experienced damage to nearly 4,000 graves from Hurricanes Laura, Delta, and Ida. Some of this damage occurred in operating cemeteries that were not subject to Section 106. However, much of the damage occurred in cemeteries likely subject to Section 106. Navigating community needs for closure when their dead are disrupted and federal mandates for Section 106 compliance is difficult and sensitive when people's loved ones are impacted. As climate change increases the incidence of severe weather events that will damage cemeteries, navigating these complexities will extend far beyond Louisiana. In this presentation, we review the existing methods for dealing with Section 106 compliance and we suggest programmatic changes by the Advisory Council on Historic Preservation that account for the need to rapidly and inexpensively respond to cemetery impacts resulting from disasters.

Seidemann, Ryan [75] see Garcia-Putnam, Alex

Seidemann, Ryan [237] see Halling, Christine

Seitsonen, Oula [103] see Houle, Jean-Luc

Seitsonen, Oula [223] see Nishida, Talia

Seki, Yuji (National Museum of Ethnology), Juan Pablo Villanueva Hidalgo (Universidad Nacional Mayor de San Marcos), and Daniel Morales Chocano (Universidad Nacional Mayor de San Marcos)

[282] *Twenty Years of the Pacopampa Archaeological Project: Chronology and Social Change*

The Pacopampa Archaeological Project was initiated in 2005 through an academic agreement between the National Museum of Ethnology in Japan and the Universidad Nacional Mayor de San Marcos in Peru. Pacopampa is a huge ceremonial center of the Formative period in Chota Province, Cajamarca Region, 2,500 m asl. It consists of a three-tiered platform supported by retaining walls, built on a natural ridge, and covers an area of about 4 ha. The site was excavated in 1939 by Rafael Larco Hoyle, and then by various archaeologists from the Universidad Nacional Mayor de San Marcos. Each of them presented a chronology of the site respectively. Our project has newly established the chronology into Phase I (1200–700 BC, Middle Formative) and Phase II (700–400 BC, Late Formative), and we also clarified the activities that took place before and after these phases. Over the past two decades, we have identified complex architectural overlays, discovered elite tombs, and worked to understand Formative period society from a broad perspective. This presentation will discuss the transformation of society through architecture.

Seki, Yuji [282] see Arata, Megumi

Seki, Yuji [282] see Nakagawa, Nagisa

Seki, Yuji [282] see Sakai, Masato

Seki, Yuji [282] see Takigami, Mai

Seki, Yuji [282] see Uzawa, Kazuhiro

Seki, Yuji [282] see Villanueva Hidalgo, Juan Pablo

Sellers, Ian [240] see Letham, Bryn

Sellet, Frederic (University of Kansas), and Justin Garnett

[191] *Folsom Tool Kits and Retooling Activities at the Lindenmeier Site, Colorado*

This paper investigates the archaeological signature of retooling at the Lindenmeier site. A series of exhausted or broken Folsom projectile points cluster spatially and identify discrete activity areas related to

weaponry replacement. We analyzed the spatial distribution as well as the composition of these clusters to assess the degree of exhaustion of the tool kits at the time of their rejection. Because the manufacture of Folsom points leaves a very distinctive archaeological signature, we then used the channel flakes and preforms found within the clusters to reconstruct the number of weapon tips that were manufactured to replace the old ones. All in all, the study informs on the decision-making process of individual Folsom hunters and hints at how they maintained their tool kits.

Seltzer-Rogers, Heather (Chronicle Heritage), and Jakob Sedig

[68] *Ceramic Analysis of the Late Pithouse Component at the Black Mountain Ruin Site (LA 49) in Southwestern New Mexico*

Black Mountain is one of the largest villages in the southern Mimbres valley of southwestern New Mexico and the type site for the Postclassic period (AD 1130–1450) Black Mountain phase (AD 1130–1300). In 2023, Chronicle Heritage conducted limited data recovery excavations for a compliance-based project at the Black Mountain site (LA 49). Materials from Chronicle Heritage's work date to the Late Pithouse through Classic Mimbres period components (AD 550–1130), unlike prior investigations at the site that recovered primarily Black Mountain phase artifacts. Chronicle Heritage encountered and excavated a series of features, including structures and extramural pits, and recovered nearly 20,000 artifacts, including over 6,200 pottery sherds. This poster summarizes Chronicle Heritage's work at the site and presents key findings from the pottery analysis. Results from pottery analysis are compared to data from contemporary sites in the southern Mimbres valley and Deming Plain to elucidate the site's occupational history and examine larger patterns of cultural transformation that occurred in the Mimbres region during this time.

Seltzer-Rogers, Thatcher (Office of Archaeological Studies)

[326] *The Pendleton Ruin Site Revisited: Results from a Complete Reanalysis of the Ceramic Artifacts from the Pendleton Ruin Site, Southwestern New Mexico*

Archaeological investigations in the International Four Corners area (where the modern states of Arizona, New Mexico, Sonora, and Chihuahua meet) have long identified markers of northwest Chihuahuan influence north of the border, primarily through the presence of Casas Grandes polychrome types on late prehispanic sites which many argue to be in a past frontier zone. An early investigation aimed at this was conducted by the Peabody Museum of Archaeology and Ethnology in October 1933 by A. V. Kidder and the Cosgroves at the Pendleton Ruin site in far southwestern New Mexico. The results, published in 1949, remained mostly inconclusive as to the extent of the relationship between the local inhabitants and those farther south. A partial reanalysis of the ceramic assemblages and the notes by John Douglas offered further insight. As part of a larger project, I reanalyzed the entire ceramic collection from the site, resulting in identification of several changes from earlier interpretations. In this talk, I situate the results of the ceramic analysis both in terms of what they inform us about life and exchange in a cultural borderland at the Pendleton Ruin site but also with respect to major nearby sites.

Seminario, Linda (Heritage Consultants LLC)

[337] *Applications of Black Feminist Theory to Archaeobotanical Analysis: A Case Study of Belle Grove's Enslaved Quarters*

The contributions of enslaved African Americans to local formal economies have often gone unrecognized in previous historical and archaeological research; this is especially true concerning the actions of enslaved women. Black Feminist Theory allows researchers to consider the ways that Black women viewed and affected the world around them. This paper analyzes a macrobotanical assemblage recovered from Belle Grove Plantation's nineteenth-century enslaved quarters through a Black Feminist lens to explore how the archaeobotanical record can reflect the actions that enslaved women took when producing domestic goods and the ways this production contributed to the overall economy of the Shenandoah Valley of Virginia. In addition, this analysis considers the ways participation in the economy granted individuals agency as an avenue toward self-emancipation.

Semon, Anna (American Museum of Natural History)

[88] *Photogrammetry of Shell Deposits at the Musgrove Shell Ring (9LI2169) on St. Catherines Island, Georgia*
Late Archaic shell rings in the southeastern United States have unique depositional histories and site

formations. One way to explore these shell deposits is to conduct photogrammetric analysis on shell stratigraphy. In this poster, I present the photogrammetry methods and preliminary results conducted on shell wall profiles at the Musgrove Shell Ring on St. Catherines Island, Georgia. The results help visualize depositional events at the Musgrove Shell Ring and allow for a comparison of depositional histories with the two additional Late Archaic shell rings on St. Catherines Island.

Sen Roy, Shouraseni [233] see Pestle, William

Seowtewa, Octavius (Zuni Pueblo)

[43] *The Importance of Zuni Perspectives and Presence in Archaeological Research and Landscape Studies in the American Southwest*

The Zuni ancestral homeland extends across the American Southwest, into Mesoamerica, and beyond. For generations, Ashiwi, or Zuni ancestors, became acquainted with the land and its elements, relying on Mother Earth to provide them with food, shelter, and the tools needed to survive, both physically and spiritually. The Creator guided the Ashiwi, and they reciprocated his generosity and trust in humanity with their ceremonies and commitment to Earth stewardship. Zuni people today are the heirs of their ancestors' knowledge, hard work, and faith, and they draw on lessons from the past to preserve and maintain their culture and heritage. Because of this, Zuni people hold unique perspectives about archaeological sites and materials, which are the memory pieces of their past, and about the landscapes and landforms where their ancestors once lived. Thus, Zuni participation in archaeological research and cultural resource management is not only essential in painting a more complete and meaningful picture of history and land use in the Zuni ancestral homeland but also a way for generations of Ashiwi people that came before to be honored and acknowledged.

Seowtewa, Octavius [362] see Bellorado, Benjamin

Seowtewa, Octavius [362] see Yaquinto, Jessica

Sepúlveda, Marcela [174] see Romero Villanueva, Guadalupe

Serafin, Stanley (University of New South Wales), Bradley Russell (University at Albany SUNY), Eunice Uc González (Centro INAH-Yucatán), Timothy Hare, and Richard George II (University of California, Santa Barbara)

[104] *Crossing the Watery Threshold: Multidisciplinary Investigation of Funerary Cenote Use among the Postclassic Maya of Mayapan*

Cenotes are prominent features of the landscape of the Yucatán Peninsula. Among Maya populations, cenotes served, and continue to serve, varied purposes. Mayapan, a regional Postclassic (ca. AD 1150–1450) Maya capital and urban center on the northwestern plains of the Yucatán Peninsula, contains a large number of cenotes, which may have been a factor in its initial settlement. Over 40 cenotes have been investigated by archaeologists within the walled boundary of Mayapan, while additional examples have been identified in the site's footprint that extended beyond its walls. In this presentation, we explore the functions of two enigmatic cenotes that stand out for the presence of large quantities of submerged human skeletal remains. We examine the results of underwater survey, local settlement patterns, and associated material culture in the vicinities of these two cenotes, as well as data from the remains themselves, including osteology, radiocarbon dates, paleodiet, and geographic origin. We integrate archaeological and bioarchaeological evidence to reconstruct the identities of the ancestors who were selected for placement here. We situate this evidence in the broader site and regional context and discuss the significance of these two cenotes to contemporary populations. *****This presentation will include images of human remains.**

Sewnath, Neeka, Robert Guralnick (Florida Museum of Natural History), Camilla Speller (University of British Columbia), Erin Thornton (Washington State University), and Kitty Emery (Florida Museum, University of Florida)

[376] *Genomic Analyses Reveal Direct Descent of Mexican Heritage Turkeys from Wild Ancestors*

Modern domesticated and commercial turkeys trace their origins to an as-yet unidentified wild turkey subspecies in Mesoamerica. Understanding whether current Mexican heritage turkeys are direct descendants

of these original wild populations or if they have been cross-bred with other domesticated lines is crucial to unraveling the domestication process. In this study, we analyzed 14 heritage samples from Yucatán, Oaxaca, and central Mexico, alongside 18 historic wild specimens and 25 American heritage and commercial turkey samples. Our findings indicate no evidence of cross-breeding between Mexican heritage turkeys and other domesticated variants. Although we cannot distinguish genomically between the subspecies *Meleagris gallopavo intermedia* and *Meleagris gallopavo gallopavo*, we can likely exclude *Meleagris gallopavo gouldii* as a progenitor heritage breeds. Furthermore, our results suggest genetic structure across regions, with Yucatán and central Mexican heritage breeds maintaining distinct genetic identities. These insights not only deepen our understanding of the domestication process but also provide critical context for integrating archaeogenomic data. This integration can potentially pinpoint the precise timing and locations where domestication processes may have begun.

Sghinolfi, Amedeo [189] see Mullins, Patrick

Shackley, M. Steven

[98] *Laboratory XRF, Clovis/Folsom Obsidian Procurement, and the Reconstruction of Paleoindian Procurement Ranges: 40 Years of My Collaboration with Bruce B. Huckell*

For 40 years my laboratory has been providing X-ray fluorescence (XRF) analyses to Bruce Huckell and his graduate students since we first met when we were both in graduate school (UA and ASU). This has included various rock types including hydrothermally altered rhyolite (Socorro “Jasper”), but most especially Paleoindian through Archaic period obsidian. Additionally, Bruce helped me collect, map, and record a number of obsidian sources and secondary deposit sources in the Southwest, mainly in New Mexico. This all gave Bruce a rather unique insight into the types of appropriate questions to pose that obsidian source provenance can potentially answer. Most central here, and much of the focus in this paper, is the reconstruction of Clovis and Folsom procurement ranges based on obsidian source provenance. And one of the most vexing questions that has arisen is why so much obsidian from western Mogollon-Datil Volcanic Province obsidian in Middle Rio Grande Clovis contexts—Mule Creek and Cow Canyon sources? While we discussed this a number of times, we arrived at no satisfying answers. Here I will advance a number of inferences as to why obsidian from this, and some other regions, were so sought after by Clovis and Folsom knappers.

Shackley, M. Steven [326] see Franklin, Jay

Shady Solis, Ruth [195] see Valqui Güimack, Miguel

Shaffer, Gabby

[61] *Pottery from Prasat Baset, Cambodia: Preliminary Results from a Study of Earthenware Ceramic Vessels and Rim Forms*

This paper will present results from a study of earthenware vessels and rim forms dating to the Pre-Angkorian and Angkor periods (sixth to fifteenth century CE) from the site of Prasat Baset, Cambodia. This provincial site is unique in having a long occupation history that pre-dated the beginning of the Angkor Empire. Earthenware makes up the majority of the ceramics assemblage and was important for a variety of daily life activities yet has historically been studied less than Angkorian stonewares. Earthenware vessels and rims were sorted by composition and decoration, measured, and drawn for comparison within the collection. The findings will contribute to understanding the range of earthenware vessels at Baset, their possible function, and address questions about transitions within households from the Pre-Angkor to Angkor period in provincial Cambodia.

Shanahan, Tim [215] see Fleming, Elijah

Shanahan, Timothy [160] see Keenan Early, Erin

Shang, Xiaozheng (Yale University), Lily Jackson (Yale University), James McGrath, Guilhem Mauran (University of Bordeaux, France), and Potiphar Kaliba (Malawi Department of Museums and Monuments)

[69] *Characteristics and Changes in Ochres from Late Middle Stone Age to Early Holocene Northern Malawi*

Ochre sensu lato is considered to be one of the earliest evidence of human cognition and culture due to its raw materials diversity, its significance in raw materials processing, and its large panel of uses. However, there are little data from central Africa on the use of ochre in cultural systems during the terminal Pleistocene and Holocene. As part of the Malawi Ancient Lifeways and Peoples Project (MALAPP), we characterize archaeological ochres collected from five northern Malawian sites to understand changes in ochre selection, processing, and usage across the last ~30,000 years. We employ color analysis, semi-quantitative elemental analysis (pXRF), and qualitative analysis of physical traits and modification patterns in combination with innovative experiments in paleomagnetism and geological typology to investigate patterns of ochre sourcing and utilization. By connecting our studies with residual data from stone tools and potentially rock art, we aim to expand on understandings of the role ochres played in local social networks and its meaning within these ancient communities.

Sharma, Sukanya [171] see Ford, Anabel

Sharon, Gonen [56] see Cristiani, Emanuela

Sharp, Kayeleigh (Southern Illinois University, Carbondale)

[374] *The Northern Gallinazo: Revealing a Neglected Metallurgical Powerhouse of Peru's North Coast*

The Gallinazo ethnic polity, as a whole, has rarely been studied. Since the time of Rafael Larco Hoyle and Wendell Bennett, when the southern Gallinazo pottery style (today known as Virú) was first recorded in the Chicama and Virú valleys, archaeological works have focused primarily on a limited range of Gallinazo pottery vessels from elite burials and urban contexts. Resultantly, they have rarely been considered a metallurgically important entity along Peru's north coast. Evidence from the Lambayeque region, however, tells quite a different story. From their monumental constructions, religious and funerary practices, to their durable and consistent pottery stylistic tradition, close association with mining loci and widespread metallurgical remains, the Northern Gallinazo are distinct from their regional counterparts. New work at the Gallinazo-affiliated sites of Huaca Letrada in La Leche, and Songoy-Cojal in Zaña Valleys, sheds new light into the long tradition of Andean metallurgy as it relates to the Northern Gallinazo and to their relations with other groups like the Mochica. In this paper, we argue that the Northern Gallinazo of the Lambayeque area constitute a key participant in the archaeometallurgical tradition of the Peruvian north coast during the first millennium.

Sharpe, Ashley (Smithsonian Tropical Research Institute)

[169] *Ceremonial Fauna from the Holmul Region*

The large site of Holmul and its neighboring centers lay at the heart of the lowland Maya region and were together involved in related ceremonial activities throughout the Preclassic and Classic periods. This paper reviews 24 years of excavated fauna from the Holmul region, with a focus on animals found associated with ceremonial contexts. The faunal record from this region includes bones, shells, and coral, all of which hint at performances that involved animals in one form or another, alive or dead. Animals were not only sacrificial offerings but also provided materials for clothing, tools, and ceremonial equipment such as musical instruments, decorative fans, and paint pots. The Holmul fauna shares strong temporal continuity with trends that came and went throughout parts of the broader Maya region, such as the caching of *Spondylus* oysters with cinnabar and the use of tessellated shells to form intricate mosaics on costumes. However, it also contains a few unique specimens, such as a bezoar offering from a deer's stomach and a mantle of drilled terrestrial snails in a human burial. The plethora of animals from the Holmul region provide windows into the complexity of Maya ceremonial displays over time.

Sharpe, Ashley [166] see Holst, Irene

Sharpe, Ashley [118] see MacLellan, Jessica

Sharratt, Nicola (Georgia State University)

[333] *Care in Crisis, Crisis as Care: A Comparative, Multiscalar Archaeology of Care in Periods of Sociopolitical Disruption*

If sites, practitioners, and structures of care are embedded in power dynamics, how are those components of care systems transformed when established power dynamics are radically disrupted? Drawing on the substantial comparative archaeological literature that has been published in recent decades on processes and periods often glossed as “post-collapse,” I identify commonalities and divergences in the practice and the distribution of care in the wake of political fragmentation. I then focus in depth on a case study associated with the transformation of the Tiwanaku polity in the south-central Andes circa 1000 CE. Adopting a multiscalar and diachronic approach, I examine shifts in individual, community, and inter-community care over 400 years among descendants of Tiwanaku affiliated populations in the Moquegua Valley. I explore the ways in which material and nonhuman actors were both embedded in and constitutive of pre- and post-“collapse” ecologies of support. Finally, following Duclos and Sánchez Criado’s call to trouble the care concept, I propose that beyond understanding care as a system of elements that was impacted by political fragmentation, crisis and “collapse” might collectively be reconceptualized as a form of care in the Moquegua Valley post-1000 CE.

Sharratt, Nicola [323] see Axume, Denise

Shaver, Douglas (Burns & McDonnell)

[94] *Identifying Land Grants of Choctaw Individuals who Remained in Mississippi after the 1831 Treaty of Dancing Rabbit Creek Removal: A Case Study in the Ha-Ta-Na and Yokatubbee Land Grants in Lowndes County, Mississippi*
Identifying the locations of Choctaw Land Grants from the 1831 Treaty of Dancing Rabbit Creek is challenging due to limited and hard-to-obtain historical data. In Mississippi, archaeological sites linked to these grants are considered endangered and are automatically eligible for the National Register of Historic Places. In support of permitting for a large solar facility, the locations of two land grants issued to Choctaw individuals, Ha-Ta-Na and Yokatubbee, were successfully identified and documented through a combination of archival research, historic map reviews, interviews, and archaeological surveys.

Shaw, Justine (College of the Redwoods)

[333] *Sweating in the Old Days: An Elite Maya Sweatbath’s Functions and Meanings*

During the Terminal Classic, a monumental sweatbath was constructed at the site of Yo’okop directly adjacent to the site’s primary water source, an *aguada*. Built of cut stones with multiple plaster floors, a stone vaulted ceiling, a U-shaped bench arrangement, a dedicatory cache, and a position in the core of the site, it is reasonable to hypothesize that its use would have been reserved for select individuals. The sweatbath, along with the *aguada*, would have permitted elites with a means to cleanse and purify themselves, as well as perhaps marking a claim to a critical resource during such a dry period. While commoners were likely barred from its use, they may have replicated this behavior using more ephemeral structures. The functions of the monumental sweatbath likely went beyond mere cleansing, representing concepts as a sacred cave or symbolic womb and the ritual conducted in it arguably aimed at benefiting the wider public. In the end, however, the sweatbath was destroyed, with its vault brought down upon a termination deposit. While it is not known if the culprits were foreign or domestic, its targeting implies that the significance of the sweatbath went well beyond mere bathing.

Shaw, Victoria [94] see Kepka, Jessica

Sheehy, James (Penn State University; Juniata College)

[106] *Ritual and Cosmovision in Two Chicomoztoc Cave Complexes in the Barranca de Aguila, Central Puebla, Mexico*

The 1994–1998 Proyecto Acatzingo-Tepeaca survey in central Puebla found caves dating from Formative through Postclassic periods, several still used for ritual activities. Two cave complexes, C1 and C2, lie near an underground water source discharging into the Barranca de Aguila. Each cave complex served as a Chicomoztoc for nearby communities. Local leaders used the cave complexes as ritual arenas to legitimate

community identity, land ownership and political rule. The C1 complex rests in the Barranca near the Formative period site of Xochiltanango, 500 m to the east. The C2 cave complex, 100 m west of the C1 caves, is associated with the Postclassic Mixtec-Popoluca community of Oxtotipan, sited on the mesa above the C2 complex. Ritual activity in the latter increased in the Postclassic period as that in the C1 complex declined. The symbolism of surface architecture, cave rock carvings and funerary materials, plus their directional placement, offers evidence to create a model of the ancient cosmovision in the Barranca de Aguila.

Sheets, Payson (University of Colorado)

[335] *A Day in the Life of the Diviner in Joya de Ceren*

Structure 12 at Joya de Ceren was dedicated to divination. The extraordinary preservation, and emergency evacuation of the village, left the diviner's supernatural tool kit and other materials in their original locations. That provides an almost ethnographic opportunity to reconstruct the diviner's interactions with a client and the process of conducting the divination. The gifts left for services rendered were female-associated, such as spindle whorls and food processing tools, hence my assumption of gender. She entered her structure by opening a double-thick pole door only 90 cm high and crawling in, symbolic of entering a different domain. She discussed the issue with her client through a lattice window in the front wall. If they agreed, she turned and went to a niche under a bench to her supernatural tool kit. She would grab beans or minerals to cast in the divination. She would step up into two more innermost rooms to the large back room to do her casting. After "reading" the pattern, she would give her results through another lattice window. Because of the differential elevations, her client would receive her words from above. The divination was complete.

Sheffield, Justin [173] see Sear, David

Shemer, Maayan, Elisabetta Boaretto, and Ofer Marder

[384] *Tracing Cultural Connections in the Levantine Upper Paleolithic: The Case of the Levantine Aurignacian*

Since its first definition in the early twentieth century, the Levantine Aurignacian has been closely associated with the Aurignacian technocomplex of Western Europe, based on close similarities in the guiding fossils retrieved from both regions. Their distinction compared to the local archaeological record further stressed this association. Therefore, the Levantine Aurignacian is considered one of the earliest clear indications of the diffusions of small groups, traditions, and ideas from Europe to the Levant. However, many aspects remained vague, such as the correlation to a specific phase in West European Aurignacian, and what happened to these traditions after arriving in the Levant. This paper presents a study based primarily on the comparative analyses of flint industries that tested the theory of a local adaptation of the Levantine Aurignacian and its potential development into Levantine cultural entities (Arkov-Divshon and Atlitian). Considered together with other components of the material culture such as bone, antler, and shell artifacts, and with high-resolution radiocarbon dating, we suggest low plausibility for this scenario. In addition, we correlate the Levantine Aurignacian with the late Early/Middle Aurignacian of West Europe, suggesting that the dispersal into the Levant occurred shortly before the establishment of the Late Aurignacian industries there.

Shen, Jie

[44] *Worked Bone Technology in Prehistorical Sedentary Lives in China*

Worked bone technology played a crucial role in the productive activities, social dynamics, and technological development of prehistoric sedentary societies. This research integrates use-wear analysis, residue analysis, and experimental archaeology to investigate the acquisition of raw materials, as well as the production and use of bone artifacts in sedentary societies during Early and Middle Neolithic periods, when bone artifacts were widely employed as hunting-and-gathering tools, processing tools, ornaments, and ritual objects. The findings reveal the technological choices, traditions, and innovations that shaped worked bone technology during the Early and Middle Neolithic in China. Additionally, this study highlights the significant role that bone crafting played in the formation and transformation of social structures, particularly through its impact on food production and other crafts, such as leather and textile manufacturing.

Shepard, Sarah (Arkansas Archeological Survey), and Laura Bryant (Gilcrease Museum)

[186] *Repatriating Together: Reconciling Split and Shared Collections*

Intentional and thorough NAGPRA efforts illustrate the prevalence of archaeological material removed from the same sites, and even from the same excavation events, that is now scattered among institutions. Provenance research and communicating with state archaeological surveys or organizations can reveal collecting and excavation practices and networks that connect separated and sometimes unknown materials. When institutions do not take these steps, these split and shared collections often lead to incomplete repatriations and reburials. This perpetuates trauma and creates undue workloads for tribes to identify these collections on their own. Gilcrease Museum and the Arkansas Archeological Survey recently identified the presence of split and shared legacy collections between the two institutions. Consultation with the Caddo Nation followed soon after the realization, and a plan was made to move forward. Uniting these collections is of the upmost importance to the Caddo Nation. All parties are committed to working closely together toward repatriation and restoring the individuals with their belongings. This involves determining and attempting to reconcile the complications of these legacy collections, using networks to find other possible related collections, and acknowledging the cultural impact to the Caddo Nation.

Shepard, Sarah [33] see Rathgaber, Michelle

Sheptak, Rus (University of California, Berkeley)**[201] *African Diaspora Histories in Central America: The Case of Omoa, Honduras***

In the mid-eighteenth century, Spanish colonial authorities in Central America initiated the construction of a fortress on the Honduran Caribbean Coast, at a place bearing the Indigenous name of Omoa. The construction of the fort drew on the labor of a massive population of enslaved people from Africa, as well as conscripted labor from Indigenous communities in the immediate region. As the multi-decade construction of the fort and its staffing for defense continued, a thriving town grew up around it, in which the majority of the free population was recorded using terms in the racialized “casta” vocabulary indicating descent from African ancestors. By the 1790s, the town population also included a group of people of African descent called “Free Blacks,” people who had escaped slavery in neighboring enemy territory and thus received a degree of legal autonomy. Drawing on a variety of material evidence, this paper presents an understanding of the complexity of relations among different populations in the African diaspora living together in one town, including alliances between people of African descent and Indigenous people who lived for periods of time as laborers under the direction of the military commander.

Sheptak, Rus [201] see Joyce, Rosemary

Sheridan, Kelton (University of Texas, Austin)**[112] *The Materiality of Indigenous Persistence: Eighteenth-Century Bone-Tempered Pottery***

This paper shares findings and interpretations from my doctoral research centered on the persistence of Indigenous practice, as can be observed through the analysis of bone-tempered pottery from the eighteenth-century sites of San Antonio missions and Rancho de las Cabras. Bone-tempered pottery is ubiquitous on archaeological sites throughout Central Texas. It is found on precolonial sites, at Spanish colonial missions, and it is even present at residential sites from the mid-nineteenth century. Yet making sense of this pottery that has been produced for so long and is present in so many contexts still presents a challenge. While archaeological analysis has been conducted on different components of this ceramic, there remains many questions to be answered about it.

Sherman, Clark [233] see Pestle, William

Sherman, Simon (Washington University in St. Louis)**[32] *Quantifying the Diversity of Projectile Point and Knife (PPK) Sources and Types at the Poverty Point Site (16WC5), Louisiana***

The Poverty Point site in northeastern Louisiana is notable for its concentration of local and exotic lithic materials. Advances in geoscientific methods, like nondestructive artifact sourcing, now enable accurate identification of material origins and movement. However, the first systematic chert sourcing program revealed

limitations in the comparative database's size and diversity, need for visual analysis as a second line of analysis, and the need for better classification methods and more robust statistical approaches for determining provenance. This paper highlights advancements since the pilot study. The site serves as a test case for examining the characteristics of projectile point types. By analyzing two or more Late Archaic period point types from a biased surface collection at the Poverty Point site, the study explores the range of variation in these bifacial tools. A principal components analysis was performed on 845 projectile points and/or knives initially categorized as Delhi, Epps, and Motley types to assess type variation. Additionally, convolutional neural networks, utilizing the *Keras* and *TensorFlow* packages in the R statistical environment, were used to identify potential new types originally not identified. Finally, paradigmatic classification and frequency seriation were applied to examine potential spatial variability across the site's eight sectors and six ridges.

Shield Chief Gover, Carlton (University of Kansas)

[186] *Navigating University Bureaucracy for NAGPRA Compliance: Developing a Collaborative Process in the Spirit of NAGPRA*

Navigating the complexities of university bureaucracy to ensure compliance with the Native American Graves Protection and Repatriation Act (NAGPRA) requires more than just legal adherence; it demands a collaborative process rooted in respect and partnership with Native American communities. This presentation explores the challenges and strategies for developing such a collaborative approach within academic institutions. By examining case studies and institutional experiences, this paper offers practical guidance for archaeologists, university administrators, and compliance officers to work together in the spirit of NAGPRA, fostering relationships that honor cultural heritage and advance repatriation efforts.

Shield Chief Gover, Carlton [189] see Cory, Mackenzie

Shimada, Izumi, George Olah (Australian National University), Pere Bover (University of Zaragoza, Spain), Rafael Segura Llanos (Universidad Antonio Ruiz de Montoya), and Bastien Llamas (University of Adelaide)

[119] *Prehispanic Feathers from Pachacamac, Peru: Cross-Disciplinary Insights*

Large and colorful bird feathers derived most from macaws and Amazon parrots (Psittaciformes: Arinae), offered not only striking appearances but more importantly communicated the religious and sociopolitical significance and prestige of prehispanic Peruvians who wore feather cloth mantles, head ornaments, and/or held shields and/or staffs with such decoration. Determination of their provenance, taxonomic identification, age, and mode and route of acquisition (including possible captive breeding), however, has commonly remained in the domain of speculation. For example, Amazonia has long been treated as an undifferentiated source of macaw feathers. We present key findings of our cross-disciplinary investigation of feathered ornaments that decorated the false heads of Late Intermediate period funerary bundles excavated in 2005 at the Max Uhle cemetery in front of the famed Painted Temple at Pachacamac, Peru. Our international team composed of zoologists and geneticists as well as archaeologists conducted AMS radiocarbon dating, aDNA, and isotopic (C, N) analyses of excavated feather samples. Additionally, landscape modeling based on resistance surfaces allowed us to propose possible modes and routes of feather acquisition. Overall, implications of our findings on the key issues identified above are discussed.

Shimelmitz, Ron (University of Haifa), and Mina Weinstein-Evron (Zinman Institute of Archaeology; University of Haifa)

[175] *Order in the Cave: Examining Resource Management in Basecamp Setting through the Tabun Cave Sequence, Israel*

Logistic mobility and basecamps crystallized in the Middle Pleistocene and became habitual, focusing mainly on caves. Among the basecamp's characteristics are the abundant resources consumed and accumulated, brought by its partners, including lithics. Reusing accumulated chert enables reducing efforts on its further procurement while shifting the conserved energy to augment other resource foraging—primarily plants and animals. Living, however, on the junk of “yesterday's” activities and that of former occupations within the confined space of the cave, coupled with the growing use of fire—a notable feature of basecamps—can reduce this prospect of chert exploitation. Thus, maximizing the potential of chert reuse necessitated

organization. As palimpsest often characterizes Middle Pleistocene sites camouflaging spatial patterns, we raise the hypothesis that on-site lithic resource-management will outcome in varying frequencies of burnt artifacts of different categories—namely, items with potential to be further reduced or recycled will be eschewed from fire. To examine this, we explore the late Lower Paleolithic layers of Tabun Cave, Israel, excavated by A. Jelinek, and demonstrate the differences between blanks, scrapers, hand axes, and cores. We further discuss the extent to which these changes reflect new approaches in resource organization.

Shimizu, Marina [282] see Arata, Megumi

Shimizu, Masaaki [282] see Arata, Megumi

Shingoitewa, LeRoy

[43] *Introduction to Tribal Engagement in the Twenty-First Century*

The meaningful involvement of Tribes in project development including archaeological mitigation planning and resulting research can be empowering for both tribal communities and archaeologists. The involvement of Tribes in the study of their own heritage is no longer optional in the twenty-first century, but this does not mean archaeology no longer matters. Tribal collaboration and engagement, even when formal government-to-government consultation is not mandated, helps archaeological research and is important to the social governance of development projects. This presentation explores the innovative strategies employed by Arizona and New Mexico's THPOs working in concert with Westland's Tribal Monitoring Program to provide a Native perspective during cultural and natural resources studies and to increase Tribal participation in the management of our shared story, land, and resources. This discussion also explores the collaborative history, purpose, development, and possibilities of a Tribal Monitoring Program within, and outside of, the Section 106 consultation process and best practices for working with Tribal Nations in a cultural resource management setting.

Shiratori, Yuko, and Timothy Pugh

[51] *From Palace to Council House: The Postclassic Cooperative Transition in Petén, Guatemala*

Classic Maya kings were often considered sacred and divine and at the top of the hierarchy of kingdoms. On monuments and decorated vessels, they were depicted as super-human beings, different from other members of society. The royal dynasties of Classic period Petén disappeared from the archaeological eye by the tenth century, and palaces were buried in forests. Nevertheless, the Spaniards described Maya nobility when they visited the Petén Lakes region from 1525 to 1697. The Postclassic Maya (AD 930–1525) of Petén depicted images of deities but not of monarchs. They also had a range of ceremonial buildings, the most common of which were temples, shrines, and open halls. Open halls seem to have been council houses, reflecting the more cooperative organization of the Postclassic period.

Shnaider, Svetlana [160] see Alekseitseva, Valentina

Sholts, Sabrina [26] see Lippert, Dorothy

Short, Laura (HDR), and Zack Overfield (HDR)

[298] *Preliminary Results at Turkey Peak: Exploring the Archaic and Late Precontact in North-Central Texas*

HDR is evaluating nine sites in support of Palo Pinto County Municipal Water District No. 1's Turkey Peak Reservoir project located immediately south of Palo Pinto Creek Reservoir in Palo Pinto County, Texas. Several of the sites (41PP377, 41PP387, 41PP388) are deep, stratified sites with multiple, well-defined occupational layers spanning the Mid-Archaic through Late Precontact periods. Other sites are less stratified but still have the potential for substantial data yield, such as 41PP378, a large occupation site with earth ovens scattered across the landscape. Similarly, based on geophysical survey, 41PP377 is likely to contain hundreds of potential thermal features across a diverse geomorphology. The project has the potential to contribute to our understanding of Archaic through Late Precontact lifeways along the Brazos River Valley, as the sites have produced charcoal for radiocarbon dates, faunal material, lithics, and fire-cracked rock features. This poster presents the preliminary results of the 2024 field season.

Shrader, Mason (Brown University), and M. Ali Akman (Brown University)**[287] *More than Social? A Meta-Analysis of Disability Theory in Bioarchaeology***

Within the last decade, disability theory has been increasingly applied to archaeological studies broadly and recently has seen a growing interest in bioarchaeology specifically. Through statistical analysis of metadata from the top international journals in bioarchaeology, this paper identifies trends in bioarchaeologists' engagement with the literature of disability studies. Preliminary results indicate that disability theory is most often engaged with among scholars from Anglophone countries. We suggest this is due to an ethnocentric bias toward Anglophone cultures within disability studies and discuss the implications of this bias on our understanding of disability in the archaeological record. Additionally, among the works which do engage with disability theory, citations are most frequently clustered around a limited range of texts and concepts—primarily referencing interactional models of disability along with care. We suggest that while these concepts are well suited for the biocultural approach bioarchaeology favors, the study of ancient disability would benefit from a wider engagement with disability theory. We conclude by discussing some potential avenues for further engagement, such as disabled agency and radical interdependence.

Shriver-Rice, Meryl (Rutgers University)**[241] *A Tuscan Tale: Investigating Changes in Landscape Use through Local Environmental Knowledge***

Building on its community-based mission, and goals to bridge cultural and ecological heritage across a deep time perspective, the Potentino Exploration Project (PXP) conducted community-based participatory research in the Seggiano basin (2023-2024). These ethnographic discussions (University of Cambridge's Participatory Research program) took place in local homes surrounding our archaeological excavation to facilitate intergenerational dialogue around environmental change. Two major focuses were (1) understanding historical ecology as experienced by members of the community and (2) communities' relationship to traditional agricultural practices through time. This study aims to bolster local heritage revitalization through documenting oral histories and local resilience strategies in the face of climate change. Our future work plans to expand to the surrounding communities of Seggiano to collect local environmental knowledge, document changes in landscape through time, and create a space for shared experiences of ecological change within intergenerational memory. This study of contemporary communities surrounding PXP's archaeological excavation is one of PXP's strategies to leverage academic resources to support the local community's well-being. The longer-term outcomes of this participatory research could provide crucial support for regional decision-makers regarding policies concerning biodiversity and sustainable agricultural practices that could offer communities climate impact-related relief and strengthened means of heritage preservation.

Shults, Ashley [321] see Welch, Nathan

Siegel, Peter (Montclair State University)**[377] *The History of Caribbean Archaeology from ca. 1930***

The history of Caribbean archaeology more or less follows the trajectory detailed by Willey and Sabloff (1980) in their review of Americanist archaeology with notable differences in timing. In this presentation, I will trace nearly 100 years of ideas, methods, and theory in Caribbean archaeology beginning ca. 1930. Beginning in the early twentieth century, major interests were in time-space systematics, classifying cultures and identifying culture areas based on geographic and frequency distributions of distinctive artifacts. Especially given the island arc of the West Indies stretching from northeastern South America to southeastern North America, archaeologists were interested in identifying mainland origins for the insular residents. In some respects, those early interests in time-space systematics, cultural classification, and origins are still pursued with important differences in emphasis, theoretical frameworks, and certainly methods. Research emphases began to shift in the 1960s to interests in ethnobiology, subsistence adaptations, and regional settlement patterns. By the mid-1980s, some archaeologists embarked on programs explicitly addressing the evolution of complex society and religious organization linking archaeological and ethnohistoric data. This historical trajectory of Caribbean archaeology has parallels with other regions, especially eastern North America and lowland South America.

Siliezar Martinez, Mariana [26] see Miller Wolf, Katie

Sillar, Bill (Institute of Archaeology, UCL)**[386]** *First and Last: Stone Quarrying at the Start and End of the Inka Empire*

The Queña Sondor andesite outcrop is 16 km to the north of Cusco at 4,300 m. Stone from here was first used to construct the Inka royal estate of Caquia Xaquixahuana (Juchuy Qosqo), associated with Viracocha Inka. Small blocks from here were also used in some of the earliest Inka andesite constructions in Cuzco (Cusicancha and Coricancha). At the quarry there is abundant evidence of stone working stretching over a 1 km ridge. The numerous cooling joints have resulted in large lumps of rock which the stoneworkers shaped without needing to excavate material from the bedrock. In one area there is a 30 m wide depression containing a spread of stone working debris with some quartzite hammerstones. Notably, there are over 100 finely worked large square and rectangular blocks, as well as some unusual shapes; these are evidence of a much later form of Inka stoneworking. As we have not found blocks of this size and shape from this quarry in any surviving Inka structures, we assume these were being prepared late in the Inka Empire for a building that was never constructed. This quarry provides unique opportunities to understand changes in the management of Inka stoneworking.

Sills, E. Cory (University of Texas, Tyler)**[283]** *Continuity and Change from the Classic to Late Postclassic: Perspectives from Placencia Lagoon, Belize*

The coastal area of Placencia Lagoon, Belize has long served as a vital economic resource. During the Late Classic period, the ancient Maya utilized the hyper-saline brackish water of the lagoon to produce salt, which was essential for their diet. The salt producers likely resided on Placencia Cay, trading salt with inland city centers experiencing population growth. The pottery used for salt making exhibited similar attributes to that from the Paynes Creek Salt Works, suggesting shared technological practices. By the Postclassic period, salt production had ceased, and Placencia Village was eventually established at the tip of Placencia Peninsula. Throughout occupation phases, the coastal Maya who lived in this area engaged in and benefited from maritime trade. In this paper, I will integrate data from the Placencia Lagoon sites into a GIS to analyze settlement patterns and their relationship to coastal resources. Additionally, the results of obsidian sourcing and pottery analysis will be interpreted in the context of a maritime economy. The location of sites surrounding the lagoon and on nearby cays enabled the coastal Placencia Maya to access nonlocal materials that integrated their communities into a broader economic network.

Sills, E. Cory [283] see Foster, Cheryl

Sills, E. Cory [283] see McKillop, Heather

Sills, E. Cory [283] see Meaux, Amanda

Silva, Rosicler (IGPA/PUC Goiás), Julio Cezar Rubin de Rubin (PUC Goiás, Brazil), Jordana Batista Barbosa (UNOESTE, Brazil), and Veronica Wesolowski (University of São Paulo)**[199]** *Natural Processes, Human Action, and Possibilities of Interpretation in GO-Ja-02 Archaeological Site, Serranópolis, Goiás, Brazil*

[WITHDRAWN]

Silva de la Mora, Flavio (University of Alabama Tuscaloosa)**[231]** *Activity Areas and Evidence of Crafting: The Study of a Late Classic Lithic Maya Workshop at Chinikihá, Chiapas, Mexico*

Recent research in the Maya Lowlands, particularly in Chiapas and Tabasco, has shed new light on the regional patterns and social practices of Late Classic Maya society. This presentation will build on these findings by delving into the lithic materials unearthed from archaeological work at the site of Chinikihá. The focus will be on the significance of identifying and analyzing activity areas and associated lithic materials within a commoner architectural context. The objective of this study is to enhance our understanding of lithic crafting technologies and the daily lives of these communities. We will provide a thorough overview of the results derived from analyzing lithic materials found in a workshop setting. This research employs a dual methodology: mass debitage analysis and attribute analysis of the lithic artifacts. By examining these materials, the study underscores the role of lithic analysis in elucidating stone tool technology, raw material access, social practices, and the roles of crafting and learning in Maya communities of practice.

Silverman, Danielle (University of Illinois, Chicago)

[333] *State “Care” or Mere Oversight? Evaluating the Effectiveness of Top-Down Support for Pilgrims during the Angkorian Period*

The ethically loaded conception of “care” has been approached in myriad fields as a form of “duty,” the product of interdependency or close personal relationships, or even as a moral disposition to the needs of others. Introducing this concept into the field of archaeology, we can break “care” down into its tripartite structure of (1) the caregiver, (2) the receiver of care, and (3) the physical signatures of this dynamic. As archaeologists deal with the material record, this third aspect is pertinent, particularly when assessing care within a state-supported pilgrimage. Under the reign of Jayavarman VII (ca. 1122–1218 CE), inscriptions indicating the construction of 102 hospitals and 121 fire shrines across the Angkorian state have been interpreted as serving a top-down function. These charitable structures allowed the king to offer care to alleviate his kingdom’s suffering while channeling merit back to himself. During this period of increasing pilgrimage activity, it is necessary to challenge the uniformity of distribution and form of pilgrim infrastructure to better grasp the efficacy vs. performativity of state-imposed care. This paper will employ a framework of care within the context of pilgrimage infrastructure under the Angkorian period to assess and challenge traditional notions of state-imposed care.

Silvia, Zachary

[219] *Temperature Check! Aerial Thermography as a Complement to Geophysical Survey in Hellenistic Central Asia: A Case Study from the Bukhara Oasis, Uzbekistan*

This paper presents preliminary results of systematic aerial and geophysical survey in the Kyzylkum Desert, west of the Bukhara Oasis (Uzbekistan) from 2023 to 2024. Our work utilizes a combined approach of magnetometry, ground-penetrating radar, traditional panchromatic aerial photography, and aerial thermography to document land-use patterns of relict archaeological landscapes from the Late Bronze, Hellenistic, and Late Antique periods. To date little is known about the efficacy of standard remote sensing and archaeological geophysical technologies in the Kyzylkum’s most arid regions. Our work demonstrates that multiple, complementary technologies are needed to fully grasp the scale and typology of ancient land-use practices in this region. Emphasizing results from a relict Hellenistic landscape, this paper presents new data on hydrological infrastructure, production areas, habitations, hollow ways, and landscaping efforts west of the Bukhara Oasis, providing useful insights for our understanding of nondestructive approaches to Central Asian landscape archaeology.

Simbine, Celso [59] see Moffett, Abigail

Simeonoff, Sarah (University of Colorado, Boulder)

[110] *(Re)Examining Alutiiq Agency during Russian and American Colonization*

Archaeological notions of time are often categorized based on a modern perspective of the past, which can overemphasize contact with others or technological advancements (e.g., Classic/Postclassic or pre-/postcontact). This approach presents particular challenges for sites and resources occupied or used after significant interaction with colonial forces, as it can lead to an overemphasis on the colonizing culture (e.g., postcontact, Russian era, American era). In the Kodiak Archipelago of Alaska, this terminology has tended to flatten the historical narrative by diminishing the agency of Alutiiq people in their response to Russian colonialism. Classifying these sites as “Russian” or “American” period sites subsumes Alutiiq traditions and culture under those of others, downplaying the active role of Alutiiq people, who selectively adopted Russian and American culture and technology to meet their needs. Further, this emphasis serves to minimize the impact of Alutiiq knowledge and contributions to Russian/American survival and subsistence across the archipelago. This paper will examine concepts of archaeological time at the Alutiiq-Russian site of Eagle Harbor and offer ideas for (re)telling the story of colonial interaction through an Alutiiq lens.

Simmons, Alan (UNLV), and Renee Kolvet (Independent Researcher)

[60] *Ground Truth: How Residue and Other Paleobotanic Analyses Are Provoking New Interpretations on the Early Cypriot Neolithic*

Our understanding of the early settlement of Cyprus has changed dramatically over the past few decades.

We now know that people were on the island by at least the Epipaleolithic, and that the Neolithic, when Cyprus was permanently settled, is as old as on the mainland. Interdisciplinary research at the rare upland site of Ais Giorkis has revealed intriguing interpretations for the island's first permanent settlers. While the site is not a typical "village," it was intensively used on a seasonal basis. One aspect of our investigations was to conduct residue washes on ground stone artifacts. Such studies were previously uncommon in Cypriot archaeology. We expected these would reveal information on food processing. However, in addition to food processing, the residue studies provided intriguing data on other uses of ground stone, including processing potential medicinal plants, and there is limited but intriguing evidence for grape (wine?) usage. We discuss the results from Ais Giorkis and four additional Neolithic sites from different environments where comparative analyses were conducted. The positive results of these studies show the powerful explanatory nature of residue analysis and contribute to a more robust understanding of how Cyprus's first permanent settlers adapted to an unfamiliar environment.

Simmons, Alan [240] see Maher, Lisa

Simmons, Scott (University of North Carolina, Wilmington)

[283] *Island Time: Current Archaeological Research on Ambergris Caye, Belize*

As the largest island among hundreds of offshore islands, or "cayes," Ambergris Caye, Belize, was part of a network of coastal sites in Belize and Yucatán that together played a significant role in the economy of the ancient Maya. Yet despite the prominent role it played in Maya coastal trade, Ambergris Caye has been understudied from an archaeological perspective. However, this situation has changed in recent years. This paper presents some of the preliminary results of two current projects being conducted on the island—an archaeological investigation of the Late Postclassic San Pedro site, and an island-wide lidar survey project. Both projects have provided new insights into ancient Maya life on the island. Excavations at the San Pedro site have revealed characteristics of Late Postclassic Maya domestic construction, mortuary practices, and material culture, while the lidar survey has provided new information on Maya land-use practices on the island. Specifically, lidar survey has revealed the presence of a network of polygonal and linear features in the central and northern areas of the island that appear similar to the *albarradas* and other field wall features found in many parts of northern Yucatán. *****This presentation will include images of human remains.**

Simmons Jenkins, Glenda [99] see Miller, Sarah

Simon, Camille (Sorbonne Université), and Estela Martínez Mora (Instituto Nacional de Antropología e Historia)

[118] *Cultural and Social Identity in Tamtoc, San Luis Potosí: An Approach through Anthropomorphic Figurines Study*
The study of anthropomorphic ceramic figurines from Tamtoc in the Huasteca potosina provides information on the social identity of its population, through various ways of distinguishing and individualizing figures. The typology of headdresses and headgear offers a broad and plural panorama of the social attributes of identity. The iconographic diversity of ornaments and body modifications also reveals a complex and heterogeneous society. Figurines of hunchbacked figures, elderly subjects, pregnant women, and parturients bear witness to the diversity of these representations. The remains of polychrome paint on some specimens, as well as other surface decoration techniques, show the wide range of processes involved in their production. Furthermore, a diachronic study of the contexts in which these objects were found indicates an evolution in the areas in which they were used and deposited, from propitiatory contexts to their presence in domestic areas. The exclusively feminine characters of certain types of figurines from the Late Postclassic period (AD 1200–1521) also suggests an evolving field of activity for these figurines. *****This presentation will include images of human remains.**

Simon, Camille [118] see Martínez Mora, Estela

Simon, Katie, Winston Hurst, Jonathan Till (Edge of the Cedars State Park), William Lipe (Washington State University), and R. G. Matson (University of British Columbia)

[55] *Beyond Hillshade: Raster Methods for Distinguishing Chacoan, Historic, and Modern-Era Roads Signatures in Lidar, Cedar Mesa, Bears Ears National Monument, Utah*

Documentation of precontact and historic roads/trails can suffer from subjective identification criteria by the average archaeologist. This is due to frequently subtle physical expressions that compromise our ability to accurately map them with consistency and ultimately manage them. This presentation will review lidar data processing, analytics, and visualization methods employed in identifying and distinguishing between precontact, historic wagon, and modern road types of Cedar Mesa, Bears Ears National Monument, Utah. The research demonstrates the use of objective, quantifiable criteria in mapping road/trail segments as part of a collaboration in the search for Chacoan era “roads” of Cedar Mesa. These features are eroding at accelerating speeds, causing increased need for more rapid and accurate documentation. Can these methods better our management and preservation practices?

Simon, Rebecca

[340] *The Rubber Hit the Road, but How Do I Keep the Wheels Rolling? Staying Engaged in Public Archaeology and Outreach while Digging Deeper into Management and Compliance*

Cultural resource management, compliance, public archaeology, community-based research, collaborative archaeology, and many other subfields create numerous intersections and roundabouts. Some connect the entire country, and others make it safer for parents to drop off their kids at school in the morning. The Colorado Department of Transportation (CDOT) Cultural Resources team is a leader in creative mitigation and the collaborative processes centered on communities intricately connected to projects and creating much more than new sections of highway. High-profile projects of recent years provide hope for the future of transportation development and all the archaeology that goes along with it. The recent publication of *A Practitioner’s Guide to Public Archaeology: Intentional Programming for Effective Outreach* by Reetz and Sperling (2024) provides ideas and techniques for all sorts of programming, as well as community-based heritage management programs. One reality is that everyday tasks in compliance and management provide a variety of ways to engage with many “publics.” This paper follows the newest CDOT staff archaeologist walking the right-of-way and embracing individual moments as public archaeology.

Simonitis, Lauren [99] see Napora, Katharine

Simons, Robert [60] see Roberts, Ted

Simpson, Diana (Western Carolina University)

[343] *To Help and to Harm: Assisted Death, Trepanation, and Other Variations of Care in the Precontact Southeastern United States*

When considering the boundaries of care in the past a relativistic perspective forces us to reconsider what we perceive to be “normal.” This paper will explore how alternate realms of possible intervention and care manifest within the archaeological record of the early precontact US Southeast, specifically focusing on individuals from the Middle Tennessee River valley of Alabama. In particular, practices such as self-willed assisted death, infanticide, and trepanation have been argued to represent variations of “care” within these communities. Still, such actions in the past are more commonly associated with harmful behaviors or a societal pathology. Moving beyond the view of death as a static event allows for a consideration of how the practice of care might encompass a number of practices surrounding, following or even contributing to, the death of an individual. Considering the social and political controversy associated with topics like assisted death in the modern world, archaeological considerations of such practices are particularly relevant and timely. Still, such research must be approached cautiously with an awareness of the potential for controversy and sensationalization by a public audience. Priority must be given to ethical considerations and Indigenous perspectives to avoid unintentionally straining relationships with modern descendant communities.

Sinensky, R. J. (Crow Canyon Archaeological Center), and Stewart Koyiyumptewa (Hopi Tribe)

[274] *Early Agriculture and Community on the Southwestern Colorado Plateau*

To outsiders, the arid, sandy, and sparsely vegetated landscapes of the Hopi Mesas and the Petrified Forest—both located on the far southwestern portion of the Colorado Plateau—may seem like improbable settings for population-dense and long-lived farming communities. Yet, the traditional ecological knowledge held by early farmers allowed Hopi Ancestors to thrive in these regions for millennia and continue to provide youth with values core to Hopi identity—humility, hard work, and a focus on community. There is considerable evidence that both the Hopi Mesas and Petrified Forest hosted large communities of early farmers during a period spanning CE 200–850. In each region, early community centers were built on culturally significant and visually prominent landscape features overlooking arable lands suitable for Hopi-style sand-mulch farming. Ancestors in each region also integrated uniquely Hopi agricultural features into current and/or former residential spaces within both aggregated villages and dispersed hamlets. Unlike CE 550–850 communities in regions to the north and east, however, early farmers did not build great kivas, even at community centers. Our understanding of early agriculture and community during this era is informed by the perspectives of Hopi cultural advisers, the systematic documentation of ancient plants, and Crow Canyon’s Pueblo Farming Project.

Sinensky, R. J. [86] see Satterwhite, R. David

Singman-Aste, Lily (University of California, Santa Cruz), Lucia Bryan (University of California, Santa Cruz), Leonce Harison (Morombe Archaeological Project), François Ricky Justome Tsitohery (Morombe Archaeological Project), and Eréndira Quintana Morales (University of California, Santa Cruz)

[59] *Reefs and Relics: An Ichthyo-Archaeological Approach to Cultural and Environmental Conservation in Andavadoaka, Madagascar*

The village of Andavadoaka, located in the Morombe district of Befandefa in southwestern Madagascar, is home to the Vezo fishing people. The coral reefs around the area have been the focus of conservation efforts due to their high biodiversity as well as threats to the ecosystem. These threats negatively impact the Vezo, as the sea is their main source of subsistence and livelihood. The Morombe Archaeological Project aims to investigate the change in human-environment interactions over time in the context of the region’s history, as well as its relation to dynamic coastal ecosystems. The project combines archaeological work with conservation efforts in Morombe, studying both past and present human and environmental interactions. The project improves community-based archaeology through knowledge co-production and combines Traditional Ecological Knowledge with outside research and technology. Analysis is supported through the creation of an osteological fish reference collection of modern fish from the area, and part of the project has involved developing strategies to build and maintain the collection within the community. Archaeological work to reconstruct past ecosystems and environments through the analysis of fish bones explores differences in biodiversity, subsistence strategies, and technologies over time. This can help to inform current conservation efforts.

Singman-Aste, Lily [229] see Bryan, Lucia

Sion, Julien [239] see Dussol, Lydie

Sjodahl, Julia (Tulane University), Yuri Cavero Palomino (Universidad Nacional Mayor de San Marcos), Jason Nesbitt (Tulane University), MinJoo Choi (Tulane University), and Yuichi Matsumoto (National Museum of Ethnology)

[191] *Excavations at Arpiri, an Early Horizon (800–200 BCE) site in Huancasancos, Ayacucho, Peru*

The Huancasancos region in the south-central highlands of Ayacucho, Peru, is an archaeologically rich yet relatively understudied area. This poster will detail the results of excavation and material analysis from the Early Horizon (800–200 BCE) site of Arpiri, and the identification of a contemporaneous site, Qallopampa. The presence of Paracas and Nazca ceramics found alongside local wares at Arpiri implies continuous exchange with the southern coast spanning the Early Horizon into the Middle Horizon (ca. 650–1000 BCE). Other materials include a high quantity of lithic artifacts, which may be associated with the nearby Quispisisa obsidian quarry. This assemblage suggests that Arpiri and neighboring sites may have been involved in a

process of local obsidian lithic production exchanged with outside groups. Previous archaeological research indicates that Quispisisa obsidian was extensively circulated throughout the Early Horizon but to what extent local communities played in this process remains unclear.

Skaggs, Sheldon [89] see Sprock, Cody

Skalky, Eileen (California State University, Fullerton)

[218] *Impacts of AB 389 on the Field of California Archaeology*

The enactment of the California Native American Graves Protection and Repatriation Act (CalNAGPRA) in 2001 was ultimately engendered by a combination of rampant grave looting, public works projects, and university-based research in California's early history. When California became a state in 1850, a war of extermination was waged on the Native populations, wiping out 95% of all California Indians. In the late nineteenth century, "The Myth of the Vanishing Indian" was used to justify looting with wealthy figures like Phoebe Hearst and George Heye commissioning excavations all over the world to fill their museums. Public works projects throughout the years continued to add to the archaeological collections held at institutions until finally in 1990, the federal Native American Graves Protection and Repatriation Act (NAGPRA) was enacted. This law established a policy that required the repatriation of ancestral remains and cultural items to the affiliated federally recognized tribes. In 2001 CalNAGPRA was passed to include non-federally recognized tribes in the repatriation process. Due to the painstakingly slow repatriation of these items from the California State University system, AB 389 was introduced which prohibits the use of cultural items for research and teaching purposes. This research explores the impacts of this amendment.

Skinner, Alan [275] see Crawford, Dawn

Skinner, Dougless

[214] *We've Lived Here Since Time Immemorial: Traditional Cultural Places—Consultation, Investigation, and Evaluation for the Ambler Access Project in Interior Alaska*

This presentation outlines the Bureau of Land Management's (BLM) effort to consult, investigate, and evaluate traditional cultural places (TCP) for the Ambler Access Project. The Ambler Access Project is a proposed 211-mile industrial access road from the Dalton Highway to the Ambler Mining District in interior Alaska. The road is proposed to traverse completely undeveloped countryside in the southwestern Brooks Mountain Range and cross the homeland of the Upper Koyukon Dené, the Kuvvaunmiut Iñupiaq, and Nunamiut Iñupiaq. The BLM in collaboration with the State Historic Preservation Officer and consulting parties composed a Programmatic Agreement (PA) which held the identification and evaluation of TCPs to the same level of effort as archaeological and historic components. Armed with the PA, the BLM collaborated with multiple federally recognized tribes, developed an ethnographic resource management plan, and proposed a two-million-acre APE to account for TCPs. The aim of this presentation is to provide an example of an effort to identify cultural resources with Indigenous communities under Section 106 of the National Historic Preservation Act and to spark a conversation regarding the mechanisms the federal government can use to identify places of traditional cultural significance.

Skousen, Jacob

[102] *Sorting through Strata: Placemaking at Mormon-Era Nauvoo*

One of Timothy Pauketat's many contributions to the field of archaeology is his incorporation of theory into his work. For Tim, theory is not a thing, but the way one sees and approaches the world and actively generates unique narratives and histories in correspondence with archaeological data; thus, all worthwhile questions regarding human history are inherently theoretical. Tim taught and encouraged both his students and colleagues to embrace theory and to always recognize its primacy in reconstructions of the past. In this vein, I draw on the work of Gilles Deleuze and Felix Guattari, two of Tim's favorite theorists, to think about placemaking at Nauvoo, Illinois. Specifically, I adopt Deleuze and Guattari's concept of "strata" to consider how perceptions, ideas, objects, and landscapes intertwined to create the 1840s Mormon city at Nauvoo. I contend that then-prevalent Mormon perceptions of Native American ancestry, their interest in ancient midwestern Indigenous groups, and the presence of Native American sites and artifacts buried within the

strata of Nauvoo itself together created an aura of mystique that helped make Nauvoo a meaningful place to its Mormon residents.

Skousen, Jacob [102] see Watts Malouchos, Elizabeth

Skowronek, Russell (University of Texas Rio Grande Valley), Sarah Rowe (University of Texas Rio Grande Valley), Juan Gonzalez (University of Texas Rio Grande Valley), Carina Marques (University of Texas Rio Grande Valley), and Roseann Bacha-Garza

[243] *Going to the Dogs: Applying HHRD in the Rio Grande Valley of Texas*

Beginning in the fall of 2017 faculty, staff, and students affiliated with the Department of Anthropology, School of Earth Environment and Marine Science, and Community Historical Archaeology Project with Schools Program at the University of Texas Rio Grande Valley were aided in their cemetery research projects by the HHR Dogs of the Institute for Canine Forensics. These projects have included the (1) Hidalgo County Public Cemetery Project, which inventoried over 1,000 graves in a neglected public (pauper) cemetery where the ICF identified over 40 unmarked graves, confirming information collected from oral histories and ground-penetrating radar; (2) the investigation of the segregated African American Restlawn Cemetery in Edinburg, Texas, for unmarked graves; (3) the investigation of an African American ranch cemetery; and (4) the search for the grave of Private James Robison who was killed in action in August 1944 in France. Buried on the family farm in 1948, the grave was later “lost” when the family moved, and the new owner moved the headstone. Two surveys conducted by the ICF resulted in the identification of a potential grave site 50 m from the current location of the headstone. We present here a brief overview of these four projects.

Slater, Donald (Phillips Academy), and Christy Pottroff (Boston College)

[70] *Finding Anne Bradstreet: An Archaeological, Historical, and Literary Study of the Poet’s Seventeenth-Century (North) Andover, Massachusetts, Homes*

On the night of July 10, 1666, Anne Bradstreet was startled from sleep by her family’s screams: “FIRE! FIRE!” While everyone escaped the blaze, the house and their belongings were destroyed. Bradstreet later lamented this fateful night in her poem “Verses upon the Burning of our House,” which gave voice to her grief and catalogued what was lost, yet ultimately showed her Puritan trust in God’s will. Despite the tragedy, she and her husband, Simon, built a new home in Andover where she lived and wrote until her death in 1672. Anne Bradstreet was the first American author to publish a book of poetry, and Simon was one of the wealthiest merchants of his generation, a local judge, and later, governor of Massachusetts. For centuries, historians, archaeologists, and the curious public have sought to locate the remnants of the Bradstreets’ Andover homes. Using methods including dendrochronology, GPR, and dirt archaeology, we have discovered the remains of both Bradstreet houses—vestiges from the 1666 fire, as well as elements of the replacement home that still partially stands today. This paper will discuss recent discoveries, emerging interpretations, and plans for continued investigations and preservation at the site.

Slaughter, Michelle (SRI)

[276] *An Archaeological Assessment of the Russell Gulch Cemetery*

Several years ago, a colleague and I conducted an archaeological assessment of the Russell Gulch Cemetery in the mountains of Gilpin County, Colorado. This area housed a booming hard-rock mining industry in the late nineteenth and early twentieth centuries, but today, even though the area has few full-time residents, the cemetery is still a destination place for local tourists, history buffs, and families with relatives buried there. The Independent Order of Oddfellows established the cemetery in the last several decades of the nineteenth century. Over time, as residents moved away, the cemetery suffered from neglect, vandalism, and some of the cemetery’s records were lost. Our project was spearheaded by local community members who volunteered their time to clean overgrown vegetation from the cemetery and then worked alongside us as we recorded and documented the cemetery. Our goals were to collaboratively conduct archival and ethnographic research, comprehensively record the details of all graves—marked and unmarked—do limited GPR in an attempt to identify locations with either unmarked graves or space available for future interments, and have a professional survey crew map the cemetery. My paper highlights how enthusiastic volunteers and archaeologists can work side-by-side and accomplish meaningful things together.

Slaughter, Michelle [276] see Califano, Matthew

Slotten, Venicia (UC Berkeley)

[166] *Food and Plant Resources at Altar de Sacrificios*

Macrobotanical samples collected from Altar de Sacrificios that represent a range of time periods, from the Late Preclassic to the Terminal Classic, examine the linkage between the emergence of political elites and disparities in the quality of life in ancient Maya society. The archaeobotanical samples from various residential mounds reveal what changes in agricultural production accompany the political disruption that occurred at the site during the seventh century CE. The lush ecological setting, rural settlement patterning shown through survey and excavations, and key river access at the site suggests that Altar de Sacrificios may have been a major source of agricultural exports for the Maya civilization, producing both staple crops and other plant commodities.

Slotten, Venicia [239] see Cuellar, Andrea

Slusarska, Katarzyna (University of Szczecin/Poland), Joanna Rennwanz (Institute of Archeology and Ethnology PAN, Poland), Marcin Majewski (University of Szczecin), and Monika Ogiewa-Sejnota (Muzeum Archeologiczno-Historyczne w Stargardzie)

[333] *Eighteenth-Century Life after Apoplexy: A Case of an Eighteenth-Century Aristocrat from Pomerania/Poland*

In 2023, research and restoration work was carried out in the von Wedel family crypt in Bród, Poland. This crypt was built in the second half of the eighteenth century to serve as the final resting place for the aristocratic von Wedel family. Among the individuals identified, the remains of an elderly man stood out due to lesions observed in the glenoid fossa and proximal end of the right humerus, as well as signs of probable scurvy. The man was identified as Melchior Magnus von Wedel. According to written sources, he died in 1744, three years after suffering a stroke and subsequent paralysis. During these three years he was under medical care and rehabilitation. According to written sources, the care he received allowed him to make an almost complete recovery, except for the paralysis of his right arm. The combination of bioarchaeological perspective and in-depth historical source analysis of this case provides interesting insights into eighteenth-century medical care and the everyday care of patients with mobility problems but also contributes to the discussion on the archaeology of care. ***This presentation will include images of human remains.

Slusarska, Katarzyna [321] see Ramsier, Marissa

Smallwood, Ashley (University of Louisville), Bruce Huckell (University of New Mexico), David Kilby (Texas State University), Briggs Buchanan (University of Tulsa), and Lisa Huckell

[98] *Bifaces to Go (Again): Building on Huckell's Experimental Archaeology Legacy*

Bruce Huckell was a pioneer of experimental archaeology. His early work "Of Chipped Stone Tools, Elephants, and the Clovis Hunters" and "The Denver Elephant Project" demonstrated how actualistic experiments offer archaeologists powerful interpretative data for understanding Paleoindian technology and subsistence. This paper builds on a more recent experiment presented by Huckell and colleagues in 2002 entitled "Bifaces to Go: An Experimental Study of the Genesis of Transport Wear." To investigate the effects of long-distance transport on stone tool surfaces, Huckell and colleagues carried 16 experimental bifaces in packs across varied terrains for a total distance of 70 km. Here we review Huckell et al.'s original observations and present new high-power microwear results to help document the traces acquired as stone tools are carried great distances. We explore the patterns of transport wear traces and how they can be distinguished from use-wear.

Smallwood, Ashley [175] see Miller, D. Shane

Smeeks, Jessica (SUNY New Paltz), and Ryan Dougherty (United States Military Academy)

[157] *Quantifying Intentionality: Complex Network Analyses of Late Intermediate Period Communities in Ayacucho, Peru*

Co-residence, spatial proximity, and built environments affect and provide context for the patterning and frequency of repeated, meaningful interaction between social actors and groups. Site-level analyses, in particular, provide insights on intra-site dynamics or the daily practices of communal affiliation and

cooperation, as well as potential inequalities and hierarchies. In this research, we evaluate the intentionality of structure placement within Late Intermediate period (LIP; AD 1000–1450) communities of Ayacucho, Peru. Previous researchers hypothesize that minimal settlement planning was involved in the construction of LIP hilltop communities; they suggest terrain and close familial relationships were the only considerations in placing domestic residences. To test this hypothesis and quantify intentionality, we employ complex network analysis. More specifically, we evaluate the presence, absence, and density of inter-communal links and centrality of variable households, based on visibility and least cost movement.

Smelser, Noah (University of Missouri, Columbia), Jeffrey Ferguson (University of Missouri), and Jonathan Paige (University of Missouri)

[223] *Modeling the Distribution and Proportion of Obsidian among Archaeological Sites in the American Southwest Using a Multilevel Bayesian Model*

The presence of widely scattered and chemically distinct obsidian sources across much of the American Southwest has allowed archaeologists to explore obsidian movement and exchange patterns for many decades. Southwest obsidian is ideal for provenance research because it is a relatively simple cheap and accurate process to use ED-XRF to determine the geologic source of obsidian artifacts recovered from archaeological sites. Most studies examine the sources present in a single site or a small region to examine broader social and economic connections. Some ongoing research has attempted to synthesize data at the regional level using primarily network analysis, but we are attempting a new kind of synthesis incorporating a predictive multi-level Bayesian model based on source abundance and distance. The training data includes material from CYBERSW, across 198 archaeological sites, including 16,066 obsidian artifacts chemically matched to 27 different sources. The resulting predictions broadly match prior syntheses. In the future, model expectations will be compared to data from additional sites, and differences between the expected and observed data could illustrate past decisions based on cultural factors such as ethnic or political boundaries.

Smit, Douglas [216] see Linn, Sarah

Smith, Alexander Joel (SUNY Brockport)

[168] *Rural Abandonment in the American North: Archaeology at Frost Town, New York*

Frost Town is located in the Fingers Lakes Region of New York and was once home to an industrial logging site that harvested old-growth timber in the nineteenth century by Euro-American settler colonialists. Frost Town eventually became a rural town after the timber was harvested and was eventually abandoned in the 1910s and 1920s. Today, the area exhibits trails, nature centers, and scattered housing, rather than agricultural fields and logging stands. But Frost Town was never technically a town, just an unofficial name of a place that looms in the minds of people living in the surrounding landscape. The story of Frost Town is the story of many American rural places, where a town was established around an industry and then subsequently abandoned when that industry was no longer viable. This paper will discuss the manner in which Frost Town's rurality has been critically approached, asking how the site and the story of an abandoned logging-then-farming town can be seen as a bellwether of regional or even national sociopolitical dynamics. Finally, this paper asks how the identity surrounding Frost Town persists into the present in the modern social fabric of the Finger Lakes region.

Smith, Alexander (University of Colorado, Denver)

[227] *Applied Geometric Morphometrics in Analysis of Alaska Native Ground Slate Projectile Points*

Indigenous Alaskan ground slate projectile points present an interesting opportunity to apply geometric morphometrics for shape analysis of a unique and relatively understudied lithic tradition. Here I present a method for the purpose of classifying and corroborating presumed tribal affiliations of Proto-Historic ground slate projectile points from indigenous cultural regions of Alaska. A dataset of 2D images derived from an online database lacking high-quality provenience information was analyzed using GIS tools and open-source tribal data to tie belongings to tribes (Inupiat, Yupik, Alutiiq, or Tlingit). Further, principal component analysis of points from the various Indigenous Alaskan cultural regions yielded distinct variation in overall shape by presumed tribal affiliation. Discriminant function analysis helped to validate the clusters from the principal component analysis and determine the success of grouping criteria with strong results. While this method is

novel and constrained by data availability issues, it serves as a jumping off point for future ways of effectively typologizing lithic traditions, establishing cultural affiliation, and repatriating belongings that may have been neglected by museums or were improperly documented.

Smith, Alison [211] see Hunt, Abigail

Smith, Byron (University of Texas, Austin), Timothy Beach (University of Texas, Austin), and Sheryl Luzzadder-Beach (University of Texas, Austin)

[109] *Revealing Ancient Maya Water Management: Insights from Lidar Mapping, Excavation, and Soil Stratigraphy of the Birds of Paradise Riparian Reservoir*

This paper explores the analysis of several parts of an ancient Maya reservoir located on the eastern edge of the Birds of Paradise (BOP) wetland field complex in the Three Rivers Region of northwest Belize. Here we used lidar imaging and geospatial analyses to identify a series of north–south and east–west linear berms that were part of a sophisticated reservoir. We then excavated and cored several of those berms to understand their construction and chronology. Our evidence indicates that these berms went through multiple phases of construction between the Late Classic and Postclassic periods. Our geochemical and stratigraphic analyses showed that these ancient Maya engineers utilized variably sourced materials over generations to build and maintain these berms. We suggest these adaptations were part of a broader sociopolitical system aimed at ensuring sustainability and growth in periods of climate and other environmental changes. Our research provides new insights into ancient Maya water management, land use, and adaptation to a changing environment, and this study offers a broader understanding of ancient Maya persistence during the little known Postclassic period in the Three Rivers Region.

Smith, Claire (Flinders University)

[185] *Women Who Shaped Archaeology in Australia*

This presentation focusses how interconnected networks of women have shaped the development of Australian archaeology during the twentieth century. Through the lens of intersectionality and the multifaceted practice of women's roles in archaeological work, I consider the various roles that women have played in the development of archaeology in Australia, both visible and invisible, and consider the challenges they faced in their personal quests. Networks of women in Australian archaeology had two major impacts on the development of Australian archaeology. The first impact is an insistence on systematic archaeological surveys prior to development and the protection of cultural heritage sites by legislation, policy, and processes. The second impact is the decolonization of archaeology in Australia as part of a feminist understanding of the impact of sociopolitics on archaeological theory and practice.

Smith, Desiree, Olivia Navarro-Farr (College of Wooster), and David Rafael McCormick Alcorta (Mohegan Tribal Historic Preservation Office)

[85] *Contextualizing a Patron Deity: Analysis of the Akan Figurine from the Tomb of a Royal Queen at Classic Maya City of El Perú-Waka'*

In 2012, the tomb of a royal woman was discovered in a buried subphase of a central ceremonial building in the heart of ancient El Perú-Waka' (henceforth Waka'). The interred is Lady K'abel, the site's most significant Snake Dynast whose Calakmul origins and title of Ix K'aloomte positioned her as superior in rank to her spouse, Waka' ruler K'inich Bahlam II. The artifact, a roughly hewn figurine carved from soft karstic material, has been identified as a depiction of Akan, a deity commonly associated with disease, drinking, death, and self-decapitation. Chemical analyses planned for this object may shed light on the significance of this source material, its composition, and potentially its source. The deity Akan is also one of Waka's most central patrons. In this poster, we discuss the object's placement as well as the significance of its identification of a fetich representation of the city's primary patron deity. Our goal is to explore the nature of this figurine as an effigy, and contextualize this nature based on ritually and spiritually significant themes at Waka'.

Smith, Emily (UCSB)

[229] *To Make Holiday: A Preliminary Look at Alcohol Practices in Ancient Egypt via Use-Alteration Analysis*

Alcohols in the ancient world have been the subject of increased study as methods for analysis grow in

sophistication, but despite progress made in the field of chemical identification, identifying the presence/absence of alcohols in the archaeological record remains somewhat mixed. I present preliminary work on the use-alteration patterns attributed to alcohols on the ceramic assemblage of Askut, a well-documented ancient Egyptian Middle Kingdom colonial fortress site, as a part of a larger study targeting alcohol production, transport, and consumption across the period of Egyptian occupation in Lower Nubia. To address issues of organic preservation, ceramic use-alteration analysis can be used to identify wear patterns in the form of pitting and spalling attrition that reflect the presence of alcohols in archaeological contexts. The assemblage from Askut, founded in the Middle Kingdom and occupied through the Third Intermediate period, allows for the investigation of alcohol use in the context of colonialism, where alcohol likely played a lubricating role in the day-to-day dynamics of intercultural interactions. The sample presented in this research is a preliminary part of a larger study targeting chemical attrition activity on Egyptian and Nubian vessels addressing the question of entangled alcohol usage practices on the Egyptian colonial frontier.

Smith, Geoffrey (University of Nevada, Reno), Shelby Saper (University of Nevada, Reno), and Jackson Mueller (University of Nevada, Reno)

[382] *Variability in Annual Precipitation and Temperature in Northwest Nevada's High Rock Country and Its Potential Influence on Western Stemmed Tradition Settlement Strategies and Land Use*

Northwestern Nevada's High Rock Country features a robust record of late Pleistocene and early Holocene human occupation. Sites with Western Stemmed Tradition (WST) assemblages occur in caves and rockshelters, along stream channels, and around the margins of pluvial lake basins. In this paper, we use historic annual precipitation and temperature data to consider variability within the environments that early groups frequented, focusing on the seasons in which locations may have been optimally occupied and the foods that people may have targeted. Our results provide new insight into the exploration and settlement processes that may have characterized the early chapters of human history in the High Rock Country.

Smith, Gerad (University of Alaska)

[214] *Exploring the Geomythology and Ethnoarchaeology of Early Dene Terminal Pleistocene Landscapes*

Northern Dene culture-bearers in Alaska and Canada maintain a number of oral traditions and place names recalling landscapes and geological events evoking the Late Pleistocene. Following these traditions, the following study tested sediment associated with massive *jökulhlaups* from Glacial Lake Atna. Using thermoluminescence methods, we date these large outburst flooding events in the Upper Tanana Valley, Alaska, to help understand the antiquity of local ethnohistories embedded within the landscape.

Smith, Heather (Texas State University), Erin Mathison (Texas State University), and Samantha Krause (Texas State University)

[96] *Searching for the Late Pleistocene: Geoarchaeological Analyses of Sediment Cores from Spring Lake, San Marcos, Texas*

The Spring Lake site is located along the Balcones Escarpment in central Texas and contains evidence of consistent human use throughout the Holocene in primary contexts. The area remains significant in the traditions of contemporary Indigenous Peoples that have called this region home for thousands of years. Early work at the site in the 1970s revealed fluted points and the remains of Ice Age megafauna in a secondary context, suggesting that Ancestral Peoples may have visited the site for over 13,000 years. Subsequent investigations have searched for intact late Pleistocene cultural deposits using excavation, remote sensing, and geoarchaeological techniques. In 2021, our team from Texas State University collected new sediment cores to study variation in the stratigraphy of previously uninvestigated areas of the site, collect paleoenvironmental data, and obtain material for radiocarbon dating. In this paper we report the results of geoarchaeological analyses used to characterize stratigraphy and preliminary paleoenvironmental analyses. We discuss how stratigraphy evident in the new cores correlates with previous geoarchaeological investigations and the potential presence of late Pleistocene cultural deposits at Spring Lake.

Smith, Heather [300] see Medlin, Ashley

Smith, Jaye (Council of Allied Societies [CoAS]), and Jeffery Clark (Archaeology Southwest)

[302] *Continued Work on the Ray Robinson Collection: The Perishable Assemblages from Bonita Creek Cave Cache and Hackberry Ranch Sites in Southeastern Arizona*

Investigations continue into the Ray Robinson Collection by Archaeology Southwest's team of volunteer researchers in partnership with the Arizona State Museum. This paper will focus on the extensive perishable assemblage from the renowned Bonita Creek Cave Cache (W:14:1 ASM) north of Safford, Arizona, and two sites near Hackberry Ranch southeast of Safford. These sites were collected by Ray during the late 1950s and early 1960s with the permission of the then private landowners while he was conducting geological survey work. The Bonita Creek Cave Cache was published by William Wasley in 1962, four years after Ray's first visit with landowner Ray Claridge and Emil Haury. The Hackberry Ranch sites (Cave and Dry Lakes) do not appear to have been previously recorded, although there are recorded cave sites in the vicinity. Our investigations augmented by Ray's notes shed light on the poorly documented archaeological record near the Pelloncillo Mountains. All of these sites produced a wide variety of perishable objects rarely recovered from archaeological contexts in the region, including sandals, cordage, and wooden objects. This paper will share the results of documentary research conducted on the Robinson Collection notes and present a detailed inventory of the perishable assemblages from each site.

Smith, Kendall

[212] *Sowing Seeds of Success: The Politics of Mentorship, Representation, and Cultivating BIPOC Archaeologists*

Despite facing a lack of representation in the field and in the classroom, BIPOC students are expected to navigate the field through merits that must outpace their white peers to be respected, or by the support of peer—rather than mentor—networks. Case in point: this symposium was conceived through the collaboration of undergraduate students, receiving no guidance from mentors or faculty members. Mentorship is a cornerstone of success for entering academia, and its absence from so many archaeology programs perpetuates the inaccessibility of the discipline for students. In this paper, I will discuss the strengths and shortcomings of mentorship practices in higher education, utilizing current university policies, existing pedagogical frameworks, and the personal experiences of myself and peers. I will explore the ways that mentorship benefits students and contributes to their learning experience, from providing tailored advice for locating fieldwork opportunities, to building substantial professional connections. Finally, I will propose strategies and solutions for institutions that stimulate meaningful mentorship not only for students of color, but for all students. By examining ways in which BIPOC archaeologists in training can be uplifted in the discipline, we open the field to more diverse perspectives, and holistic understandings of the past.

Smith, Kevin

[56] *Using Experimental Archaeology and a Technological Approach to Decode Single Piece Shell Fishhook Production Strategies in the Southern California Bight*

This research uses experimental archaeology and a technological approach to decipher functional linkages between disparate artifact forms and key stages in shell fishhook production strategies on California's Channel Islands and the adjacent mainland coast. The single-piece shell fishhook has been recognized as a key subsistence technology in numerous locations around the world and especially in the Southern California Bight. This technology allowed Indigenous anglers to forage marine habitats more efficiently and locally led to an intensified subsistence reliance on fish protein in the late Holocene. Theories surrounding shell fishhook production strategies from the region have been proposed but few researchers have tested these assumptions. Using experimental archaeology and a technological approach, localized shell fishhook manufacturing strategies have now been tested and new insights have emerged.

Smith, Michael E. (Arizona State University), Angela Huster (Chronicle Heritage), and Rudolf Cesaretti (Arizona State University SHESC)

[289] *Aztec-Period Otumba: A Comparative Perspective*

Fieldwork at Otumba, directed by Deborah Nichols and Thomas Charlton, produced numerous important findings on the Aztec economy and urbanism. Otumba has played an outsized role in our understanding of Aztec craft production and economic organization in particular. The site has been presented as both prototypical example and outlier. We compare archaeological data from Otumba with findings from other

Postclassic sites on three topics: regional demographic and political history, craft production/exchange, and civic architecture. Otumba was a small center in a region of low population density. Nevertheless, it stands out from other Aztec sites in the diversity and intensity of craft production activity. We argue that these patterns can be accounted for by two major factors: Otumba's location on a major trade route out of the Basin of Mexico, and a long history of administrative meddling by Texcoco and Tenochtitlan. Otumba's lack of civic architecture is striking compared to other Aztec city-state capitals but is likely due to issues of preservation and post-occupational change at the site rather than to functional differences in Aztec times.

Smith, Michael [268] see Pfannkuche, Sara

Smith, Michael E. [346] see Ruth, Alissa

Smith, Morgan

[277] *Multi-instrument Sub-bottom Sonar Surveys in Lake Huron: Results and Paths Forward*

Over the course of two preliminary field seasons in 2023 and 2024, sub-bottom sonar surveys in Lake Huron have uncovered a series of previously unknown stratified deposits and resonance signatures indicating the presence of possible paleoenvironmental records and submerged archaeological sites, respectively. These surveys, based out of Alpena, Michigan, implemented an Edgetech 3100p topside and two sub-bottom profiler towfish instruments, sweeping the 4-24 and 2-16 kHz spectrums, respectively. This paper will review the deposits identified as well as their potential relation to early, prehistoric lake stands including Nipissing and Stanley, with a focus on identifying the locations most suitable for continued geoarchaeological prospection.

Smith, Morgan [345] see Mullins, Tyler

Smith, Morgan [345] see Naudinot, Nicolas

Smith, Morgan [345] see Robles-Montes, Mayra

Smith, Rick [109] see Locker, Angelina

Smith-Leach, Rachel (University of Oxford)

[350] *Geomorphons for Assessing Archaeological Risk from Landslides*
[WITHDRAWN]

Snead, James (California State University, Northridge)

[336] *The "Cable Boom": Public Transportation and the Cityscape of 1880s Los Angeles*

The development of mass transit played an integral role in the development of cities in the nineteenth-century American West. In particular, the rapid expansion of population in 1880s Los Angeles created complex interconnections between land development, entertainment, and innovative ways to move people around. This "Cable Boom" shaped the organization of neighborhoods, such as the "New West End," adjacent to the historic city center. But the associated cityscape has been overlain by subsequent development and remains poorly understood by historians and cultural preservationists. An informative material record, however, exists. This paper explores the city's 1880s street railways and their evolution through maps, newspapers, and preserved features, shedding light on an overlooked element of western urban life.

Snitker, Grant, Dexter Strother, and Claudine Gravel-Miguel

[114] *Advancing Machine-Learning Approaches to Identifying Charcoal Morphologies and Fuels for Sedimentary Charcoal Analysis*

Differentiating between natural and anthropogenic fire in the past remains one of the principal challenges in interpreting paleo-charcoal records and has implications for contextualizing changing fire regimes in our world today. During the Holocene, cultural burning practices throughout the globe were motivated by diverse social institutions, values, and economics; however, the frequency, seasonality, spatial distribution, and ecological severity of anthropogenic fire likely differed enough from natural fire to generate lasting ecological effects. Similarly, prescribed fire operations conducted by land managers in the United States are modern

examples of cultural burning to achieve desired ecological outcomes. Nonetheless, relatively few studies have utilized prescribed fires as laboratories for testing methods to interpret anthropogenic fire activity in charcoal records. We present the results of a comprehensive study of charcoal production and morphology collected during a series of highly instrumented prescribed fires that occurred during March 2021 within the Hitchiti Experimental Forest, Georgia, USA. We utilize a machine-learning classification approach to relate field-collected and lab-created charcoal datasets to pre-/post-burn vegetation inventories and radiometric measurement of energy release collected at 12 study plots throughout the burn area. Using this approach, we seek to expand the interpretive potential of paleo-charcoal records for identifying past anthropogenic burning.

Snitker, Grant [299] see Fetterhoff, Alex
 Snitker, Grant [114] see Peck, Katherine

Snoeck, Christophe [167] see Heinrich, Frits

Snow, Meradeth [316] see Airola, Danielle
 Snow, Meradeth [321] see David, Anna-Marie
 Snow, Meradeth [297] see Hofland, Samantha
 Snow, Meradeth [230] see Jones, Averi
 Snow, Meradeth [316] see Mathiowetz, Michael
 Snow, Meradeth [194] see McDonald, Holli
 Snow, Meradeth [297] see Zoiss, Emma

Snyder, Madeline (University of Texas, San Antonio)

[349] *Refining a Late Classic Household Chronology: New Insights from Las Ruinas de Arenal, Belize*
 Settlement and household archaeology in the Belize River valley have made considerable contributions to the corpus of knowledge on ancient people in the Maya lowlands. Variation in occupational patterns, sociopolitical systems, and other cultural elements has been identified diachronically through this research. This paper will refine the occupational chronology and construction history for a Late Classic household group at Las Ruinas de Arenal, Belize. Recent investigations have provided a deeper history for the location, as well as refining understandings of Late Classic occupation at the site more broadly. New AMS dates support our understanding of Maya activity at the household through time. Preliminary research on the eastern shrine suggests that early Postclassic visitation at the household is indicative of ancestor veneration playing a role in social memory at Las Ruinas de Arenal. These broader patterns and connections through time to ancestral places and peoples further illustrate the sociopolitical dynamics at the site.

Snyder, Thomas, and Mark Grote (University of California, Davis)

[117] *Precipitation Variability, Age at Death, and Metabolic Stress over 3,000 Years in the Ancient Andes*
 Climate change is an immediate and pressing global issue with wide ranging consequences. Research on living populations, though important, may fail to capture the range of possible human behavioral and biological responses to climate change. The cultural breadth and temporal depth of archaeological and bioarchaeological research offers a window into how people may have adapted to past climactic changes. This study contributes to bioarchaeological scholarship on climate change by investigating the relationship between human health and precipitation variation among archaeological populations in the Andes region of South America. Drawing paleoclimate data from the PaleoView TRaCE 21k simulations, we conduct a path analysis of precipitation, cribra orbitalia ($N = 5318$), and age-at-death ($N = 4234$) to assess the evidence for metabolic stress and fertility responses to climate change. Ultimately, our models support a negative relationship between the presence of cribra orbitalia and mean annual precipitation Andean archaeological populations but fail to support a relationship between age-at-death and precipitation. Further, we found a relationship between cribra orbitalia and the variance in annual precipitation during site occupation, relative to historical variation. These findings not only support long-standing human behavioral ecological models but may also support emerging theoretical frameworks focused on the concept of anti-fragility.

Soares, Leticia [159] see Vasquez, Noelle

Sobel, Elizabeth (Missouri State University), and F. Scott Worman (Missouri State University)

[216] *Forgetting to Remember, Remembering to Forget: Materiality Confronts Public Memory in the Missouri Ozarks*

Our research in the Ozarks of southwest Missouri yields insights that are at odds with national and local perceptions of the area. Archaeological, documentary, and oral history data show that late nineteenth- and early twentieth-century communities were more racially diverse and economies less narrowly agrarian than assumed and, arguably, than they are today. In this presentation, we explore how various media and material settings communicate local histories. We argue that the local histories largely reflect, reproduce, and reinforce the dominant narrative of a homogeneous, white, agrarian past. Both conscious elision (remembering to forget) and unquestioning acceptance (forgetting to remember) shape this exclusionary public memory. However, local descendants, activists, scholars, and sites managed by nonlocal entities (e.g., state parks) have begun to produce counter narratives. We argue that a critical analysis of exclusionary local histories and of the ongoing resistance to changing the loci that reproduce those histories is necessary for a more inclusive public discourse about the past. Using our own work, we examine how historical archaeology can help accomplish these aims and contribute to efforts by descendant communities and others to re-imagine and re-present the past of SW Missouri and the broader Ozarks.

Sobrinho, Santiago (University of Texas, San Antonio), Jose Francisco Osorio Leon (INAH Yucatán), and Francisco Perez Ruiz (INAH Yucatán)

[303] *The Ahaw and His Representative: A New Approach for the Reading of Stela 2 at Chichen Itza*

The following paper offers a new proposal for the reading and interpretation of the Stela 2 of Chichen Itza, a flat limestone 2.11 m tall monument discovered in the late 1990s by the late Dr. Peter Schmidt. The monument presents a middle register composed by 32 glyph blocks in an advanced state of erosion, a feature that prevented most epigraphers from getting a full reading of the text. This resulted on partial readings focusing mostly on the second, less damaged, half of the register. During the Promeza Chichen Itza 2022–2023 research season, the project specialists used photogrammetry to develop a high-resolution image catalogue of Chichen Itza's monuments. The most recent enhanced image of Stela 2 revealed multiple features that, in addition to oblique light observation, allowed us to recognize most of the cartridges from the first half of the text. The resulting reading shows important aspects about the role of intermediate elites in the site during the late ninth century as well as the strategies they used in order to legitimize their position in relation to the paramount lord.

Soh, Leen-Kiat [64] see Athanassopoulos, Effie

Solinis-Casparius, Rodrigo (University of Illinois, Chicago)

[330] *Tracing Traffic: Network Analysis and Modeling of Pedestrian Urban Roads in Angamuco, Michoacán*

Movement is a fundamental component of social development and cultural complexity, especially in urban centers. It is defined by its road-network that permits or restricts access and flow to certain areas of a city. However, it is pedestrians who use this network by creating routes depending on a multitude of factors and decisions including personal experiences, group traditions, or physical characteristics of the network (e.g., blockages, access points, quality of the road, etc.). How can archaeologists trace aggregates of these decisions? Is it possible to identify the most used routes, major roads, or important destinations? In this paper I propose a method to model traffic flow in the ancient city of Angamuco, Michoacán (250–1530 CE). I used urban network analyses and modeling (along with data from survey and field mapping) to identify the major roads (most trafficked) from a complex network of over 3,000 pedestrian road segments and nodes in this 5 km² city. Results suggest that when studying mobility, we need to move away from thinking of roads as limited features with start and end and see them as components of a network in which people engage, use, and transform daily.

Solometo, Julie (James Madison University), Joel Nicholas (Hopi Tribe), Stewart Koyiyumtewa (Hopi Tribe), Gregson Schachner (UCLA), and Wesley Bernardini (University of Redlands)

[298] *A Recurring Motif at Ancestral Hopi Villages*

A recurring scene, found on petroglyphs and pottery associated with Ancestral Hopi villages, shows a central

figure holding its face to a long, branching object that ends in circles, often surrounded by “assistant” figures. Consultation with Hopi cultural advisors indicates that the scene depicts an event of importance to Hopi people. Consideration of the age and spatial distribution of the scene provides a window into the history of Hopi cultural practice.

Song, Guoding [185] see Tian, Shiyu

Sonnenburg, Lisa [277] see Boyd, Matthew

Sorensen, Peter

[97] *Singing in the Mexica Royal Court: The Chalca Woman’s Song in 1479 and 1564*

During the fifteenth and sixteenth centuries, singing was an important political tool for commoners and other city-states (*altepemeh*) to communicate grievances to the Mexica nobility. In general, we have limited historical resources to understand the specific political context of how and why songs were sung. However, several Nahuatl language songs preserved in the sixteenth-century manuscript *Cantares Mexicanos* and descriptions from Nahuatl language annals (*xiuhpohualli*, or year counts) give us strong hints about deeper political meanings and contexts. One song, “The Chalca Woman’s Song” (Chalcacihuacuicatl), was performed in the years 1479 and 1564 publicly to the Mexica nobility. By comparing the surviving lyrics to the two historical descriptions we learn that this song was invoked to make important public statements about justice, taxation, and oppression. This political positioning was articulated into a metaphorical context of what it was like being a Nahuatl woman, even though we know the song was performed by a Nahuatl man. This paper explores new historical terrain on one of the most discussed Nahuatl songs in the context of the public performance of music in Mexica society before and after the arrival of the Spanish.

Soressi, Marie [384] see Porter, Samantha

Soria, Montserrat [36] see Zazueta, Maria

Soro, Holley [241] see Mezzell, Madelyn

Soto Camacho, Alejandro (North Carolina State University), and Julie Wesp (North Carolina State University)

[85] *Symbols of Life and Death: A Funerary Archaeological Analysis of San Ignacio Church in Bogotá, Colombia*

This project addresses the relationship between culture, funerary practices, and Jesuit religion at San Ignacio Church in Bogotá, Colombia, through a demographic analysis of individuals interred in the crypt, a visual analysis of symbolism on the headstones, and historical research. The crypt includes approximately 485 individuals in single and common graves from the late nineteenth century to the present. The average age at death for adults ($n = 108$) is 67 years. There is an increase in the number of burials during the mid-twentieth century when Colombian society was experiencing political upheaval. The arrangement of the crypt illustrates social hierarchies since individuals paid more for chambers closer to the crypt’s altar or for burial in the church instead of a city cemetery due to fears of witchcraft and grave desecration. The earliest gravestones were decorated with inscribed standard religious iconography without personalization, but a change in church regulations in the late twentieth century allowed for individual dedications, metallic decorations, or relief sculptures. This research suggests death perception and the afterlife are intricately linked to cultural perspectives, social hierarchies, and socioeconomic status.

Soto Rodriguez, Luis Miguel (University of Pittsburgh)

[341] *The Political Landscape of a Prehispanic Tairona Chiefdom Community in the Sierra Nevada de Santa Marta: Settlement Patterns, Conflict, and Decision-Making in the Río Frío Basin, Colombia*

The present proposal seeks, through an analysis of settlement patterns, conflict, and decision-making, to evaluate the conformation of a political landscape in a prehispanic Tairona chiefdom community from the first century AD to the sixteenth century AD in the mountainous foothills of the Río Frío basin, Sierra Nevada de Santa Marta, Colombia. Through the use of statistical algorithms in the R programming language and the

analysis of settlement patterns in geographic information systems (GIS), this presentation seeks to evaluate how landscape archaeology was used to form diverse local and supralocal communities in the study area and how these regional scale analyses allow archaeological research and analysis on the emergence and development of prehispanic chiefdom communities that inhabited the foothills of the Sierra Nevada de Santa Marta and what were the spatial particularities, sociopolitical conditions and social structures that intervened in the conformation of a political landscape and in the processes of social integration.

Soto Vera, Débora [327] see RuizDiaz, Julio

Soukup, Ian (University of Colorado, Boulder), Joseph Izraelevitz (University of Colorado, Boulder), and Lauren Hosek (University of Colorado, Boulder)

[321] *Modeling Oral Health in the Loretto Bioarchaeology Project*

The nineteenth and early twentieth centuries generated significant developments in dentistry as the field professionalized and new treatments and care regimes were promoted across the United States. However, the extent to which the public engaged with these developments is less well-known. This project examines changes in dental health and care over time in a religious community in Colorado. The Loretto Bioarchaeology Project studies the Sisters of Loretto, a Catholic order of women educators in Denver who died between 1870 and 1961. With permission of the descendant Loretto Community, skeletal and dental data were collected from 55 women whose remains were disinterred and relocated due to a development project. With this data, we developed metrics for dental and periodontal health based on percentage of uncompromised teeth and tooth socket health, and modeled dental disease as a function of age. Residuals of these models control for the progressive nature of dental disease and reveal general temporal trends of dental health. The results show a significant improvement in oral health over time when controlling for age at death and considering potential dietary changes (using dental wear as a proxy). We argue that these differences demonstrate changing dental care practices in the urbanizing West.

Southon, John [174] see Armitage, Ruth Ann

Southon, John [301] see Scott Cummings, Linda

Spalding, Elaine [198] see Harahsheh, Maryam

Spangler, Jerry [126] see Medina, Ishmael

Sparks, Lisa (Burns & McDonnell)

[94] *Women's Historical Patterns of Land Utilization on the Jicarilla Apache Reservation*

During 2021–2022, the Bureau of Indian Affairs sponsored a Cultural Landscape Survey on the Jicarilla Apache Reservation in northern New Mexico, covering over 9,000 acres as part of a forestry and fuels project. This survey provided valuable insights into land use during the early reservation days, revealing patterns of land occupation and usage that shed light on the historical lifestyle and practices of the Jicarilla Apache. Cultural features on the landscape allowed researchers to link patent dates to utilization patterns. Notably, many early reservation patent holders among the Jicarilla Apache were women, highlighting their significant role in the community. This aspect of their history underscores the matrilineal elements within their society, traceable through archival records. Documenting women's land ownership reveals shifts in gender dynamics, economic practices, and legal recognition of traditional roles. The patterns of land utilization on the Jicarilla Apache Reservation, particularly as seen from archaeological features and patents held by women, reveal a rich tapestry of cultural and social dynamics.

Speal, C. Scott (Pennsylvania State University)

[215] *Cui Bono Est Patria Potestas? Sex, Death and Patriarchy on the Roman Danube*

Ancient Rome is arguably the quintessential patriarchal society in the western historical tradition, in which the male head of household had the very power of life and death over his wife and children. Cross-culturally, anthropologists have found that those in a position of hierarchical authority generally manipulate sociopolitical systems to their own benefit. This has occasionally been phrased in terms of risk allocation, in

which subject demographics are typically exposed to detrimental health situations and outcomes. The present study examines an osteological assemblage from a Late Roman city in eastern Europe for indicators of health risk by attributed sex—finding that males were subject to extreme levels of excess mortality and elevated prevalence of paleopathology. Roman patriarchy then, at least as practiced on the Danube frontier, appears to have generally buffered females from public health threats rather than males. While excess male mortality is considered the norm among modern postindustrial societies, a wide range of historical variation raises questions about the deep history of this phenomenon, the extent to which it is culturally driven, and what is “normal” for our species. Moreover, what does it say about Western patriarchal traditions if in practice they actually serve to focus risk on men? *****This presentation will include images of human remains.**

Spears, Michael [270] see Welch, John

Speer, Charles (Idaho State University)

[391] Refining Chert Provenance Methods: Evaluating Laser Ablation Spot Size and Reproducibility

This study evaluated the effectiveness of minimum spot sizes for laser ablation on chert artifacts to determine the trace element information required for accurate geologic source provenance. Using an NSF-funded excimer 193 nm laser and an inductively coupled plasma–triple quadrupole–mass spectrometer (ICP–QQQ–MS), laser ablation was conducted on NIST 610, 612, and 614 standards. Samples included chert from Edwards Plateau, Fort Payne, and Golden Valley, with three nodules sampled per formation and 10 flakes per nodule. A projectile point from each formation was also tested to simulate source attribution. Laser ablation spot sizes ranged from 1 to 150 microns, with each size replicated three times to assess variance and reproducibility. This study incorporated internal standardization with isotopic ratios of silica ($^{29}\text{Si}/^{28}\text{Si}$) to correct for signal drift and matrix effects, and Ultra-High-Purity (UHP) gases to reduce nitrogen oxide interferences. Laser-induced fractionation effects and depth profiling were evaluated to ensure data integrity. Principal component analysis (PCA) and Random Forest Classification analyzed geochemical signatures to determine the optimal and smallest spot sizes for accurate source attribution. The research aims to refine analytical techniques in chert sourcing by maximizing data resolution and preserving artifact integrity through minimally invasive practices.

Speller, Camilla (University of British Columbia), Aurelie Manin (University of Oxford), Ivan Briz I Godino, Carlos Tornero Dacasa (Universitat Autònoma de Barcelona), and Eleanor Green (University of York)

[376] The Origin of the Fuegian Dog: Reassessment of Taxonomic Identity and Domestication Process Using Whole Genome Sequencing

This paper examines the origin and possible domestication of the Fuegian dog, an extinct canine species that lived alongside Indigenous groups in Tierra del Fuego, South America. Historical accounts by explorers and naturalists offer conflicting viewpoints regarding the origin of this South American canid. While some suggest an historic European introduction, previous genetic analyses pointed to the local domestication of native South American foxes (*Lycalopex* sp.). Here, we report on the biomolecular analysis of two secure museum reference specimens of the Fuegian dog from École Nationale Vétérinaire d'Alfort at Maisons-Alfort, collected prior to this population's extinction before the twentieth century. We apply ZooMS, mitochondrial DNA (mtDNA) analysis, and whole genome sequencing to determine the species and origin of the Fuegian dog. ZooMS analysis attested to the preservation of biomolecules, and confirmed the identification as a canid. mtDNA genome analysis was applied to determine the species and the maternal origin of the Fuegian dog. Whole genome sequencing was applied to verify the species, identify the population of origin, and search for signatures of hybridization. Our biomolecular results, in combination with previous genetic and historic studies, raise the possibility of Indigenous domestication and management strategies that incorporated local and introduced canid species.

Speller, Camilla [288] see Hilsden, Jay

Speller, Camilla [376] see Sewnath, Neeka

Spenard, Jon (Cal State University, San Marcos), James Eighmey (Palomar College), and Alysa Ransom (San Diego State University)

[284] *The Chains that Grind: An Experimental Archaeological Study Ancient Maya Granite Ground Stone Tool Production*

The Rio Frio Regional Archaeological Project recently recorded an extensive network of granitic rock quarry sites associated with an ancient Maya ground stone tool production industry in the Mountain Pine Ridge (MPR), Belize. At the extraction sites, raw material was workshopped into ground stone implements and then distributed throughout Belize and adjacent regions of Guatemala and Mexico. Assemblages at the quarry-workshop sites include vast quantities of waste rock, reduction tools, and discards. Of particular note is the regular appearance of numerous artifacts of unknown function we have labeled as “half-loafs,” presumed to be mano discards. Further, metate discards and preforms are present but rare. Only a few of these types of sites have ever been recorded archaeologically in Mesoamerica but none in the Maya area, though they are known there ethnographically. With few sites available for comparison, fundamental questions related to the chain of manufacturing operations and site formation processes remain unanswered. To begin to address those knowledge gaps, we initiated a preliminary experimental archaeology study with material collected from the MPR. In this presentation, we report on our methods and results, revealing what we learned and what questions remain unanswered. We conclude with suggestions for future areas of investigation.

Spenard, Jon [284] see Tibbits, Tawny

Spencer, Kaylee (Florida State University)

[303] *Classic Maya Ceramics: Considerations of Text, Space, and Place*

This paper explores relationships between hieroglyphic texts and Classic period Maya ceramics, delving into how inscriptions on vessels provide insight into social, political, and ritual practices of ancient Maya culture. By examining hieroglyphic texts found on particular vessel shapes, such as plates, bowls, and cache vessels, this research seeks to understand how the intentional placement and manner of likely physical interaction with such objects impart meaning. Additionally, I analyze the contexts from which these objects were excavated, particularly in the Southern Lowlands. This session aims to broaden our understanding of how ancient Maya people used the intentional placement of ceramics as communicative tools, not only for the functional aspects of daily life but also as objects imbued with agency, symbolic meaning, and power.

Speth, John (University of Michigan)

[280] *Northern Latitude Hunters, Meat Caches, and Problems Assessing Season of Occupation from Faunal Remains*

Hunting terrestrial mammals is an unpredictable enterprise, with boom periods interspersed with periods of poor returns. Lack of success can arise for many reasons: scarcity of animals or difficulty finding them, failing to get close enough for an effective shot, animals are in poor condition, communal drives fail, etc. Northern foragers heavily dependent on meat cope with unpredictable returns by caching surpluses, whenever available, for use during times of shortfall. Caches were often located off-site along travel routes or close to major hunting grounds. Simple rock cairns placed directly on the surface were among the most widely used means of caching. Contents were tapped repeatedly over weeks, months, multiple seasons, even years. During times of need, foragers traveled considerable distances to retrieve food from their caches. These observations lead to interesting archaeological implications: (1) the season of an animal's death may bear little relationship to the season of consumption, (2) the span of time indicated by an occupation's faunal assemblage may greatly exceed the period when people were actually present there, and (3) the environmental signature(s) provided by a site's fauna may be a poor indicator of the habitat(s) actually exploited by the site's inhabitants while in residence.

Spinapolicc, Enza (Sapienza University of Rome), and Marianna Fusco

[103] *Ethnographic Analogy for the Study of MSA Hunter-Gatherers Complexity: Potential and Limitations*

The aim of this talk is to discuss the organization of past hunter-gatherer groups by combining preliminary analyses of the GOT-10 materials with ethnographic analogies. Since the 1800s, ethnographic and anthropological data have been crucial in interpreting prehistoric archaeology, particularly in understanding stone tool production. Early views of modern hunter-gatherers as “living fossils” were criticized, leading to a

more nuanced approach to using these data in archaeological contexts. In Africa, the Middle Stone Age (MSA) is central to understanding early *Homo sapiens*' behavior, with ethnographic data providing insights into the complexities of tool use and production. However, challenges persist in effectively applying these analogies. This talk aims to reassess the use of ethnographic observations in interpreting MSA hunter-gatherers, exploring how much can be understood through this approach. An extensive review of past work will inform new hypotheses for interpreting MSA archaeological contexts, focusing on the potential and limitations of ethnographic analogy in reconstructing the behavioral complexity of these ancient groups.

Spinapolic, Enza [167] see Mogesie, Semineu

Spitzschuh, Samuel [121] see Pisanelli, Brenna

Sportman, Sarah (Connecticut State Museum of Natural History; University of Connecticut)
[365] *Scored, Cut, Folded, and Rolled: Indigenous Metal-Working at the Seventeenth-Century Hollister Site, South Glastonbury, Connecticut*

The Hollister Site is a large English farm complex located on the fringe of early colonial settlement on the Connecticut River at Nayaug (present-day South Glastonbury). The two English families occupied the farm in the second half of the seventeenth century, the Gilberts (1651–1663) and the Hollisters (1665–ca. 1715), were involved in local politics and trade. Both families maintained relationships with local Indigenous groups, and especially with the Wangunk communities that lived nearby along the Connecticut River. The documentary and archaeological records of the Hollister Site suggest that at times, the farm was a shared landscape, with both English and Indigenous Wangunk people in residence. The site provides a rich material record of both colonial English and Native lifeways in colonial Connecticut and reflects the intricacies of the personal relationships that sometimes formed between Indigenous and English people living at the edges of colonial society. This paper examines one aspect of the archaeological assemblage from the Hollister Site, worked and scrap metal fragments of copper alloy and lead, to further explore the entangled material and cultural landscape and hybridity of cultural practices reflected in the material record.

Sprafke, Tobias [332] see Iovita, Radu

Šprajc, Ivan [383] see Morales-Aguilar, Carlos

Sprock, Cody (University of Missouri), Sheldon Skaggs (Chemistry, Earth Sciences, and Environmental Sciences), John Walden, and Jaime Awe (Northern Arizona University)
[89] *Examining the Colonial Timber Extraction Economy through Archaeological Survey, Metal Detection, and Local History at Dover Camp, Belize*

Archaeological investigations in modern-day Belize have primarily focused on understanding the ancient Maya polities that once dominated the landscape. Comparatively little archaeological investigation has focused on colonial timber extraction economy during the seventeenth to twentieth centuries. Following the devaluation of the primary timber export, logwood (*Haematoxylum campechianum*), during the Seven Years' War (1756–1763), mahogany (*Swietenia macrophylla*) became the primary export. Unlike logwood, which grew along waterways, mahogany thrived further inland leading British loggers to begin favoring claims farther from the Bay of Honduras. Riverine corridors like the New River, Belize River, and their tributaries were vital for floating mahogany to the coast. The historically documented site of Dover Camp, situated at the confluence of the Belize River and Barton Creek in modern-day Cayo District, was one such logging site. Dover Camp was identified in 2024 through a combination of oral history and archaeological survey. Metal detection and test pitting revealed spatial clusters of logging tools, weapons, and domestic items across the site. We present our initial findings and outline future plans to conduct historical and ethnographic research to further our understanding of Dover Camp in the context of the shifting colonial economy.

Spuck, Jacob (Adena Environmental Consultants)
[183] *The Role of Advanced Remote Sensing Geoarchaeological Technologies in Archaeological Site Discovery and Preservation*

The discovery and preservation of archaeological sites in rapidly changing environments present significant challenges, particularly when these sites are obscured by dense vegetation or other natural and anthropogenic factors. This paper reviews the application of advanced remote sensing technologies, including lidar, aerial photography, and satellite imagery, in addressing these challenges. Utilizing new lidar data, we identified several previously unknown archaeological sites, many of which were covered by dense vegetation, demonstrating the technology's capability to penetrate forest canopies and reveal hidden cultural features. Through case studies from Maui, Hawaii, and the East Coast of the United States, we illustrate how these technologies have been employed to effectively identify, document, and protect archaeological sites under threat from urban development, climate change, wildfires, and natural erosion. The integration of these remote sensing methods with traditional archaeological approaches provides a comprehensive framework for the proactive management and conservation of cultural heritage. Our findings emphasize the importance of adopting advanced technological solutions to enhance the accuracy and efficiency of archaeological surveys, ultimately contributing to the preservation of invaluable historical and cultural resources in dynamically changing landscapes.

Spurr, Kimberly, and David Purcell (Museum of Northern Arizona)

[220] *Atomic Legacy: Documenting Historic Uranium Mining in Colorado Plateau NPS Units*

Cold War-era (1945–1991) uranium prospecting and mining profoundly affected the Colorado Plateau of North America, where uranium deposits are naturally concentrated. Recent archaeological inventory in Canyonlands National Park and Glen Canyon National Recreation Area focused on 21 historic uranium mines along with associated prospecting roads and camps. This project supported ongoing work by the Department of Energy Abandoned Mine Lands program to verify the condition and potential hazards of abandoned uranium mines, including radiation exposure to visitors. Additional mines and exploratory roads were documented during seven years of archaeological monitoring throughout Glen Canyon NRA. Placing the uranium mining related resources in their historic context was aided by archival research for an administrative history of Arches National Park that demonstrated frequent incursions to the park by uranium prospectors and the construction of a uranium ore processing mill just outside the entrance to the park on the banks of the Colorado River. Uranium prospecting brought national and international awareness of the formerly inaccessible and exotic landscapes of the Southwest, opened the land to explorers and exploiters, and left physical and sometimes toxic scars across once untrammelled wilderness.

St-Germain, Claire [373] see Gates St-Pierre, Christian

Stackelbeck, Kary (University of Oklahoma), Sara Getz (Oklahoma Office of the Chief Medical Examiner), Carlos Zambrano (Oklahoma Office of the Chief Medical Examiner), and Angela Berg (Oklahoma Office of the Chief Medical Examiner)

[75] *Not Who We Thought: Reassessing “Non-forensic” Cases in Oklahoma*

As of August 2024, there are 25,093 missing persons in the National Missing and Unidentified Persons System (NamUs), including 886 potential Missing or Murdered Indigenous People (MMIP). Most individuals (23,270) were last seen more than two years ago and, if found, may be represented by completely skeletonized remains. Both the Oklahoma Office of the Chief Medical Examiner (OCME) and the state archaeologist at the Oklahoma Archeological Survey (OAS) have responsibilities under the state's unmarked burials statute, which includes provisions to evaluate the forensic significance of inadvertently discovered remains. Some skeletal cases have no associated context or are otherwise equivocal. The OCME has implemented robust practices to assess new cases, but questions remain about legacy cases held by OCME and other agencies—including OAS—that were previously deemed “historic” or “archaeological.” In the past year, systematic review and testing of 43 of these cases resulted in reclassification of six individuals as modern and the identification of one Tribal member—missing since the 1980s. The authors share these results to raise awareness of this issue among others similarly engaged with the evaluation of human remains that are found outside their original depositional context. *****This presentation will contain some images of human remains.**

Stadnik, Marie [166] see Polyukhovych, Yuriy

Stafford, Thomas, Jr. [301] see Scott Cummings, Linda

Stahl, Ann (University of Victoria)

[380] *Compositional Practice in Turbulent Times: Investigating Ritually Charged Deposits in a West African Metallurgical Workshop*

The workshops of West African metallurgists were transformative locations where metals were forged and tools fabricated, at the same time as they were sites of problem-solving through divination, soothsaying, and healing. The social and knowledge networks of skilled metallurgists often reached beyond those of fellow community members and their workshops were sites of improvisational, compositional practice in arenas that scholars often parse as technological or ritual. A rich archaeological example comes from the site of Ngre Kataa in the Volta bend region of west central Ghana where, from the late thirteenth through the early sixteenth centuries CE, skilled metallurgists plied their skills in a single workshop location. Their practice resulted in the buildup of more than a meter of stratified deposits during times when peoples of the Volta bend experienced widening continental and intercontinental connections alongside changing precipitation regimes that culminated in prolonged drought. These ramifying networks provide context for analyzing ritually charged deposits emplaced within the workshop and a sprawling shrine that capped and closed metalworking in this location. My focus is on the dynamics of compositional practice that brought together local and exotic materials, forms, and things in ceremonially charged workshop strata during these turbulent times.

Stahl, Peter (University of Victoria)

[46] *Everyone Has a Plan: Reflections on Archaeological Model Building in the Neotropics*

The basic features of Donald Lathrap's vision of precolumbian cultural developments in South America remain relevant for contemporary archaeological discourse. Although some of his retrodictive suggestions have not survived subsequent scrutiny, his ideas still resonate, while formerly prevailing models have been largely discarded. With the benefit of hindsight from recent scholarship, it is easy to understand why; however, it is interesting and informative to explore the foundational insights that guided his ideas nearly 70 years ago.

Stahlhood, Shelby [94] see Kepka, Jessica

Stanish, Charles [282] see Tantaleán, Henry

Staniuk, Robert (Adam Mickiewicz University)

[31] *High Hopes: The Stratigraphic Model of the Early Iron Age Biskupin-Type Fortified Settlement in Smuszewo*

The Early Iron Age (800–600 BCE) of present-day north-central Poland was a time of rapid population aggregation in lakeshore settlements. Named after the eponymous site—Biskupin—these settlements were characterized by a common set of architectural traits: gates, ramparts, breakwaters, wooden streets, and row houses. These aggregations represent a unique, yet short-lived experiment in what is considered an egalitarian, high-density social organization during a period of increasingly individualized power structures. Presently, the scientific models of the emergence of these settlements are enigmatic, as the majority of the excavated sites remain poorly understood due to historical circumstances and methodological challenges. Viewed as the final evolutionary stage of the Lusatian culture, they are an unsolved puzzle of European prehistory outside of major academic interest. To challenge this, I will present the results of the stratigraphic analysis from an ongoing research project focusing on the site of Smuszewo, where legacy data from previous excavations is reanalyzed and integrated to provide a first, full stratigraphic model of one of the most spectacular sites in European prehistory. Results will be discussed in the context of demographic and architectural processes responsible for the creation of the site and its impact on the surrounding environment. *****This presentation will include images of human remains.**

Stansell, Ann

[336] *The Long and Winding Road: A Historical Archaeology of the Roosevelt Highway and Malibu Road Wars, Los Angeles and Ventura Counties*

A crowning achievement of road construction in the 1920s was the completion of the Theodore Roosevelt Memorial Highway (later designated Pacific Coast Highway) through Malibu in 1928. A wagon road along the beach, only accessible twice a day during low tide, had long been used by travelers. When the Rindge family purchased Rancho Topanga Malibu Sequit in 1887, they objected to trespassers over their land and

attempted to close the route. High fences were built along the ranch boundaries and line-riders, armed to the teeth, rode the ranch boundaries to keep out surveying parties. For years May Knight Rindge fought the Southern Pacific Railroad and the county and federal governments in court to prevent the building of a public road or railroad across her land. The booming population of Southern California motorists, however, created a rising demand for a coastal access, and Mrs. Rindge finally lost her suit. When construction of the road began in 1926, it proved nearly as challenging as the lawsuits for its acquisition. This presentation will discuss the history of the Roosevelt Highway and Malibu Road Wars and highlight remaining segments of the original highway within State Parks along the coast from Topanga to Point Mugu.

Stark, Miriam [61] see Carter, Alison

Stark, Sequoia [336] see Cook, Paris

Stark, Sören [80] see Ho, Joyce Wing In

Starkovich, Britt, Samantha Brown, Fei Yang (University of Tübingen), and Nicholas Conard (University of Tübingen)

[156] *An Analysis of Middle Paleolithic Fauna from Hole Fels (Swabian Jura, Germany)*

The sites of the Swabian Jura preserve long sequences of hominin occupation that span the Middle and Upper Paleolithic, including the oldest known art and musical instruments, which date to the Aurignacian period. Historically, we have thought of the Middle Paleolithic occupation of the region as being relatively ephemeral and low-density as compared to the Upper Paleolithic. In 2020, excavators uncovered rich Middle Paleolithic horizons at Hohle Fels that underlie layers dated to $62,500 \pm 4000$ BP. The horizons include lithics, faunal remains, bone retouchers, ample burned bone, and most notably, a leaf point, the first such artifact to be found in situ in the Swabian Jura in the modern era. In this paper, we present the faunal remains from the newly uncovered Middle Paleolithic layers at Hohle Fels. We do so by integrating zooarchaeology and ZooMS using a novel approach. We analyzed the assemblage from a taphonomic and taxonomic perspective using standard zooarchaeological techniques. We then selected specimens that were identifiable to anatomical element but were taxonomically ambiguous to analyze via ZooMS. The result is a more complete picture of Middle Paleolithic faunal exploitation strategies, including species-specific information on anthropogenic modifications and body part transport strategies.

Stasiak, Artur [379] see Meierhoff, James

Stauffer, Kaeleen, SJ Casillas (University of Colorado, Denver), Henry Bielenberg (University of Wisconsin, Madison), and David Hyde (Western Colorado University)

[65] *Ceremony and Ritual: Preclassic Maya Round Structures from the Medicinal Trail Community*

Excavations at the Medicinal Trail Community, an Ancient Maya farming village in northwestern Belize, have revealed two Late Preclassic round structures. One structure is from Group A and has a diameter of 3 m; it is located below the surface in the center of a formal residential group. The other is over 20 m in diameter and located below the surface in the center of Group M, a formal ceremonial center. In each example, the burial of the structures is associated with elaborate termination rituals including the placement of cache offerings. Structure A-Sub-1 was buried in the Late Preclassic, and the space was reorganized from ceremonial to residential, while Structure M-Sub-2 appears to have been buried in the Late to Terminal Classic. Generally considered to be a rare architectural form in the region, these open platforms are believed to be used in ceremonial performances and may be ancestral shrines. Data from the round structures at the Medicinal Trail Community support this interpretation. This poster will describe each of the round structures and will compare them to others in the Maya area.

Steber, Matthew (Chronicle Heritage), Angela Huster (Chronicle Heritage), and Ralph Burrillo (Bureau of Land Management)

[68] *Beyond Perry Mesa: The Archaeology of the Greater West Verde Region, Arizona*

In 2022–2024, Chronicle Heritage surveyed 3,700 acres along 70 miles of road between Cave Creek, Perry

Mesa, and the Verde River on behalf of the Tonto National Forest. The survey resulted in an over 50% increase in the number of known sites in the project area and a 30% increase in the known room count. This area has seen relatively little archaeological work. However, it comprises a key zone between settlement clusters along the Verde River and on Perry Mesa, particularly during the Pueblo III–IV transitional period. Our work found a much more continuous settlement pattern than expected and strong cultural similarities to the Perry Mesa Tradition, making the latter much less of a settlement island than typically thought. The survey also demonstrated south-to-north shifts in settlement over time and similarly shifting south-to-north patterns of cultural interaction. The results provide new insights into migration patterns and cultural interaction in central Arizona.

Steber, Matthew [68] see Roady, Kegan

Stech, Edward [188] see Winter, Margaret

Steele, James [382] see Osorio, Daniela

Steele, Laura (UNM), Martina Manchado (Universidad Nacional de Cuyo), and María José Ots (CONICET, Universidad Nacional de Cuyo)

[89] *“Ripples of Imperialism”: Understanding Foodways, Peoples, and Identities on the Margins of an Empire* Imperialism has had a dramatic impact on the lives and economies of directly colonized and subjected peoples. Many scholars have demonstrated that this impact takes a variety of forms depending on the proximity of the imperial center, imperial goals, the surrounding geography, and abundance of natural resources, among other factors. Limited research has focused on how peoples on the margins of empires were affected by, or responded to, imperial processes on their borders. Our work is focused specifically on foodways of Indigenous peoples who lived on the southern margins of the Spanish imperial expansion in what is known today as west-central Argentina. We explore this ripple effect of imperialism on Indigenous peoples by analyzing faunal remains at the archaeological site of Cormallín located in Mendoza province, Argentina, from the AD mid-1400s to the AD mid-1700s. We are able to reconstruct foodways through time using radiocarbon dating to better understand how Indigenous peoples adapted to, resisted, and/or benefited from imperial expansion.

Steele, Teresa (University of California, Davis)

[281] *Comparing Northern and Southern African Coastal Adaptations through Faunal Remains*

Decades of zooarchaeological research on faunas from coastal sites along the Cape of South Africa have documented human subsistence patterns during the Pleistocene Middle Stone Age (MSA) and the subsequent Terminal Pleistocene and Holocene Later Stone Age (LSA). MSA humans regularly hunted all sizes of bovids and equids. Fur seals, penguins, tortoises, and ostrich eggs were also commonly consumed, but most notable is the high abundance of mollusks such as limpets and mussels. Despite their reliance on coastal resources, MSA people did not regularly accumulate smaller resources such as small mollusks, fish, or rock lobsters. Arguments have been made about the importance of these coastal resources for human evolution, but until recently, very few samples from other coasts were documented. Over the past 20 years renewed excavations in northwestern Morocco have provided opportunities for comparison. Here people also consistently hunted a range of bovids and equids, and they regularly consumed limpets and mussels, while infrequently taking smaller resources. In both regions, humans adapted to changing environments, and ecological differences shaped variation between southern and northern African subsistence. We lack early LSA assemblages in both regions, which limits full characterization of diachronic trends in human ecology.

Steele, Teresa [373] see McCartin, Madison

Steele, Teresa [69] see McNeill, Patricia

Steele, Teresa [373] see Mooneyham, Erin

Steele, Teresa [281] see Worthey, Kayla

Steelman, Karen (Shumla Archaeological Center), Carolyn Boyd (Texas State University), and James Dering (Texas State University)

[174] *New Advances in Dating Rock Paintings*

New research is overcoming challenges associated with dating pictographs. The Shumla Archaeological Chemistry Laboratory uses a novel approach with two independent methods to provide secure dating results for paintings. The first method employs plasma oxidation to isolate organic carbon directly from the paint layer for accelerator mass spectrometry ^{14}C measurement. The second method treats mineral accretion layers with phosphoric acid to isolate calcium oxalate for plasma oxidation cleaning, combustion, and ^{14}C measurement to obtain minimum and maximum ages for the paintings. We have recently obtained 60 direct radiocarbon dates and 20 indirect oxalate dates for Pecos River style pictographs in Texas. Results demonstrate that Pecos River style painting persisted for thousands of years during the Middle and Late Archaic periods (5500–1350 cal BP). A key component of this research involves collaboration, including formal art analyses and examining mural stratigraphy with Harris matrices. This ensures optimal locations for sampling so that dating results provide comprehensive information with minimum impact.

Steeves, Paulette (Algoma University)

[165] *Un-erasing the Indigenous Paleolithic: Rewriting the Ancient Past of the Western Hemisphere (the Americas)*

In the Americas, human occupation prior to 14,000 years ago has historically been denied by archaeologists. The traditional Western archaeological story argues that Indigenous people have been in the Western Hemisphere for 12–15 kya. Archaeologists' denial of the deep Indigenous past of the Americas has cleaved Indigenous people's links to their homeland and created them as recent immigrants to the Americas. In studying paleo-environmental evidence, paleo-mammalian migrations, and oral histories and weaving them through archaeological evidence of Pleistocene-aged archaeological sites, I argue that Indigenous people were present in the Western Hemisphere before the beginning of the Last Glacial Maximum of 24,000 kya. It is clear that many archaeologists now accept an earlier time frame for initial human occupations in the Western Hemisphere. However, it remains to be discussed how racism and bias have impacted the field of archaeology in the Americas, Indigenous communities, and the general population. Reclaiming and rewriting Indigenous histories and relinking Indigenous people to their ancient homelands is a path to healing for Indigenous people. Understanding Indigenous people's links to homelands in the deep past leads to decolonizing minds and hearts and informs and addresses racism and discrimination in contemporary populations.

Stein, Gil (University of Chicago)

[49] *Tiptoeing across the Threshold: Early Copper Use and Interregional Interaction in Chalcolithic Greater Mesopotamia*

The earliest evidence for copper artifacts in Northern Mesopotamia (N Syria, SE Anatolia, and N Iraq) derives from the Ubaid period and the Uruk period. These technological developments were contemporaneous with the operation of two major economic systems of interregional exchange: the "Ubaid interaction sphere" and the "Uruk Expansion." This paper contrasts the beginnings of copper metallurgy geographically between the north and south, and chronologically between the Ubaid and the Uruk periods. Evidence for early copper use in Ubaid period is limited to north Mesopotamia, and was almost totally absent in the south. Variation in patterns of copper metallurgy adoption seems to have been related to broader organizational patterns of interregional interaction, and the related spread of other types of material culture—notably the administrative technology of stamp seals in the emerging complex societies of north Mesopotamia.

Stein, Kristoffer (EnviroSystems)

[270] *Survey in the Grand Canyon-Parashant National Monument: Emerging Insights from Growing Geodatabase- and Landscape-Based Approaches*

EnviroSystems Management has surveyed over 30,000 acres and recorded over 1,000 sites in the Grand Canyon-Parashant National Monument. The company's growing geodatabase is beginning to illustrate interesting settlement pattern changes from the Late Archaic to the late Pueblo II period. While insights garnered by inquiry into geodatabases offers a high resolution of comparative datasets, working and living in such remote areas also offers a unique experience of cultural landscapes and evokes the significance of place.

CRM pedestrian survey of large landscapes such as those in the monument present unique opportunities for professional archaeologists to participate in land management grounded in positivist conceptions of data, as well as engage in landscape-based approaches. In this paper I will highlight interesting insights emerging from our geodatabase coupled with on the ground experiences of the cultural landscapes we have surveyed.

Stein, Martin [340] see Higgins, Howard

Stemp, W. James (Keene State College)

[283] *Maya Coastal Chipped Stone Tool Trade at Marco Gonzalez and San Pedro, Ambergris Caye, Belize*

Given the absence of chert and obsidian sources on Ambergris Caye, Belize, lithic raw materials and finished tools had to be acquired from the mainland. Chipped chert and obsidian demonstrate different trade patterns; however, once tools made from these raw materials were acquired, they were treated as curated technologies. Moreover, although Marco Gonzalez and San Pedro were sites of different sizes and primarily occupied at different times, some of the strategies to acquire, use, and maintain stone tools by the Maya at these locations were the same. This suggests that certain technological strategies were recognized by the Maya of Ambergris Caye as the most successful, regardless of time or place. Some of these same strategies have been observed at other sites on the caye, thus strengthening the argument that the Ambergris Caye Maya developed consistent widespread strategies to address the problem of the lack of locally available toolstone. Since Ambergris Caye is not large, undoubtedly the Maya at some sites were socioeconomically connected to one another and inhabitants from some sites may have moved to other sites over time, bringing their tools and strategies with them.

Stephens, Ann (University of Wyoming)

[85] *New Spatial Interpretations of Rock Art: A Case Study in the Bighorn Basin, Wyoming*

This project examines the influence of landscape in distinguishing rock art traditions within the Bighorn Basin, Wyoming, with a focus on the Dinwoody and Outline Pecked and Incised styles. Instead of analyzing the art itself, this study investigates the spatial distribution and environmental contexts of rock art sites to discern whether cultural and temporal factors influence provenance. The Dinwoody tradition dated to the early Archaic is primarily located west of the Bighorn River, the Outline Pecked and Incised tradition, dating to the Late Prehistoric, is predominantly situated on the basin's eastern edge, indicating distinct cultural and temporal origins. Through the application of resource-based surfaces, this research incorporates variables such as water sources, elevation, wildlife habitats, and viewsheds to evaluate the ecological significance of site locales. Utilizing comparative methodologies from studies conducted in England, Norway, and Australia, the results of this study elucidate how rock art locations reflect the lifeways and environmental interactions during their period of their creation.

Stephens, Jay [80] see Fenn, Thomas

Sterner, Katherine (Towson University), Virginie Renson, and Robert Ahlrichs (Jacobs Engineering Group Inc.)

[284] *Sourcing Galena from a Multicomponent Site in Maryland Using Lead Isotope Analysis*

Galena has been recovered from precontact archaeological sites throughout the Eastern Woodlands, principally in mortuary contexts. The presence of galena in these contexts, the general lack of cultural modification to galena specimens recovered from archaeological sites, and the often-long distances between galena deposits and primary geologic sources has led to its categorization as ceremonial and/or exotic. Depending on the region, galena is found at sites ranging in age from the Middle Archaic to the Early Historic period. In Maryland, until recently, only one galena specimen has been recovered from an archaeological context. In 1999, shovel tests in a multicomponent Middle-Late Archaic and Late Woodland site in Frederick County, Maryland, recovered a single cube of galena. It is unclear which occupation the galena is associated with. In the summer of 2024, surface collection at a newly documented Late Archaic and Late Woodland site in Baltimore County recovered two galena specimens. This project uses lead isotope analysis to source these two galena specimens to better understand their context within the site and the region.

Stevenson, Freeman (Teamsters Local 222), Bryan West (United Archaeological Field Technicians), Elliot Helmer (Industrial Workers of the World, Mid-Valley GMB), and Michael Lucas (Industrial Workers of the World)

[108] *Shovelbums at the Bargaining Table: The Return of Unions to the CRM Industry*

From the founding of the CRM industry—through the formation of the United Archaeological Field Technicians (UAFT) in the 1990s, to the ever-present grumble in the hotel parking lot after a long day of shovel probes—the topic of unionization has lurked behind the scenes of the industry of academics turned business owners. After the industry’s “victory” over the major unionization efforts of the turn of the century, the topic had seemingly drifted into the realm of an impossibility. Then, in 2023, two CRM companies found themselves losing union elections as their field crews in regional offices organized and voted for affiliation with locals of the International Brotherhood of Teamsters, one of the largest labor unions in the country. In the midst of a national resurgence in labor activism, the topic of unionization is once again confronting the CRM industry. We aim to present an overview of union efforts both past and present, the legal case for field crew unions, and counter the arguments that claim that CRM field crews are beyond organization or that the industry cannot suffer a union presence, and highlight potential benefits to the industry that would stem from its acceptance of unions.

Steward, John [320] see Goring, Daniel

Stewart, Andrew (Strata Consulting Inc.)

[277] *Topography as a Dimension of Settlement in the Caribou Inuit Homeland*

Caribou Inuit on the Canadian tundra camped where the barren-ground caribou were expected to come—on migratory routes, especially at crossings on the Kazan River in the summer and fall. Camp locations were subject to change from year to year, even though many places are considered “traditional,” and some are associated with large archaeological sites today. Spring crossings depended on river ice and open water conditions. Fall crossings depended on weather and wind direction, changing if the animals thought wolves or people awaited them. Because of this uncertainty, a family might be at different locations along the course of the river annually. More reliable, perhaps, was a tendency to move seasonally between high and low places—hills in spring, anticipating the arrival of caribou from the forest, and the shoreline in summer and fall, where caribou, crossing from the opposite shore, now going south, were intercepted. In this way, topography, even subtle differences in elevation, may be a predictor of seasonal settlement. To evaluate this proposition, I consider how different types of features associated with seasonal activities, are distributed at different elevations across the landscape.

Stewart, Basil

[227] *Secondary Burial on the Shelf: A New Approach to the Care of the Dead in Museums*

This study examines the care of the dead in museums at a newly imagined intersection of death work and curation. Recent concerns surrounding the ethics of human remains collections have resulted in many museums reevaluating their policies on access, display, and research of human remains and burial objects. However, these often reactionary projects are still aligned with the standardized collection practices that are firmly rooted in the colonial ontology which birthed the modern museum. Can interment in a museum be viewed as a part of the deceased’s mortuary journey? This question prompts examination into what separates museum practitioners who care for the dead from “death workers”: people who work with the dead and dying such as morticians, funeral directors, and death doulas. If there is no separation and museum practitioners can be included under the umbrella of death workers then the care of the dead in museums and interpretations of their mortuary status have space to evolve to meet the growing challenges of ethical stewardship. This study establishes new case studies of museums in the United States to understand the potential and limitations of this new approach to the stewardship of the dead.

Stewart, Basil [227] see Jones, Olivia

Stewart, Brian [69] see Munene, James

Stewart, Haeden**[342]** *Walls and Footprints: Thinking between Infrastructures and People on the Borderlands*

On top of McGuire's foundational work on archaeology of labor, class, and critical heritage, some of his most influential recent scholarship has been on archaeology of undocumented migration across the US/Mexico border. Drawing from my own work as part of the Undocumented Migration Project as well as more recent work on the archaeology of mining in the Sonoran Desert, I emphasize two parts of McGuire's scholarship within this field. The first is an abiding interest in connecting contemporary phenomena with broader historical trends, while never losing sight of the very different stakes between the deep past and the present. The second is a productive turn toward the massive infrastructures of the present. Together, these trends have proved essential for the development of a contemporary archaeology that is valid and relevant and has proven very influential on my recent scholarship on the massive mining infrastructures of extraction and waste disposal in the Sonoran Desert. Drawing inspiration from McGuire's recent and older work, I try to think about histories of labor and migration in landscapes filled with the massive infrastructures of the state and capital: not only border walls and roads and ball mills but also toxic tailings.

Stirbu, Franceska [215] see Wright, Sterling

Stocking, Tera (University of Kentucky)**[63]** *Uncovering the Artisans of Ayiin Winik: Using Paleodermatoglyphs to Determine Demographic Characteristics of Ceramic Producers*

Craft production is essential in understanding the past through material culture; it is imbedded in the socioeconomic and political systems of past societies. Understanding the division of labor among crafters is therefore valuable in analyzing social systems and should not be taken for granted but further explored. However, certain craft industries, such as ceramic production, have a paucity of evidence of potter demographics. This difficulty is compounded when attempting to identify divisions of labor based on age, sex, and gender, as archaeological interpretations often depend on inferences from contemporary examples whose relevance to ancient societies remains uncertain. Current dermatoglyph research suggests that a combined analysis of ridge breadth and ridge density provides a reliable method for identifying both the age and sex of these individuals. This study analyses fingerprints, which reveal statistically distinct ridge breadth and ridge density measurements among children and adolescents, adult males, and adult females, to determine the demographics of ancient Maya potters at the site of Ayiin Winik in the Three Rivers Region of northwestern Belize.

Stockton, Amanda (Wayne State University)**[216]** *History by the Bottle: Prohibition-Era Beverage Bottles from the Gass Saloon, Hamtramck, Michigan*

During Hamtramck, Michigan's heyday, the city had more saloons per capita than any city in the United States. In the nineteenth and early twentieth centuries, places like the Gass Saloon were central to daily life for residents of the industrial city, serving as hubs for business, entertainment, political discourse, and community growth. Archival records from the 1920s confirm the Gass Saloon operated between 1908 and 1927, including as an illegal bar during Prohibition in Michigan (1917–1933). In 2022, archaeologists excavated at least 181 beverage bottles from the Gass Saloon, including many bottles dating to the Prohibition era and labeled as containers for soda and other nonalcoholic beverages. This paper analyzes glass beverage bottles manufactured during the Prohibition era and integrates historical and archaeological data to suggest the likelihood that the containers concealed illegal alcohol.

Stodder, Ann, Lexi O'Donnell (University of New Mexico), Catrina Whitley (Bioarch Support LLC), Kyle Bocinsky (University of Montana), and Kenneth Vernon (Center for Collaborative Synthesis in Archaeology)**[385]** *Through the Biocultural Lens: Resilience, Vulnerability, and Lived Experience in the Ancient Southwest*

This study takes a multiscalar approach to understanding human development and lived experience in the Southwest, marshaling archaeological, paleoenvironmental, bioarchaeological, and epidemiological information about populations, communities, and individuals. Well-documented climatic changes are associated with large-scale migrations and processes of both dispersal and aggregation in the region. But, as recognized in

bioculturally based sustainability science, the examination of local contexts like built environment, terrain, climate fluctuations, and social processes reveals the underpinnings of lived experience and well-being. Paleoepidemiological data are used to characterize aspects of morbidity and health parallel to those enumerated in the United Nations Sustainable Development Goals (water security and quality, peace, adequate diet, gender equity) and the Human Development Index (housing free from indoor and ambient pollution, dental health, functional disability). Innovative new studies that bridge the gap between clinical data and bioarchaeological observations are revising the interpretation of pathological conditions that have long been recorded in human remains, transforming the interpretation of community health and lived experience. This series of contextualized examples from the bioarchaeological record tell stories of both resilience and vulnerability in the long history of occupation in the northern Southwest. This presentation does not include images of human remains.

Stoessel, Luciana [60] see Martinez, Gustavo

Stoker, Owen [101] see Mehta, Jayur

Stoll, Marijke (Indiana University, Bloomington)

[269] *Frontiers y Refugios: The In-Between Places of Oaxaca and Mesoamerica*

Created by both geography and politics, frontier regions are dynamic zones where people, practices, ideas, and objects from different homelands are exchanged in novel and distinct ways. They are often productive sites of ethnogenesis through the integration, disintegration, and/or entrenchment of social boundaries and markers of identity. Frontier areas are not commonly associated with Mesoamerica, except for the somewhat artificial boundaries that scholars have placed at its extreme south and north. However, we contend that a multiplicity of frontiers existed throughout Mesoamerica, located in the permeable spaces between the physical and social territories that were both controlled by regional powers and occupied by peoples who were able to switch their loyalties and relationships as needed, and every variation in between. Using the Nejapa region specifically and Oaxaca more generally as a case study, this presentation will demonstrate how the frontier concept can theoretically and methodologically be a useful tool for investigating and interrogating multiple areas of Oaxaca and Mesoamerica where ethnolinguistic and social boundaries were highly permeable and why.

Stone, Anne (Arizona State University), Mario Apata (Arizona State University), Margarita Reyes Madrid (ICBM, Universidad de Chile, Santiago), Kelly Knudson (Arizona State University), and Melissa Wilson (Arizona State University)

[339] *Paleogenetic History, Diet, and Health in Early Chinchorro and Later Agricultural Populations from the Coast of Northern Chile*

This study aims to understand the genetic history of early archaic Chinchorro and later agricultural populations from northern Chile and to assess the impact of agriculture on the oral microbiome. We collected teeth ($n = 125$) and dental calculus ($n = 70$) samples from coastal and inland sites spanning 7000–500 years BP and representing the Archaic, Formative, and Intermediate and Late cultural periods. From these, DNA was extracted, made into single stranded DNA libraries, and sequenced. We also performed a human genome capture to improve data recovery for reconstructing population history. Our initial results show well-preserved ancient human and microbial DNA. DNA preservation was good from teeth samples for all cultural periods, including from early Chinchorro sites, Camarones-14 (7000 yBP) and Morro de Arica (5500–3600 yBP). Mitochondrial DNA analyses show links to populations found today in the southern cone. We found changes in the oral microbiome communities after the agricultural transition. Specifically, strains associated with oral diseases (*Pseudoramibacter alactolyticus* and *Tannerella forsythia*) are more common. Overall, our study contributes to a better understanding of the cultural and genetic diversity of these local coastal populations of the Atacama Desert, and the emergence of local oral pathogens and dietary transitions in the past.

Stone, Pamela, Clair Ralston, and Debra Martin (University of Nevada, Las Vegas)

[45] *Bridges between the Living and the Dead: Landscapes of Resistance, (Re)Memorialization, and Alternative Narratives*

For many of us, the final the resting place of our ancestors can anchor us to the landscapes of our families' histories and to our community. For victims of settler colonialism and creeping genocide, whose homelands were stolen and burial places desecrated or erased, the recovery of their ancestors can offer validation and support their histories that were otherwise obscured or erased by settler colonial practices. The Historic Belén Bioarchaeological project holds the descendant community at its center, bringing forward their dead as testimony to their long regional connection. Descendants' place-based knowledge and stories combined with archaeology; bioarchaeology; and archival, genealogical, and ethnohistoric records create new ways to think about how the dead can connect long-held memories and serve to underscore the perseverance of the ancestor-descendants' resistance to erasure. We discuss how the dead stand in testimony to make visible the heritage, history, and stories of a community, offering new and alternative narratives within the larger landscapes of New Mexican and North American Southwest histories. This is a story of how descendants may recover and renegotiate their history learning directly from their ancestors' bodies to reclaim their connections to the land.

Stone, Samantha, Loren Davis (Oregon State University), Matthew Des Lauriers (California State University, San Bernardino), and Alexander Nyers (Oregon State University)

[292] *Archaeological Implications of Late Pleistocene to Early Holocene Paleoceanographic Change in the Cedros Island Region, Mexico*

The Late Pleistocene to early Holocene (~20,000–7000 cal BP) was marked by warming climates, rapidly rising sea levels, shifting oceanic conditions, and profound paleo-landscape changes along North America's Pacific coast. Dramatic transformations in the coastal environments of Baja California's Cedros Island influenced the human ecology of early foragers. Our research presents new insights into the paleoenvironmental context of Cedros Island, focusing on paleo-landscape evolution under extreme marine transgression and corresponding changes in marine productivity and ocean temperatures recorded in shell carbonate $\delta^{13}\text{C}$ and $\delta^{18}\text{O}$. Geographic information systems modeling reveals that the most significant landscape changes occurred during the Bølling-Allerød Interstadial (~14,700–12,900 cal BP), with continued, though decelerated, marine transgression during the Younger Dryas and early Holocene, with inundation of the land connection between Cedros Island and Punta Eugenia ~10,000 cal BP. Marine shell isotope records from early Cedros Island sites show a corresponding evolution in marine productivity. These changes accompany tremendous coastal landscape shifts due to marine transgression and enhance our understanding of human ecology on Cedros Island.

Stoner, Edward [245] see Hoppes, Kelsey

Stoner, Wesley (University of Missouri)

[289] *Formative Period Ceramic Production and Exchange in the Basin of Mexico*

Deb Nichols has been integral in reconstructing ancient trade relationships in the Basin of Mexico and beyond. My work with her has greatly augmented the study of ceramic exchange for the earliest contexts in central Mexico. I will focus on our study of Early to Late Formative ceramic production systems and touch briefly on how ceramic exchanges fueled the development of increasingly complex societies. We sampled Early, Middle, and some Late Formative contexts across central Mexico. I use NAA and petrography to (1) study the compositional variability across the region, (2) infer production locations, and (3) assess interactions among sites in the region and imports coming in from other parts of Mesoamerica. The data are used to gain a better understanding of the development of early complex societies in the region.

Stoner, Wesley [289] see Rodríguez-Alegría, Enrique

Storey, Glenn (University of Iowa)

[106] *Hirth and the Tabernarius: Shopkeepers and the Urban Economy*

In his magisterial tome, *The Organization of Ancient Economies: A Global Perspective*, Kenneth Hirth made many observations based on his study of Greco-Roman patterns of commerce. He knew that the archaeology of Roman cities has provided literally hundreds of examples of shops and shopfronts, many embedded in the big fancy houses along the streets of Pompeii, Herculaneum, Ostia, and even a few from Rome itself. In contrast

to the Aztec Empire, the highly monetarized economy of the Roman Empire developed basic banking institutions offering credit, known examples generally involving substantial sums of money. In thinking about Roman shops, Hirth suggested that a shopkeeper (the *tabernarius*) must have provided “informal credit” to his daily, well-known customers from the immediate neighborhood. In assessing this question, I suggested that if that were so, somewhere in the Roman legal codes this form of credit should be a topic of discussion, but specific citations have not been featured in the literature. So, a search of the appropriate legal databases on this question needed to be carried out—yet another example of “things we don’t know about the Romans.” Here I present the surprising results of this search and conclude that Ken was “right yet again.”

Stowe, Michael (Department of Defense), and Mark Willis (Flinders University)

[92] *Searching for Pueblos among the Dunefields: Drone Imaging and Remote Sensing Investigations at Pueblo Settlements on White Sands Missile Range, New Mexico*

In the fall of 2023, the White Sands Missile Range (WSMR) Cultural Resources Team contracted Versar Inc. to conduct a unique project to assess the potential for using remote sensing technologies to analyze the subsurface characteristics of buried cultural sites to support National Register of Historic Places nominations within several locations within White Sands Missile Range. Geophysical remote sensing and aerial multispectral imaging methods were utilized at Cottonwood Pueblo (LA 175) over several months and within several localities to identify and define buried pueblo rooms and room blocks that were not visible on the site surface. Cottonwood Pueblo encompasses a community of five pueblos whose occupation spans the Pueblo life way in southern New Mexico (AD 1000–1450). The effectiveness of various geophysical methods for identifying buried features was compared. This exploratory study will be the first in which several known prehistoric pueblos at WSMR will be evaluated using these new and innovative remote sensing techniques.

Straioto, Haruan (Museum of Archaeology and Ethnology, University of São Paulo), Brandi MacDonald (Archaeometry Laboratory, University of Missouri Research Reactor), Eliane Nunes Chim (Museum of Archaeology and Ethnology, University of São Paulo), and Andre Strauss (Museum of Archaeology and Ethnology, University of São Paulo)

[391] *Geochemical Analysis of Lithic Raw Material in the São Francisco River Basin*

In the São Francisco River Basin there is evidence of human occupation since 14.0 ky cal BP. Models of dispersal suggest an intensification of occupied areas around 11.0 ky cal BP, followed by regionalization after two millennia. The study of lithic technology, as the major evidence available, is crucial to understand these long-term processes. Distinct technological organizations have been identified since the early period in the region. These differences can be related to the access to high-quality raw materials, which, in turn, is associated with the mobility patterns of the groups. Groups with lower mobility and restricted access to locally available raw materials organize their technological schemes to produce tools using those materials. If the locally available raw materials are not of high quality, tools that require superior raw materials will not be produced. In this study, the potential sources of raw material and lithic artifacts from three archaeological sites with dates from the Early Holocene are geochemically characterized. The objective is to assess the extent to which the technological organization correlates with the availability of raw materials in the site regions and to explore how this information can elucidate the mobility patterns of the groups during the period.

Strani, Flavia [190] see Williams, Nancy

Straus, Lawrence (University of New Mexico), Manuel Gonzalez-Morales (IIIPC, Universidad de Cantabria), Fernando Igor Gutierrez-Zugasti (IIIPC, Universidad de Cantabria), and David Cuenca (IIIPC, Universidad de Cantabria)

[57] *Western European Technology in “Pre-Clovis” Times: A View of the Magdalenian from El Miron Cave (Cantabria, Spain)*

Following the Solutrean experiment in large, leaf-shaped, concave-base, or shouldered projectile points in SW Europe during the Last Glacial Maximum (25–21 cal kya), there was a shift to Magdalenian (21–14 cal kya) hunting technology including antler points with microblade inserts tipping javelins propelled with spear-throwers. In El Miron Cave, microblades were struck on-site from small prismatic or pyramidal cores of high-

quality flint from Cretaceous outcrops along the present Atlantic shore near Bilbao, ca. 60–70 km distant. These were transported to the site via either intergroup trade or direct procurement. (Inhabitants also obtained marine mollusks and distinctive hematite ochre from an outcrop on the present shore and used in an 18,800-year-old human burial in the cave.) In addition to weapon tips, Magdalenian lithic assemblages include varying amounts of “domestic” and “maintenance” tools like flint endscrapers, burins, perforators and knives and—particularly in the earliest layers—larger, “archaic”-appearing denticulates, notches, and sidescrapers often made on locally available mudstones, quartzites, and limestone. Some levels represent repeated, long-term, multifunctional occupations; others were short-term, specialized camps. As characteristic of the Magdalenian culture throughout Western Europe, El Miron has yielded works of both portable and even rock art, some of the latter possibly “marking” the burial of the “Red Lady.”

Strauss, Andre [121] see Chim, Eliane

Strauss, Andre [391] see Straioto, Haruan

Strawn, James (University of Georgia), D. Shane Miller (Mississippi State University), Derek Anderson (Cobb Institute of Archaeology), and Stephen Carmody (Troy University)

[101] *Landscape Use during the Middle Holocene in the Upper Tombigbee River Valley, Northeast Mississippi*

The Middle Holocene, marked by the Hypsithermal, was a time of warmer and drier climate conditions that impacted subsistence strategies and settlement patterns. There is evidence of increased social complexity, including the development of long-distance exchange networks, the establishment of territories, and more defined social structures. This period also saw the emergence of distinct regional cultural identities and practices. Previous analysis of Early Holocene landscape use in the Upper Tombigbee River Valley in northeast Mississippi indicates a movement toward riverine habitats, illustrating how populations adapted to shifting resource availability. This study builds on previous research to examine landscape use in the Upper Tombigbee River Valley during the Middle Holocene by integrating data from archaeological site distributions, temporally diagnostic projectile points, lithic raw material sources, fossil pollen, and faunal remains. This multiproxy approach highlights the connection between environmental changes and cultural responses in shaping human behavior during this period.

Strehlau, Hannah (Bournemouth University)

[211] *In the Absence of Material Culture: An Archaeological Perspective on the Ancient Human Footprints from White Sands National Park, New Mexico*

Fossilized human footprints at White Sands, dated to between 23,000 and 21,000 years BP, have attracted scientists from various disciplines since their discovery. The tracks have been dated, biometric inferences from specific tracks have been made, and trackway kinematics explored. So far, no material culture has been found or associated with this ichnological trackway, and, likewise, no material culture is known from that time period because of the lack of equally old sites in the United States. This poses a major challenge in understanding the people behind the fossilized footprints at White Sands. This talk aims to present the inferences on material culture that we dare to make despite the very absence of it. This is possible through ethnographic comparisons and the presence of features in the ichnological record other than footprints. Part of this discussion will be the interpretation of linear features associated with human footprints as well as the possible presence of ancient footwear. The research presented in this talk is part of the AHRC project “Peopling of the Tularosa Basin,” based at Bournemouth University, with Matthew Bennett and Sally Reynolds as PIs.

Stresemann, Caitlyn

[127] *Wear and Tear: Preliminary Use-Wear Analysis of a Hematite Core from Hell Gap National Historic Landmark*
Hematite, often referred to as ochre, is a common occurrence at early American sites in the Plains and Rocky Mountain regions of North America. The mineral appears in the archaeological record as multifunctional, possibly used for ritualistic and domestic activities. This research examines a hematite artifact (HG 14W199-11-157) from the Hell Gap National Historic Landmark, located in Guernsey, Wyoming. Hematite is found in abundance in excavation units from Hell Gap’s Locality I. Hematite cores, pigment smears, and pigment-covered artifacts have been discovered in the Folsom level at Locality I. This research

utilizes low-level microscopy and a 3D model to examine the use-wear patterns of the hematite artifact (HG 14W199-11-157) to explore the original use of the artifact. Results will contribute to our understanding of early American hematite processing on the Plains.

Streseman, Caitlyn [230] see Jones, Averi

Stríkis, Nicolás [121] see Chim, Eliane

Stromberg, Kirie (Yale University)

[348] *Mirrors of Music: Dōtaku Bronze Bells and the Late Middle Yayoi Ritual Reform (ca. 100 CE)*

This paper reevaluates the major size increase and shift from use of stone molds to clay molds in dōtaku (bronze bell) production in the Late Middle Yayoi. Over 500 dōtaku bronze bells traditionally dated to the middle through late Yayoi (ca. 200 BCE–250 CE) have been passed down or excavated, predominantly from the Kinki region of Honshu. They became increasingly large throughout the Yayoi period, ranging in size from about 20 cm to over a meter in height. Scholarly interpretations of this size increase and ornamentalization process have gone largely unchanged since 1970, when Tanaka Migaku argued that changes in Yayoi political institutions catalyzed the development of functional “bells to be heard” *kiku dōtaku* into large, symbolic “bells to be seen” *miru dōtaku*. However, Tanaka’s paradigm does not consider information archaeologists now have regarding both newly excavated bells and an explosion in dōtaku-related paraphernalia, including miniature examples (*shō dōtaku*) and pottery imitations also produced. When lines of evidence are considered in tandem, a vision of the Late Middle Yayoi as a period of major ritual reform emerges. What the author calls a “mimetic shift” was at the core of this moment in the formation of social complexity in Japan.

Strongitharm, Madelyn [61] see Barry, Jack

Stroth, Luke (University of California, San Diego), Mario Borrero (University of California, San Diego), and Geoffrey Braswell (University of California, San Diego)

[325] *Trends in Animal Resource Use among the Classic Maya of Southern Belize*

In this paper we describe the animal resources targeted by the ancient Maya of southern Belize and identify changes in species composition through time, as aligned to our recently published ceramic chronology. For the ancient Maya, animal proteins complemented a diet largely based on cultivated plant resources. Large mammals were hunted and often eaten in public meals, and small mammals were opportunistically gathered from garden plots. Fishing communities provided marine resources to inland sites. Beyond diet, skin, shell, teeth, and bone all provided material for tools and crafts. We present data from Nim li Punit, Lubaantun, and Pusilha, and describe a trend of increasing quantity and variety of marine resources used during the Late and Terminal Classic periods. We distinguish between material collected from architectural fill and material collected from placed deposits and surface contexts, which illustrate how certain species were used in cuisine and crafting. Finally, we speculate on the increasing importance of feasting activities to reinforce social distance in Late Classic southern Belize. This reflects a larger trend during the Late Classic where a growing number of local elites used a variety of tactics, including feasting, monumental construction, and claiming of the *ajaw* title, to support their authority.

Strother, Dexter [114] see Snitker, Grant

Stuart, David (University of Texas, Austin)

[97] *The Inscribed Spring: Hieroglyphs, Royal Ritual, and the Sacred Waters of Chapultepec*

Chapultepec is well known as a sacred mountain, water source, and ceremonial locale within the landscape immediately surrounding Tenochtitlan. Still visible today on the hill’s eastern slope is the sculpture of the deified portrait of Moteczomah Xocoyotzin, facing toward the main precinct and overlooking a large natural spring that once fed the famous aqueduct leading into Tenochtitlan. This paper will offer new interpretations of this all-important “water-mountain” (*altepetl*), focusing on previously unreported hieroglyphs carved into the boulder outcrop at the source of the former spring, below Moteczomah’s portrait. These include a year

date and a toponymic place glyph possibly designating the spring itself. The close resonances between Chapultepec and the sacred mountain of Tezcotzingo, 40 km away, will also be reexamined. The Chapultepec spring and its associated sculptures and glyphs offer a new perspective on Mexica royal ceremonialism within a localized sacred landscape. These features specifically point to Moteczomah's role as a deified performer "in nature," and as the human embodiment of a singularly important water-mountain.

Sturm, Jennie (Statistical Research Inc.), and Maeve Herrick (Statistical Research Inc.)

[276] *Mapping the Fort Lewis Indian Boarding School Cemetery*

The cemetery associated with Old Fort Lewis in southwestern Colorado is a complex burial space that served military personnel, civilians, and students and staff at the Fort Lewis Indian Boarding School during the late nineteenth and early twentieth centuries. As part of the State of Colorado's Native American Boarding Schools Research Program, understanding this cemetery's role in the boarding school included mapping directives to locate and identify the cemetery, its boundaries, and the number and layout of graves. This talk presents the methods and approach of the intensive archaeological remote sensing investigation into the Fort Lewis cemetery, which included aerial methods (drone-based lidar and RGB/NIR photography) and ground-based methods (ground-penetrating radar and magnetic gradiometry). We also discuss how we approached the delicate balance of discussing these methods and sensitive results in ways that were respectful, appropriate, and scientifically grounded with our Tribal partners, stakeholders, and the Fort Lewis College community.

Sturm, Jennie [123] see Herrick, Maeve

Styuflyayev, Maksym [166] see Polyukhovych, Yuriy

Suarez, Nicholas (University of Pittsburgh), Claire Ebert (University of Pittsburgh), Bryan Hanks (University of Pittsburgh), Julie Hoggarth (Baylor University), and Jaime Awe (Northern Arizona University)

[223] *Combined Geochemical and Contextual Analysis of Ancient Maya Obsidian Blades in Western Belize*

Long-distance trade was a key factor in the development of complex Maya sociopolitical systems. Exotic goods were used for quotidian and ceremonial purposes, and controlling trade has been hypothesized as one way that elites gained and maintained their influence. While geochemical analysis of obsidian is a key method for examining its exchange, prior research demonstrates the necessity of incorporating contextual data to elucidate how obsidian was consumed, and to accurately track temporal trends in supply and demand from distant sources. Here we present combined portable X-ray fluorescence (pXRF) and contextual data from over 4,000 obsidian artifacts from Preclassic to Terminal Classic (ca. 900 BC–AD 900/1000) contexts from three sites in the upper Belize River Valley region of the Maya lowlands (Baking Pot, Cahal Pech, and Lower Dover). Contextual data, including hierarchical (e.g., elite, intermediate elite, and commoner), architectural-locational (e.g., monumental vs. residential) and behavioral-locational (e.g., workshops, caches, discard) data are employed to explore how different types of obsidian were used by different actors within the upper Belize Valley communities. This analysis has broad implications for understanding how exotic goods were consumed at different levels of the social hierarchy and how consumption and assignment of value shifted over time.

Subia, Mateo [105] see Argoti Gómez, Juan

Suckling, Elise [238] see Reardon, Emily

Suda, Yoshimitsu (Nagasaki University)

[223] *Developing a Japanese Obsidian Database and Chemical Standards for Obsidian Provenance Analysis*

Reliable chemical analysis and accurate obsidian collection are crucial for successful obsidian provenance analysis in archaeology. Since 2011, we have been collecting obsidian samples and conducting analyses using WDXRF in Japan. To date, over 1,000 obsidian samples have been collected, and the chemical composition of approximately 500 samples has been determined through WDXRF analysis. These data have been compiled

into an obsidian database, and the analyzed obsidian chips are stored in small plastic boxes, serving as reference materials for each source. Moreover, we selected 38 obsidian specimens from these chips to establish standards for calibration and chemical analysis, focusing on pXRF and EDXRF methods. In this presentation, we will showcase the procedures for chemical and provenance analysis of obsidian artifacts using EDXRF in our laboratory.

Sugiyama, Nawa (University of California, Riverside), Christine France (Smithsonian Museum Conservation Institute), Erin Thornton (Washington State University), Edsel Robles (Project Plaza of the Columns Complex), and Teresa Hsu (Smithsonian Institution)

[376] *Household-Level Management of Small Game at Teotihuacan, Mexico: Zooarchaeological and Isotopic Proxies from Plaza of the Columns Complex*

In the absence of large domesticates, one of the New World's largest cities seems full of paradoxes. At Teotihuacan, the two known domesticates, the dog and turkey (17%), and the largest readily available herbivore, deer (11%), were not major contributors to animal protein, yet there is no evidence of elevated cases of animal protein deficiency in the human remains. Continuing previous scholarship on rabbit management in the city, we present zooarchaeological and isotopic results of animal management from a state-coordinated feasting deposit at a civic administrative center in the urban core at Plaza of the Columns Complex. Small game seems to have provided most of the predictable resources to feed the masses. We hypothesize that household-level management of small game, including rabbits, quail, and turkey, were adaptive strategies in the urban core, providing predictable and accessible animal protein to a highly metropolitan and densely occupied city. Variability in the isotopic values indicative of degrees of anthropogenic diet, even among domestic turkeys, likely originate from diverse acquisition strategies (household, market, and opportunistic hunting), scale of operation (for immediate household consumption versus market exchange), and urban density.

Sugiyama, Saburo [97] see López Luján, Leonardo

Sullivan, Kelsey (University of California, Riverside), and Kenichiro Tsukamoto (University of California, Riverside)

[231] *The Socioeconomic Dynamics of Ancient Maya Large-Scale Chert Biface Production at the Took' Witz Group at El Palmar, Campeche, Mexico*

This paper discusses the intracommunity socioeconomic dynamics of the large-scale lithic industry at Took' Witz, a small rural community located near the ancient Maya city of El Palmar, Campeche, Mexico. Our multiyear studies revealed that people in Took' Witz produced millions of chert bifaces, supporting nearby raised-field intensive agriculture. While significant production occurred at workshops, our study of three households—the East, West, and South Plazuelas—identified production activities within some households as well. This presentation will report the data analyses from the 2019–2023 field seasons, including surveys, shovel testing, and test excavations. The study demonstrated that the lithic industry was a primary factor in the socioeconomic differences between the three plazuelas. The households with intensive production activities had notable differences in architectural size from the plazuela that did not. Nevertheless, the artifacts demonstrated very similar access to material culture, especially nonlocal goods, throughout the community. These results are consistent with other studies in the Maya area, which identify architecture as a significant marker of socioeconomic inequality. Our research established the importance of the lithic industry within Took' Witz by demonstrating that household participation in production conferred socioeconomic advantage over other community members.

Sullivan, Lauren (University of Massachusetts)

[52] *Maya Pottery and More: Fred Valdez Jr.'s Influence on Mesoamerican Archaeology*

Through decades of fieldwork, mentorship, and teaching Fred Valdez Jr. has left a lasting impact on the field of Mesoamerican archaeology. From his early work as a student at sites such as Cerros, Colha, and Rio Azul to his more recent role as the project director of the Programme for Belize Archaeological project, Fred has created a community of scholars that would not be otherwise be linked together. It is in these many connections that a more comprehensive understanding of the Maya has been possible. This paper highlights

some of his many contributions to our understanding of Maya pottery. While pottery analysis by nature is focused on detail, Fred's emphasis on a regional outlook has encouraged a much more holistic understanding of the Maya. Most importantly, he has served as a source of inspiration to me and many others.

Summerhayes, Glenn [121] see Hogg, Nicholas

Sunday, Godwin [169] see Hannold, Cynthia

Sundstrom, Linea (Day Star Research)

[368] *Untangling the Roots of Bias: Western versus Native American Thought-Ways in Rock Imagery Research*
Approaching Native American rock imagery through the lens of post-Enlightenment Western thought-ways has led to interpretations at odds with Native American thought-ways. To better contextualize Native American rock art and to bring archaeological studies more into alignment with Native American teachings, several of these philosophical differences are discussed here with specific examples showing how they have influenced rock imagery research. These include many aspects of thought: hierarchical versus horizontal distribution of power, bigger is better versus the power and potential of all things, male domination versus complementary gender roles, binary versus spectral categorizing, land ownership versus land use, dogmatic versus nondogmatic belief systems, individualism versus collectivism, attitudes toward violence, the role of ancestors in the lives of living people, and viewing rock surfaces and rock imagery as static and inert or alive and ever-changing.

Surette, Flannery (Okanagan College), Joseph Jeffrey Werner, and Dakota Simpson

[190] *The Molly Jolly Collection: Lithic Sourcing, Museum Collections, and Student Engagement in the Okanagan Valley, British Columbia*
[WITHDRAWN]

Surovell, Todd (University of Wyoming)

[175] *The First Rule of Flintknapping*

This paper explores a key difference between modern and prehistoric flintknapping evident in the archaeological record. Modern knappers generate dense concentrations of flakes, while such clusters are rare in prehistoric sites, suggesting shorter reduction episodes in the past. One likely reason for this difference is that modern flintknappers generally do not use the pieces they produce; production is the end goal. In contrast, tool use was the goal in prehistoric settings. In that light, I argue that this difference in flintknapping can be explained by the idea that prehistoric flintknappers attempted to maximize the utility of the pieces they produced while minimizing the loss of potential utility in the pieces they reduced. This idea can be simplified to what I call the "First Rule of Flintknapping," or "Only remove as many flakes as necessary." I argue further that prehistoric flintknapping might have mimicked modern knapping when raw material was abundant and in the case of formal core reduction. In both instances, the cost of the loss of potential core utility was reduced, allowing prehistoric knappers to engage in extended bouts of reduction.

Surovell, Todd [57] see Mackie, Madeline

Sutter, Richard (Purdue University, Fort Wayne), and John Verano (Tulane University)

[45] *Landscapes of Death or Deaths for the Landscape? Huaca Capture, Spectacular Violence, Sacrifice, and Consubstantiation at the Huaca de la Luna, Pyramids at Moche Polity (AD 400–850) of the North Coast of Peru*
Political landscapes are often the focus of polity-sponsored feasts and performative rituals that reinforce power and subjugation. For the pyramids at Moche (AD 400–850) on the north coast of Peru, previously reported bodies interred within the Huaca de la Luna were those of elite, nonlocal male warriors. In accordance with the notion of "like-for-like," foreign enemy combatants sacrificed at Huaca de la Luna symbolized and embodied the competing huacas from which they were captured. As the physical representations of these huacas, the combatants' curated bodies and body parts served as powerful symbols of political power and efficacy. These symbols were eventually interred within the Huaca de la Luna's plazas through ritual acts that represented the "feeding" and subjugation of the executed combatants' respective

huacas by the Huaca de la Luna. Consequently, the treatment of their bodies represented a form of “huaca capture,” and—by extension—the brutal and spectacular public execution, postmortem treatment, and interment of captured foreign warriors from competing huacas at Huaca de la Luna conveyed a coherent political message through theatrical rituals performed within a landscape that reflected and reified the power and legitimacy of the leaders of the pyramid at Moche over defeated huacas. *****This presentation will include images of human remains.**

Suzuki, Shintaro

[166] *Isotopic Proveniencing at Altar de Sacrificios*

Isotopic proveniencing has become an everyday practice in bioarchaeological studies. Strontium isotopes have been the most widely used in this field since the 1990s, revealing essential aspects of the ancient societies of Mesoamerica. However, some recent studies have indicated that several areas of Mesoamerica share their local ranges of the baseline data, which limits our interpretations of the migratory dynamics of prehispanic habitants. In this presentation, we introduce our preliminary results of strontium isotope measurements of 22 individuals from the Altar de Sacrificios. We will discuss who may be nonlocal and, if nonlocal, from where they may have come to the site. Offering several alternatives for possible origins, we demonstrate interpretive limitations of the isolated use of strontium isotopes and explore new methodologies for isotopic measurements of other elements. *****This presentation will include images of human remains.**

Swanson, Eric [183] see Puckett, Neil

Swetnam, Thomas [375] see Roos, Christopher

Swidorowicz, Roger (Manoa Foundation), and Jose Miguel Perez-Gomez

[291] *The Canaima Complex: Uncovering New Rock Art Sites and Cultural Insights in Canaima National Park, Venezuela*

This study reveals the discovery of previously unknown rock art sites in Canaima National Park, southeastern Venezuela, some of which are associated with lithic artifacts, and examines their cultural significance. The research places these findings in context by comparing them with existing rock art and lithic tools from Upuigma-tepui, as well as from the Guiana Shield, Orinoco Basin, and northern Amazonia, to provide insights into the cultural groups that once inhabited the region. The newly identified pictograms are found on a boulder deep within a dense forest at the slopes of the Kusari-tepui and on a cliff overlooking Canaima village, while the petroglyphs are located at the Ariwe-merú rapids of the Caroní River and along the Carrao River. Preliminary analysis suggests a possible connection between these new pictograms and lithic artifacts with those discovered in a rockshelter at Upuigma-tepui, 160 km southeast of Canaima. Additionally, stylistic analysis reveals similarities with sites and lithic production along the Caroní River, the Guianas, and northeastern Brazil. Given their cultural importance, this study recommends further research, dissemination, and the conservation of these rock art sites within Canaima National Park, advocating for their recognition as world heritage sites.

Swope, Karen [270] see Leckman, Phillip

Szpak, Paul [278] see Akogun, Moses

Szpak, Paul [288] see Derian, Alexandra

Szumilewicz, Amy

[374] *Standardized Icon or Alter Egos? Reassessing the Perceived Uniformity of Form and Material Essences of Funerary Masks at Sicán*

While masks and masking rituals are well-documented in the archaeological, ethnographic, and ethnohistorical records in the Andes, few examples are as recognizable as the funerary “masks” of the Sicán/Lambayeque culture. The repetition of striking features, often on planes of gold, has made these masks a mainstay in museum collections. However, despite—or perhaps because of—their ubiquity, analyses often assume that redundancy and abstraction equate to cultural homogeneity, centralization, or even monotheism, and their architectural construction may be dismissed as shoddy or piecemeal, leading to the conclusion that

minimally, this is a group that prioritized quantity over quality. This paper challenges the perceived iconographic and material uniformity of Sicán masks by synthesizing compositional analysis with new observations on sculptural techniques and stylistic details from a set of contextualized sheet metal masks excavated at the site of Sicán (CE 900–1100). By comparing masks found with individuals to representations of the visage in associated clay, textile, and painted objects, we can then contend with the complex and inherently agentive role of masks, not just in marking group affiliation, but also their potential to signify alterity within the group.

Szweda, Naomi [224] see Valdez, Richard

Szymanski, Jan (University of Warsaw)

[335] *San Isidro: A Large Preclassic Center in Western El Salvador*

Five field seasons carried out since 2018 at San Isidro, Sonsonate, El Salvador, yielded enough data to formulate first interpretations regarding its size, chronology, and possible identities. It appears to be an entirely Preclassic settlement covering well over 6 km² and controlling an important route between the Pacific coast near modern Acajutla with the interior. Judging by the material remains, San Isidro maintained ties with both the Highland Maya to the west, and the Nicaraguan and Costa Rican cultures to the east. San Isidro formed a Community of Practice with Preclassic Tak'alik Ab'aj in Guatemala, manifested through usage of very similar large figurines. However, the largest structures at the site appear to have used for community rituals rather than ruler veneration. In that, San Isidro is similar to some Preclassic settlements from both El Salvador and west-central Honduras. We argue that there is not enough evidence to place western El Salvador in the Maya world prior to the post-Ilopango times. Rather, there must have been a unique local tradition, not merely a fusion between larger entities but a true actor on the cultural map of the Preclassic Central America.

Tackney, Justin [297] see Ward, Emily

Tafari, Mary Anne [167] see Mogesie, Semineu

Taimagambetov, Zhaken [332] see Iovita, Radu

Taimagambetov, Zhaken [332] see Namen, Abay

Taivalkoski, Ariel

[235] *Birds of a Feather: Suggestions for Best Practices in Taxonomic Identification*

Avian bones from archaeological sites have traditionally been overlooked in zooarchaeological analyses in favor of domesticates or larger animals. While an increased number of archaeological avian bone analyses have been conducted in the past 20 years, taxonomic identification methods often vary between researchers. Identification methods can skew interpretation widely. For instance, subtle pathologies may be overlooked as individual variation if appropriate numbers of reference specimens are not used. Over 10 years ago, an argument was made to develop a more standard set of procedures for zooarchaeological identification (Driver 2011). This presentation will discuss common barriers to accurate taxonomic identifications, provides suggestions for best practices, and argues that zooarchaeologists should move toward a standardization of methodologies.

Takács, Katalin [31] see Gyucha, Attila

Takigami, Mai, Kazuhiro Uzawa (University of East Asia), Yuji Seki (National Museum of Ethnology), Daniel Morales Chocano (Universidad Nacional Mayor de San Marcos), and Kinya Inokuchi (Saitama University)

[282] *The Development and Expansion of a New Subsistence System in the Late Formative Period*

Multi-isotope analyses of human and animal remains at the Pacopampa site have unveiled a significant transformation in food resource utilization during the Late Formative period. The increased consumption of C₄ plants and the use of domesticated camelids were previously implied in the study of the Kuntur Wasi site. However, these two phenomena were regarded as independent events—the rise in maize consumption was attributed to enhanced food production and chicha use linked to the development of ceremonial centers,

while the use of camelids was associated with the expansion of long-distance trade. Studies at Pacopampa, however, have revealed that these are interconnected phenomena; specifically, the emergence of a lowland llama rearing system supported by C₄ plants forming a llama-maize agropastoral system. Recent research suggests that this new subsistence system rapidly expanded during the Late Formative period, indicating the existence of extensive long-distance networks between religious centers. In this study, we present an analysis of food resource exploitation during the Middle and Late Formative periods, focusing on the Pacopampa complex. By comparing it with other Formative sites, we will explore the timing, reasons, and factors behind the development of this new subsistence system.

Talaverano Sanchez, Arlen Mildred [45] see Raillard Arias, Daniela

Tamburro, Paul (Brown University), and Stephen Houston (Brown University; Peabody Museum of Archaeology and Ethnology, Harvard University)

[303] *Touch Me Not: Touch and Transgression among the Classic Maya*

What were the spatial patterns of Classic Maya touch? A recent study in *Psychological and Cognitive Sciences* analyzed “social touch” across several European cultures and concluded that emotional closeness to an individual affects the bodily zones where touch is permitted, playing a key role in developing social cohesion. However, these findings may not hold true across space and time. This paper focuses on the Classic Maya and the concept of “canonical” or normative touch through a study of relevant imagery. Among the Maya, royal bodies rarely make physical contact with others. Instead, touch highlights status- or gender-driven transgressions of subordinate bodies: warriors pull captives by the hair, aged deities fondle younger women, and women cradle animals.

Tamura, Toru [82] see Kadowaki, Seiji

Tang, Li

[167] *Isotopic Evidence Reveals Heterogeneous Dietary Adaptations across the High-Altitude Tibetan Plateau*

The Tibetan Plateau has long prompted archaeological interest with regard to how human societies could have occupied this climatically harsh and resource-poor environment. Full-scale permanent occupation of the interior plateau after 3500 cal BP has been variously linked to barley-based agriculture, pastoralism, or mixed agropastoralism, but direct data for long-term human dietary reliance has been sorely lacking. Here, we report stable isotope data from 248 human, animal, and plant specimens from 35 archaeological sites across Tibet and southwestern Qinghai, spanning from 3740 to 596 cal BP. Our results support that pastoral products and barley were both critical to highland foodways in most regions, but also suggest human dietary adaptations varied significantly between regions. We argue that it was spatially and temporally variable, rather than uniform, adaptations that supported Late Holocene settlement and population growth on the interior Tibetan Plateau, providing broad-based food security at the “roof of the world.”

Tantaleán, Henry (Universidad Nacional Mayor de San Marcos), Carito Tavera-Medina (University of Barcelona), Charles Stanish (USF), José Roman Vargas (Paris I Panthéon-Sorbonne University), and Joseph Zamora (Universidad Nacional Mayor de San Marcos)

[282] *Cupisnique y Salinar: Nuevas investigaciones arqueológicas en el Valle de Chicama y áreas cercanas*

En esta ponencia se revisan las diferentes investigaciones relacionadas con el denominado periodo Formativo (1800-200 aC) en el valle de Chicama y áreas cercanas. Asimismo, se presentan las nuevas evidencias generadas mediante prospecciones y excavaciones realizadas por el Programa Arqueológico Chicama en los últimos cinco años, enfatizando en temas como la cronología absoluta y relativa, la construcción del paisaje social, la arquitectura monumental y doméstica, los contextos funerarios y la materialidad social, en especial de la cerámica, de las comunidades humanas relacionadas con lo conocido en la literatura arqueológica como Cupisnique y Salinar. Adicionalmente, se realizan algunas comparaciones y reflexiones con respecto a los fenómenos sociales sincrónicos del sitio serrano de Pacopampa.

Tantaleán, Henry [182] see Roman Vargas, José

Tarlea, Alexandra [215] see Wright, Sterling

Tashmanbetova, Zhuldyz [332] see Dupuy, Paula

Tautunu, Ta'iao [113] see Cochrane, Ethan

Tavarez, Glenis [233] see Curet, L. Antonio

Tavera-Medina, Carito (University of Barcelona)

[185] *Between Class and Ethnicity: The Experience of Women in the Archaeology of the Central Andes*

The countries of the Central Andes are diverse in their class, ethnic, and gender compositions, as well as in how these identity categories intersect in practice. In this paper, I analyze whether this social reality—which partly began with Spanish colonization and took root during the rise of the young nations—influenced the practice of archaeology, particularly the roles of women within the discipline. By examining case studies from Chile, Peru, and Bolivia, I explore the positions women occupied during the development of archaeology as a field of study. I focus on how their class and ethnic backgrounds intersected with their gender and sexual identities and whether these factors shaped their access to certain networks. Additionally, I investigate how Feminist, Indigenous, and Afro-descendant social movements impacted the integration of women in each of these countries. This paper is presented within the framework of the Herstory project (ref. PID2023-149477NB-I00).

Tavera-Medina, Carito [182] see Roman Vargas, José

Tavera-Medina, Carito [282] see Tantaleán, Henry

Taylor, Collin [88] see Barker, Kristin

Taylor, Samantha (New South Associates)

[178] *A Tale of Two Bunkers: Archaeology at Fort Fisher (31NH7), Kure Beach, New Hanover County, North Carolina*

This paper will discuss the 2023 excavations of a magazine and underground tunnel in Traverse 8 of Fort Fisher (31NH7) in New Hanover County, North Carolina. Fort Fisher was a large Confederate earthwork that was constructed, primarily by enslaved and conscripted Native American labor, in 1861 south of Wilmington, North Carolina. Fort Fisher, often called the Gibraltar of the South, was the location of the First Battle of Fort Fisher (December 1864) and the Second Battles of Fort Fisher (January 1865), the latter of which is considered one of the most decisive battles of the Civil War. In 2023, archaeologists from New South Associates Inc. (New South) excavated Traverse 8 of Fort Fisher, uncovering a magazine and a 7 m segment of the tunnel that extended across the entirety of the fortifications. The resulting data was used to compare the architectural, spatial, and functional elements observed in Traverse 8 to that of the bombproof previously excavated in Fort Fisher's Traverse 1 in the 1980s. Additionally, the data recovered from Fort Fisher was used to compare the site to contemporary forts across the southeast United States, including Fort Wade in Mississippi and Fort Sidney Johnston in Alabama.

Taylor, Sarah [273] see Cutright, Robyn

Taylor, William [86] see Ojediran, Olumide

Taylor, William [54] see Windle, Morgan

Taylor Riccio, Kia

[309] *Recipes in Transatlantic Contexts: Mountain Chicken and Ouicou*

This paper examines the archaeology of Dominican creole cuisine by taking an in-depth look at one dish: mountain chicken (*Leptodactylus fallax*) paired with *ouicou*, or cassava beer. Using this dish as a touchstone of the early modern Lesser Antilles, I explore the archaeological possibilities of transcontinental gastronomy amid an ongoing Columbian Exchange. Specifically, I address how the mountain chicken and *ouicou* may have

manifested in archaeology sites across the Caribbean and why this endemic cultural delicacy is under severe threat in the twenty-first century. Building off my earthenware and microbotanical analysis in La Soye, Dominica—a multicomponent Kalinago cultural center dating from the sixteenth to eighteenth century—I argue for the importance of Caribbean creole cuisine in intangible heritage dialogues. To enrich this data, I also incorporate research from similar early modern sites in the Caribbean.

Teerhag, Fabiana [157] see Bond Reis, Lucas

Teeter, Wendy (Santa Ynez Band of Chumash Indians)

[108] *Archaeology after Consultation, Reciprocity, and Responsibility*

The goals of Indigenous archaeology have called for the incorporation of descendant community voices before and with the starting of a potential project. What will your project do to help descendant communities; how will they be incorporated and share in the work, scholarship, presentations, funding? These are ethical and simple questions that need to be taught and asked from the first archaeology class. Time to address the history of the creation of archaeology and museums, their destructive and extractive processes that creates harm. What is going to be done differently? There are new laws trying to force ethics, but I believe many researchers have already taken this approach and successfully incorporate descendant community voices in their work. This talk will examine and interview a number of archaeologists that practice Indigenous methods and protocols and what approaches they take that can be taught in the classroom and adopted now. Legislation aims to solve problems, but it is often more successfully addressed by modified behaviors and practices.

Teja, Melissa, Kevin Cabrera, Rylee LaLonde, and Gabriel Wrobel (Michigan State University)

[321] *Estimation of Sex by Discriminant Function Analysis for Maya Skeletal Remains*

The poor preservation of skeletal remains in the Maya region creates a pressing need for alternative approaches to determine skeletal sex, especially when the pelvic and cranial morphoscopic features traditionally used to determine skeletal sex are fragmentary or absent. Discriminant functions are statistical tools that utilize measurements of skeletal robusticity to classify sexual dimorphism and estimate sex and are particularly useful when working with fragmentary remains. This study builds on the corpus of previous discriminant functions generated from long bone measurements by adding equations based on measurements of patellae, tali, and calcanei from Maya sites in central and northern Belize and Copan, Honduras. Together, these functions represent a reliable resource enabling researchers to quickly and accurately estimate sex from fragmentary Maya skeletal remains.

Tejerizo-García, Carlos (University of Salamanca)

[342] *“The point, however, is to change it”: Marxist Archaeology and Praxis in Spain through Randall McGuire’s Work*

For those of us who seek to apply Marxist thought to our academic career and personal life to interpret and—at least try to—change the world, Randall McGuire’s work is an unquestionable reference. The wide range of topics he has tackled throughout his large career and his personal compromise with the communities involved in them has opened multitude of possibilities not only for compelling interpretations of the archaeological record but also for a critical and political commitment with the social reality through cultural heritage. In this contribution, I will firstly explore how his work has been received in Spain and how it has helped to develop a Marxist archaeology in the country in the last decades, analyzing the historical, political, and academic particularities of the Spanish context. Second, I will discuss two case studies, those of the early medieval peasant societies and the archaeology of the Spanish anti-Francoist guerrilla, building on some of Randall’s concepts. Finally, I will make some suggestions as to how to continue his theoretical and methodological work in the future.

Tepley, Gabriella

[190] *Studies of Migration Pathways and Cultural Change in Southern New Mexico: A Look into Andrecito Pueblo in the San Andres Mountains from the El Paso Phase in AD 1300*

Andrecito Pueblo, located within a valley in the San Andres Mountains, holds a special significance in the

history of migration in the North American Southwest. Andrecito Pueblo exhibits signs through its architecture and artifacts of the people who lived there and their association with groups to the east, suggesting the people of Andrecito Pueblo moved from east to west, settling in a valley that was frequently used as a pathway for migrants between eastern and western New Mexico. Andrecito Pueblo may be a staple in the theory surrounding migration of the Jornada people in the late AD 1300s in the El Paso phase. This is the study of the pathway between the Sierra Blanca Mountains to the east and the San Andres Mountains to the west through the surrounding cultures and how they apply to Andrecito Pueblo.

Tercsak, Cara [322] see Petras, Elysia

Terlep, Michael (Forest Service)

[353] *Conjoined Twins or Alternative Personas: An Analysis of Polycephaly within Southwest Rock Imagery*
 Researchers, most recently Crown and colleagues (2016), have long highlighted the significance of polydactyly (having more than five digits on a hand or foot) within rock imagery and material culture across Mesoamerica and the American Southwest. Anthropomorphic and zoomorphic figures displaying polycephaly (multiple heads) is another frequent depiction across Mesoamerica and American Southwest rock imagery and material culture. While we currently lack paleopathological cases of polycephaly and/or conjoined twins in North American prehistory, such individuals would have likely held considerable importance and status. Globally, medical reports and artistic renderings of polycephaly/conjoined twins date back at least 2,000 years and were often incorporated into mythology. Alternatively, polycephalic depictions may reflect dual or multiple symbolic or pragmatic roles, genders, or personas of individuals within a community. This presentation explores depictions of polycephaly within Southwest rock imagery and proposes that such imagery reflected actual or allegorical accounts of conjoined twins or alternative personas. This presentation shows images of infant conjoined twins born prematurely and/or stillborn. *****This presentation will include images of human remains.**

Terlep, Michael [298] see Bryce, William

Terry, Karisa, and Masami Izuho (Tokyo Metropolitan University)

[292] *Tracing Late Pleistocene Human Movements in and across NE Asia and North America through Stone Tool Technological Markers*

Recent studies coupling archaeological materials and human genetic markers indicate the earliest North American occupations derived from NE Asia during the late Pleistocene, roughly 21,000–14,000 BP. Details of the process of human movements within and between these continents are unclear. Some (e.g., Buvit et al. 2021; Davis and Madsen 2020) suggest that late Pleistocene Paleo-Sakhalin-Hokkaido-Kuril (PSHK) peninsula and Honshu Japan may be the origin of the founding population into North America based on stone tool assemblage similarities alongside timing of population out-movements from this region and in-movements to NE Asia, Beringia, and North America. Here, we utilize cladistic analysis to trace stone tool technological elements that human groups utilized within their technological systems as markers, including core reduction techniques and point types, from several of the earliest reliably ¹⁴C dated sites (23,000–14,000 cal BP) throughout NE Asia and western North America. The data indicate that technological markers from all sites are rooted in the earliest sites of PSHK; however, radiation of specific markers out of PSHK into other areas of NE Asia and North America followed distinct patterns. Furthermore, the specific character and distribution of certain technological markers may also be associated with types of regional ecozones human groups resided.

Thacker, Paul (Wake Forest University)

[156] *Upper Paleolithic Landscapes, Settlement Systems, and the Longue Durée*

Published scholarship of the Upper Paleolithic foregrounds the archaeology of cave deposits, larger archaeological sites, and unusual discoveries, an overrepresentation that biases the regional analysis of Late Pleistocene settlement systems. This presentation demonstrates the analytical necessity of systematically sampling and characterizing short-duration sites and archaeological palimpsests when building regional models of land use. Our comprehensive, total coverage survey and excavation project in the Rio Maior drainage of central Portugal reveals that Gravettian foragers intensively utilized all landforms across the valley, creating

several different site types including specialized knapping sites near the Azinheira Ridge for gearing up activities and moderate-duration base camps with an array of activity areas. In contrast, Magdalenian hunter-gatherers occupied short-duration campsites located along the mid-valley ecotone, a pattern consistent with the hypothesis of increasing residential mobility through the Upper Paleolithic. This case study demonstrates how integrating ephemeral archaeological sites and large lithic palimpsests into regional Upper Paleolithic datasets facilitates models of changing land use and technological organization that otherwise would be nearly impossible to develop accurately.

Thakar, Heather [235] see Domic, Alejandra

Thakar, Heather [289] see Neff, Hector

Theodoropoulou, Tatiana (CNRS), Gabriele Carenti (CEPAM, CNRS, Université Côte d'Azur), and Matthieu Ghilardi (CEREGE, CNRS)

[345] *Eight Thousand Leagues of Coastline and How Many Sites? A Methodological Insight into Assessing Shifting Seashores, Marine Resources, and Socioeconomic Systems in Prehistoric Mediterranean*

The Mediterranean constitutes an ecological and cultural palimpsest, a region of intense, millennia-long occupation as well as a precious archive of environmental changes and refugia-phenomena since the LGM. Although cultural sites from later periods are abundant and offer a rich dataset of coastal marine exploitation, the place of coastal environments and marine ecosystems in the socioeconomic systems of prehistoric Mediterranean groups is less well documented. This is mainly due to the radical changes of the coastline since the end of the LGM, including submerged coasts or prehistoric sediments buried under alluvia, that literally erased signs of human occupation along the Mediterranean coast and hinder the mapping of coastal prehistoric sites. This inevitably creates a partial or skewed image of how coastal communities interacted with these environments, especially with respect to marine resources utilization, as many sites currently located at the coastal fringe actually lied at some distance away from the coast. This paper discusses the methodological problems encountered in this region and offers a synthesis of available geomorphological and zooarchaeological data collected during the ERC-funded program MERMAID.

Thepboriruk, Kanjana [226] see Moran, Alia

Thomas, David (American Museum of Natural History), and Erick Robinson (Desert Research Institute)

[280] *Spirit Cave Resilience: How do We Explain 10,000-Year Continuities?*

Paleoindians buried Spirit Cave Man in a Nevada cave, and archaeologists excavated these remains in 1940. The Fallon Paiute-Shoshone Tribe filed a NAGPRA claim requesting repatriation of the Spirit Cave ancestor they call The Storyteller. After a two-decade legal impasse, the tribe made the gut-wrenching decision “under duress” to permit DNA testing. When the results documented a 10,000-year genetic continuity “without complete population replacement,” The Storyteller was repatriated within a month. A parallel story characterized the Confederated Tribes of the Colville Reservation agreement for the DNA testing that directly facilitated the repatriation and reburial of Kennewick Man/The Ancient One. While many tribes see DNA analysis as a scientific tool of colonialism, the agonizing—and successful—Colville and Paiute collaborations helped pave the way for similar alliances throughout the Americas. Such archaeological-Indigenous collaborations help reinforce and legitimize tribal objectives including establishing of long-term genetic continuities, validating tribal oral histories, furthering repatriation efforts, and underwriting legal claims for treaty rights—while ensuring Indigenous communities retain control of their genetic data. Applying resilience perspectives to Spirit Cave genetics also helps identify some moribund concepts and assumptions that have long effectively blinded Great Basin archaeology to this remarkable record of continuity.

Thomas, Julian (University of Manchester)

[342] *The Influence of Randy McGuire on British Archaeology*

Over the course of his career, Randy McGuire has been one of the most cogent advocates for a Marxist archaeology, while engaging in positive debates with other theoretical traditions. This advocacy has been conducted at a theoretical and a practical level, while maintaining a position that archaeology itself represents

a political practice. For this reason, his work has proved influential outside of the United States. In this contribution I will attempt to evaluate the impact of his ideas on both historic and prehistoric archaeology in the United Kingdom.

Thompson, Amy (University of Texas, Austin), and Keith Prufer (University of New Mexico)

[51] *The Nested Nature of Inequality in Classic Maya Cities: Continuums of Cooperative Neighborhoods to Despotic Rulership*

Recent research suggests that locations on the continuum of collective to despotic forms of governance correlate with degrees of inequality. Among more despotic forms of governance, certain individuals disproportionately accrue resources, increasing wealth inequality. However, how governance affects different sectors of society may vary. These transitions and differences in wealth are visible in the archaeological record and can be tested geospatially and statistically. Here, we assess the nested nature of varying forms of power, authority, and governance within a community through time. We focus on transitions in nested scales of governance and inequality at Classic Maya (250–900 CE) polities in southern Belize. At the polity-leadership scale, movement from more collective cooperation to more coercive cooperation, or despotic governance wherein rulers must provide concessions, occurred with increasing population density and stress on resources. Districts located within these ancient cities acted as microcosms of the polity, wherein founding families generated wealth through time, ultimately becoming local despots. However, within neighborhoods, more cooperative forms of kin-based governance likely persisted despite the overarching shifts in governance at the polity-scale. To assess these hypotheses, we use differential access to resources and house size metrics to evaluate shifts in governance through time at nested spatial scales.

Thompson, Amy [107] see Ploetz, Chris

Thompson, Amy [51] see Prufer, Keith

Thompson, Christine [189] see Nolan, Kevin

Thompson, Jessica (Yale University), Niguss Baraki (George Washington University), Jonathan Reeves, Kaye Reed, and David Braun (George Washington University)

[279] *Rethinking the Role of Elephant Carcasses in Early Hominin Foraging Decisions*

The Paleolithic record has many examples of elephant carcasses in association with stone tools. In some cases, there is further behavioral evidence of hominin exploitation in the form of cut marks, spatial distribution and representation of skeletal parts, and/or depositional context. Most analyses have focused on the quality of evidence for behavioral associations and/or mode of acquisition. Regardless of whether elephants were hunted or scavenged, their carcasses represent a concentration of resources on a scale that is orders of magnitude above most other resources. Rather than considering them as temporary foraging opportunities where all calories are either consumed over a short period or ultimately wasted, they may have been continually exploited over the many weeks of their persistence on the landscape. Thus, behavioral ecological models should consider the implications this has for hominin foraging decisions such as the duration of time spent at particular places, planning foraging rounds, and evaluating foraging risks. New evidence for Oldowan exploitation of an elephant carcass from Ethiopia suggests that these model considerations should extend to the start of the Pleistocene.

Thompson, Jessica [235] see Keller, Hannah

Thompson, Jordan (Washington State University), John Blong (Washington State University), Rachel Horowitz (Washington State University), and Roger Amerman (Whitman College)

[107] *Nimipuu Subsistence Cycle in the Bitterroot Mountains, USA: Integrating Ethnogeological and Archaeological Knowledge*

Mountain environments and resources have played a significant role in Indigenous cultural and subsistence lifeways and knowledge systems yet remain underrepresented in landscape research. Archaeological methods and Indigenous earth knowledge are uniquely positioned to investigate human-environment relationships in mountain environments of the past and together emphasize the functionally interdependent nature of culture

and ecology. We examine the role of upland landscape as part of the seasonal subsistence cycle and how landscape use relates to mobility, knowledge, land attachment, and placemaking through an ethnogeological approach. Ethnogeology pushes the boundaries of materialist and functional explanations of landscape, by incorporating Indigenous held place-based traditional earth systems knowledge with geologic and archaeological methods to coproduce a holistic representation of the human-environment interactions. We present a case study focused on the role of the North Fork Clearwater River watershed in the Bitterroot Mountains, Idaho, in the seasonal subsistence cycle of the Nimípuu (Nez Perce). Expanding our understanding of land use, mobility, and upland landscapes aids our interpretation of human-environment relationships as part of early landscape exploration and highlights the role of subsistence and non-subsistence-based mobility in the seasonal use of marginal landscapes, while also working to rehumanize the archaeological record.

Thompson, Jordan [96] see Blong, John

Thompson, Nicholas [384] see Lombardo, Serena

Thompson, Victor (University of Georgia), Mark Williams (University of Georgia), and Greg Luna Golya (National Park Service)

[50] *Village Events and Mound Chronologies at Lamar in the Ocmulgee River Basin, Georgia*

Here we report on our radiocarbon dating program at the Lamar Mound and Village in the Ocmulgee River Basin of central Georgia. Based on its ceramic assemblage, Lamar has long been thought to have been occupied intensively during the fifteenth and sixteenth centuries and is one of the regions that the De Soto entrada came through in 1540 as they made their way through what is now Georgia. Excavations in the 1930s revealed a number of houses and two mounds, one a pyramidal platform mound (Mound A) and the other a spiral mound (Mound B) with a flat summit, all of which were surrounded by a palisade wall. Subsequent work by Williams in 1996 provided further information on the construction history of Mound A and the spatial layout of the village. Our new radiocarbon dating program and Bayesian analysis of dates not only provides a more precise chronology but also allows us to link events in the village with mound building and use of Mound A at what is likely the capital of the province of Ichisi.

Thompson, Victor [87] see Forbes, Sophie

Thompson, Victor [101] see Garland, Carey

Thompson, Victor [188] see Kowalewski, Stephen

Thompson Poo, Camilo [393] see Lozada, Josuhé

Thomsen, Tamara [160] see Schroeder, Sissel

Thomson, Allison

[64] *Utilizing GIS to Visualize Bioarchaeological Data: A Case Study from Chau Hiix, Belize*

Based on a previous Microsoft Access database created to organize data from the Michigan State University Bioarchaeology Laboratory, this project expands on the foundational elements of data management to enhance the accessibility, identifiability, and searchability of burial records while incorporating visual data comparison. Utilizing an ArcGIS system to include the use of geospatial technology allows researchers to input excavation data to facilitate comparative analyses and tailor data to individual project needs. This poster reports the results of the pilot project, based on a singular site—Chau Hiix, Belize—and sets a foundation for a long-term multisite digital system supporting collaborative archaeological initiatives and future opportunities for cross-cultural comparisons.

Thomson, Isabella, Alex Garcia-Putnam (University of New Hampshire), Amy Michael (University of New Hampshire), and Samantha McCrane (University of New Hampshire)

[226] *Trophies, Objects, and Oddities: Exploring the Phenomenon of Dehumanization through the Unethical Treatment of Human Remains*

Human skeletal remains, divorced from their original context, may be rendered “oddities” and collectible

items by individuals wishing to possess human bones for sale, trade, or personal curation. This phenomenon contributes to the continued dehumanization and necroviolence against unidentified and unclaimed individuals. These themes are interrogated through case studies of unidentified skeletal remains from the University of New Hampshire's Forensic Anthropology Identification and Recovery (F.A.I.R.) Laboratory: (1) a painted femur carved to look like a rattlesnake that was used as a decorative object, (2) a cranium and mandible from two different individuals forced into articulation that was kept as a display object, and (3) a cranium with multiple gunshot wounds curated in a private collection. While each case is from a unique context, they were similarly treated as collectibles; this treatment, in effect, transformed these people into objects of fascination or ritual. Cases such as these require strategic plans for identification, repatriation, and/or reburial. We present three disparate, but effective, strategies here based on the goal of restoring dignity to these remains. We encourage other labs that curate isolated human remains to prioritize return of remains (to families and/or to the ground) over long-term curation in osteology labs.

Thornton, Christopher (University of Pennsylvania Museum), and Omid Oudbashi (University of Gothenburg)

[49] *Vince Pigott's Impact on Iranian Archaeometallurgy*

The Iranian Plateau is widely acknowledged to be one of the original "heartlands" of metallurgical production in the Old World, from the early adoption of native copper to the large-scale production of arsenical copper to the eventual adoption and production of iron. But our understanding of Iran's place in the history of metallurgical production only came into focus thanks to the groundbreaking work of Vincent C. Pigott. In this paper, two acolytes highlight some of his most important contributions to the archaeometallurgy of this region and demonstrate the incredible impact his work has had on the generations of scholars who came after.

Thornton, Erin [320] see Hamilton, Marian

Thornton, Erin [376] see Sewnath, Neeka

Thornton, Erin [376] see Sugiyama, Nawa

Thornton, Megan, and Andrew Saleh (UWM-CRM)

[268] *Developing a Repository Collections Management Database*

The University of Wisconsin-Milwaukee Archaeological Research Laboratory Center (ARLC) curates archaeological collections, artifacts, and archival records from over 800 archaeological sites within a federally compliant (36 CFR 79) storage facility. Over several decades, collections management standards have changed regarding how the ARLC catalogues the items and records housed in the repository. This presentation will provide historical context to some of the past collections management practices, discuss concerns and issues that have been encountered, and highlight the development of a custom collections management database system to better suit the unique needs of the repository. The ARLC staff began developing this database to address issues associated with past management systems, collate the data to answer common requests about locational proveniences and materials housed in the repository, and standardize recording practices for future cataloguing and management.

Thornton, Nora Rose (Boise State University)

[215] *Physiological Stress in Industrial London: The Catholic Experience*

This research examines the relationship between socioeconomic status, religious affiliation, and physiological stress in Industrial London. Two sites were used. The first site, St. Marylebone Paddington Street North, was a high-status Anglican cemetery active from 1772 to 1853. The second site, St. Mary and St. Michaels, was a low-status Catholic cemetery active from 1843 to 1854. Data used in this project was collected by the Museum of London Archaeology and was made available through published monographs and the Wellcome Osteological Research Database. Five markers of stress were included: linear enamel hypoplasia (LEH), stature, dental caries, trauma, and infectious disease. It was hypothesized that all indicators, with the exception of dental caries, would be more prevalent in the St. Mary and St. Michael sample. An independent t-test was run to determine if there is a statistically significant difference in stature, and chi-square analysis was run for all other indicators of stress. Stature was significantly different for females but not males.

Tuberculosis, LEH, trauma, rib lesions, and caries were all significantly different for adults but not subadults. This research adds to the body of work that investigates the physical embodiment of stress. There will be no images of human remains in this presentation.

Throgmorton, Kellam (Northern Arizona University), and Philippe LeTourneau (King County Historic Preservation Program)

[191] *Geologic Origins and Probable Sources for Zuni Mountain Spotted Chert*

Zuni Mountain Spotted Chert is one of the most important lithic materials in western New Mexico. It is frequently observed at Folsom sites in the valley of the Puerco of the east and middle Rio Grande Valley. The material was imported into Chaco Canyon and is common on Chacoan great house sites in the southern San Juan Basin and Red Mesa Valley. Zuni Mountain Spotted Chert is a major component of the lithic assemblages at villages dating to the Pueblo III–IV period in the El Morro Valley and eastern Cibola region. Despite this, information on sources for Zuni Mountain Spotted Chert is largely anecdotal. This poster synthesizes recent research on the geological origins of the material and describes confirmed and probable source locations in western New Mexico.

Thulman, David [101] see Pluckhahn, Thomas

Thurston, T. L. (University at Buffalo, SUNY)

[170] *They Defended Their Rights: Memory, Strategy, and Vigilance in Premodern Scandinavia*

This paper reflects on the roles of sociopolitical paradigms and memory in the staging of resistance, rebellion, and civil war, using case studies from Iron Age through Early Modern Scandinavia. Various event cascades always precede and follow more “visible” episodes commonly described in textual records but are largely invisible in pre- and protohistoric contexts or when, as subaltern projects, they are minimally documented. One approach archaeologists have used to understand what precedes uprisings is to demonstrate adverse conditions through records of material and biosocial disadvantage. While this kind of stress *can* precede disputes, ideological clashes among the well-off can stir rebellion long before embodied suffering. Both types of event cascade can involve idiosyncratic senses of outrage, violation of trust, or insults to honor, and neither type of conflict is reducible only to hunger or money. Accumulated evidence from the broader social sciences can improve disciplinary debates over the roles of materiality, the immaterial, and epistemology.

Thurston, T. L. [51] see Griffith, Zachary

Tian, Shiyu (Beijing Union University), and Guoding Song

[185] *The First Female Archaeological Team in China: Liu Hulan Archaeological Team*

In the late 1950s, the Henan Cultural Relics Institute organized a group of female archaeologists and established a professional team named the Liu Hulan Archaeological Team (Liu Hulan is a famous female national heroine). This is the first professional archaeological team composed of only women in China. Through interviews with several main members of this team and by collecting original record files, the author obtained rich first-hand materials, making this archaeological past that has not been known by the public previously gradually clear. The little-known Liu Hulan Archaeological Team successively investigated and excavated more than 10 cultural sites of the Xia and Shang Dynasties, such as Erlitou in Yanshi and Shaochai in Gongxian County Henan Province. Their footprints covered more than 60 counties in the Central Plains region. They found more than 100 new sites and sorted out and published more than 10 reports, making outstanding contributions to the founding of the Xia Dynasty. Their spirits of enduring hardships, taking on heavy responsibilities bravely, and fighting selflessly inspired generations of female archaeologists to forge ahead. At the same time, it also proves that women have always occupied a very important position in the 100-year history of Chinese archaeology.

Tian, Yajing, Haofan Deng (Sichuan Provincial Institute of Cultural Relics and Archaeology), and Ran Honglin (Sichuan Provincial Institute of Cultural Relics and Archaeology)

[279] *Preliminary Study on the Classification and Function of Ivories and Ivory Objects Unearthed from the Sacrificial Pit of the Sanxingdui Site*

Numerous ivories and ivory objects have been unearthed from eight pits found at the Sanxingdui site in Sichuan, China. These ivories and ivory objects can be roughly divided into three categories: buried objects, sacrificial utensils and decorations, which play different roles and functions in different scenes. The ivories with clear outlines placed on the upper layer of the artifacts of the sacrificial pits were buried, and most of them were put into the pits as a whole, while a small number of short sections are formed by manual sawing; The jade zhang unearthed from the sacrificial pits with ivory ornamentation and the seat of Bronze Giant Standing Figurine with elephant characteristics prove that elephants and ivory are an important part of the ritual activities of Sanxingdui ancestors; some of the ivory objects found in pit No. 5 were buried with ornaments such as gold, beads, and jade objects, as well as ivory beads found in other pits, suggesting that delicate ivory objects may have a decorative function.

Tibbits, Tawny, Marieka Brouwer Burg (University of Vermont), Jon Spenard (Cal State University, San Marcos), Michael Mirro (Chronicle Heritage), and Eleanor Harrison-Buck (University of New Hampshire)

[284] *Don't Take It for Granite! Reestablishing the Geochemistry of Granite from the Maya Mountains*

The ancient Maya exploited three geochemically distinct granite sources from the Maya Mountains for a variety of ground stone tool and construction purposes. Previously, we sampled these sources and provided signature ranges of important elements that differentiate them. Here, we discuss recent fieldwork that targeted the Hummingbird Ridge and Cockscomb Basin granite sources, for which our previous analyses identified some geochemical overlap. Additionally, we analyzed a new assemblage of Mountain Pine Ridge granite with accurate geolocations. This better constrained dataset has refined our understanding of granite source regions. In the presentation, we describe our field and lab methodology, which utilizes handheld X-ray fluorescence (XRF), and then we discuss two key findings. First, that the results are repeatable across units, underscoring the translatability of this kind of work for granite in other locations. Second, we then explore nuances identified between granite regions, and the meaning of higher rates of variation detected between the old and new sample sets and within source spheres.

Tibbits, Tawny [284] see Bazarsky, Alexandra

Tierney, Citlali (University of New Mexico), Osbjorn Pearson (University of New Mexico), Nadia Neff, Monica Warner (University of New Mexico), and Keith Prufer (University of New Mexico)

[320] *Unearthing Maya Dietary Activities: Using Stable Isotopes and Musculoskeletal Stress Markers to Understand Sex-Based Behavior in the Middle Holocene Neotropics*

Biocultural investigations of sex-based differences in social roles of ancient societies of the Maya Lowlands from the early Holocene foragers to late Holocene farmers have been constrained by major gaps in the archaeological record, primarily due to the absence of preserved human remains from the earliest periods in this region. The exceptional preservation of the archaeological record at two rockshelter sites in southern Belize, Mahayak Cab Pek and Saki Tzul, allows the opportunity to address these gaps by integrating stable isotope analysis and osteological analysis of individuals directly dated between 9600 and 1000 cal BP. This research tracks the development of sex-based dietary practices by combining stable isotope analysis of bone collagen ($\delta^{13}\text{C}$ and $\delta^{15}\text{N}$) and bioapatite ($\delta^{13}\text{C}$) with osteological analysis of musculoskeletal stress markers (MSM) associated with occupational activity to identify potential food processing techniques. Our data indicates that there was increased stratification of sex-based differences that arose concurrently with the increased physical demands of agricultural intensification and food processing during the middle Holocene that disproportionately impacted biologically sexed females, contributing to the existing discussion of gender roles of the Maya Lowlands.

Tierney, Citlali [104] see Pearson, Osbjorn

Tiesler, Vera (Universidad Autónoma de Yucatán), Erik Velásquez García (Instituto de Investigaciones Estéticas, UNAM), David Freidel (Washington University, St. Louis), Sandra Balanzario, and Francisco Estrada-Belli (Tulane University)

[169] *The Precious Smiles of the Kings and Queens of the Kaanu'?: Tooth Modifications and Social Identities among Early Classic Maya Aristocracies*

Permanent Maya dental crafting reached an all-time high in visible results and technical sophistication by the Early Classic period, where thousands such permanently inscribed modifications have come to light in burial explorations. In this presentation, we explore the role of engravings and skirted *ik'* patterns in reifying social identities through public display and signaling group identity across the hemisphere of the Kaanu'ꞑl dynasties and beyond. Systematic examinations of the dental decorations among paramounts from the central palaces show the high degree of exclusivity attached to this idiosyncratic form of vitalized breath and emulation of lore shared with Teotihuacan. The *ik'* modified into a butterfly shape probably alludes to the military aspect of the lineage founders (the butterfly was a symbol of the soul of dead warriors), evoking their sacred origins in an arcane and archetypal place called Wiinteꞑ Naah (House of Images of the Spears), which finds its most perfect terrestrial projection in Teotihuacan. Beyond the Middle Classic period, the overwhelming evidence suggests that this enigmatic shape lost its former role in distinguishing Kaanu'ꞑl aristocracies and Maya paramounts in general. Interestingly, this dental carving gained and retained popularity among the lower social Maya echelons until and beyond hegemonial collapse. *****This presentation will include images of human remains.**

Tiesler, Vera [283] see Glover, Jeffrey

Tiesler, Vera [36] see Hernandez-Bolio, Gloria

Tiesler, Vera [36] see Zazueta, Maria

Till, Jonathan (Edge of the Cedars State Park)

[362] *Edge of the Cedars: The Site, the Park, the Bigger Picture*

This presentation discusses recent work at the Edge of the Cedars State Park, including a recent recording of the great house site itself, documentation of surrounding historic and prehistoric sites, and a consideration of the great house site relative to other cultural and natural features in the larger Four Corners region.

Till, Jonathan [55] see Simon, Katie

Ting-Yi, Rose (University of Toronto)

[79] *"Mulans" of Early China: Women Warriors in the Late Shang (Thirteenth–Eleventh Century BCE) Capital Anyang*

The widely celebrated brave warrior Mulan was only fictional, but real women warriors in ancient China have fought alongside (or in place of) men in many places and times. Although warfare was seen as masculine in the Confucian tradition, women warriors in Early China might have been a social norm. Since the discovery and decoding of relevant oracle bone inscriptions in the twentieth century, scholars of Bronze Age China have widely accepted that two Late Shang dynasty queens, Fu Hao and Fu Jing (late thirteenth century BCE), played vital roles in state warfare; however, the involvement in warfare of women from other social echelons has long been overlooked by both archaeological and historical studies. This paper investigates the broader presence and role of women warriors in Late Shang China, through quantitative examination and close inspection of women warriors' burials found in several settlement areas in the last Shang capital, Anyang. The findings suggest that Shang women's involvement in organized martial activities was likely much more prevalent than traditionally acknowledged, challenging the conventional narrative of exclusively male warrior classes and offering a more nuanced picture of gender ideology and gender roles of the Shang dynasty.

Tinsley, Dayna [126] see Rickett, Sara

Tirapu de Goñi, Maitane (Dirección General de Cultura-Institución Príncipe de Viana, Gobierno de Navarra)

[294] *The Archaeological Discovery and Analysis of the "Hombre de Loizu"*

In 2020, during a speleological intervention in a cave located in the Erro Valley (Navarra), the oldest set of

skeletal remains in the region was discovered. Radiocarbon dating revealed the individual to be more than 11,000 years old, placing the remains in the early Mesolithic period. Due to the significance of the discovery, a multidisciplinary, international team of 26 researchers was formed to reconstruct the funerary context, taphonomic history and osteobiography of the individual. This presentation discusses some of the challenges associated with accessing the remains within a deep cave network and the results of the osteological and isotopic analysis, through which extensive information on the individual was obtained. Of particular note was the presence of a cranial injury, which was likely the cause of the individual's death. Experimental forensic studies suggest that this was likely a violent injury resulting from an episode of interpersonal violence. The discovery of the "Man of Loizu" represents one of the most publicized discoveries in modern Basque archaeology and has wide-reaching implications for the understanding of Mesolithic funerary practices in Navarre and beyond. *****This presentation will include images of human remains.**

Todd, Lawrence (GRSLE Inc.), and Daniel Dalmas (University of Utah)

[382] *Time, Context, and Marginal Archaeology: Methods for High-Elevation Transdisciplinary Research in the Greater Yellowstone Ecosystem*

Since 2002, the Greybull River Sustainable Landscape Ecology (GRSLE) project has conducted annual archaeological field research in the Greater Yellowstone Ecosystem (Shoshone National Forest, NW Wyoming, USA), focusing on elevations above 2,500 m. By employing an artifact-based rather than a site-based approach, this primarily non-collection surface inventory, which implements in-field coding, has amassed a cumulative dataset of over a quarter million precontact artifacts. Interpreting these archaeological distributions requires examining long-term evidence of occupational dynamics and intensity across multiple time periods, thus avoiding the tautological trap of using the same data to both generate and test models. This necessitates a transdisciplinary approach that integrates data from various geomorphological and biological studies. Analyzing high-elevation archaeological data from the Late Pleistocene to the present within their ecological contexts provides a framework for advancing mountain archaeology and better understanding landscape-scale formation processes.

Todd, Lawrence [298] see Aufer, Brianna
 Todd, Lawrence [88] see Barker, Kristin
 Todd, Lawrence [122] see Burnett, Paul
 Todd, Lawrence [196] see Dalmas, Daniel
 Todd, Lawrence [298] see Downey, Zachary
 Todd, Lawrence [280] see Kelly, Robert
 Todd, Lawrence [188] see Orngard, Charles
 Todd, Lawrence [223] see Rapson, David
 Todd, Lawrence [196] see Reid, Ethan
 Todd, Lawrence [191] see Zekas, Sophia

Todisco, Dominique [301] see Martin, Fabiana María

Tokovinine, Alexandre (University of Alabama), Francisco Estrada-Belli (Tulane University), Cynthia Hannold, and Alejandro Patino-Contreras (Independent Researcher)

[169] *La Sufricaya during the Early-Late Classic Transition: Negotiating Identities in a Changing World*

The current project builds on prior investigations of the Early Classic royal palace at La Sufricaya by examining the data from public spaces and nonroyal residential groups of which some were contemporaneous with the palace and some postdated its Late Classic abandonment and relocation of the royal family to the nearby site of Holmul. While data from La Sufricaya suggested ties to Teotihuacan, the post-relocation rulers of Holmul were part of the Dzibanche hegemonic network, especially to the royal court of Naranjo. The shift is reflected in serving vessels, incense burners, and lithic artifacts. While the assemblages at plazas and temples closely match those at the palace, data from the nonroyal residences suggest a more complex set of strategies than mere acceptance or rejection of the top-down transformations. The classes of the politically and culturally salient artifacts at the nonroyal residences remain broadly the same as in the palatial contexts, but the former had direct access to the network and somewhat

different preferences than the royal family. Moreover, nonroyal households were involved in the production of culturally and politically salient artifacts such as fine serving vessels and participated in the negotiation of the systems of value sustaining the political regime.

Tokovinine, Alexandre [169] see Dober, Joseph

Tokovinine, Alexandre [169] see Hannold, Cynthia

Tokovinine, Alexandre [169] see Moot, Dana

Toledo, Marcelo (Universidad de Buenos Aires)

[165] *Human Occupation of Argentinean Pampean Plains during Peri-LGM Times*

Pampean human settlement is currently accepted from about 15 ky BP. Here we present occupation evidence from OIS 2 / OIS 3 fluvial secondary sites containing unambiguous anthropically modified bones. The study area consists of low energy terminal Pleistocene fluvial depositional systems with loess-capped interfluves. We carried out a detailed geoarchaeological and taphonomic analysis of several sites located in the Pleistocene section of these valleys, where the LGM event is represented by the Red Lujan sequence, with boundaries between the 17 and 30 ky BP lowstand discontinuities. It presents a basal conglomerate of calcrete grading upward to loessoid channel fill bars and aeolian deposits. The cultural material, dated between 18 and 29 ky BP, consists of bones with perimortem anthropic modifications resulting from carcass processing and the utilization of bone and teeth as raw material. Taphonomic analysis led to the identification of two main groups of modifications: those related to defleshing/dismembering and those resulting from marrow/brain extraction. Broad percussion notches, attached flakes, hackle marks, and secondary bulbs result from anthropic dynamic charge on green bone. Megafauna bone anvils, cores, and knapped teeth were also identified. These findings imply that the pampean plains biome was inhabited well before the LGM.

Tollner, Hailey (University of Oxford)

[99] *Mutual Aid for Climate Justice: Bringing Anarchist Archaeology to the “Climate Conversation”*

The inclusion of archaeology in the conversation of climate justice has expanded in recent years, but much of this activism is focused on higher levels of centralized governments, with calls for archaeology to be recognized as a source for sustainability policy suggestions. The most effective activism does not occur at these national and international scales, but through the groundwork in local communities. In the words of the late David Graeber, “By participating in policy debates the very best one can achieve is to limit the damage,” and archaeologists should not be aiming simply to act as damage control. Recently, archaeologists have created concepts like “past-forwarding,” which use archaeological knowledge to inform future decision-making, but this often supports current unsuccessful state dynamics. The archaeological record also shows the benefit of mutual aid-style networks of action allowing communities to survive in spite of the hierarchical systems that push to dissolve their autonomy. Thus, in the conversation of combating climate change, I argue that archaeology should be focused on solutions that similarly reject reliance on governmental involvement; it is essential to create sustainable infrastructure networks to meet the needs of communities without relying on governmental aid that may not come.

Tomac, Goran [288] see Martinoia Zamolo, Valentina

Tomaskova, Silvia (University of British Columbia)

[368] *All in a Day’s Work? South African Rock Engravings as Bodily Practice and Skill*

This study of rock engravings at Wildebeest Kuil, South Africa, focuses on bodies, strength, skills, and practice necessary to produce the carved images. Rather than ask “what do these images mean?”, the project examines the material evidence for labor, effort, skill, strength, and repetitive action that would have been possible only through extended learning and practice. How did anyone learn to carve stone, how long did it possibly take, and what might we glean about communities, bodies, and relations from these traces? Since there is no evidence of any settlements, patterns of individual and/or collective movement must be considered as well. At the same time, the project also highlights the fact that this archaeological site does not sit on neutral ground, subject to waves of colonialism, neglect, discovery, and manipulation for a range of purposes. Archaeologists are merely some of the cast of characters who visited Wildebeest Kuil, the

Northern Cape, or South Africa over centuries in search of wondrous or curious things. This study emphasizes that all scientific authority emerges within a larger political and historical context.

Tomazic, Iride (University of Michigan), Timilehin Ayelagbe (University of Michigan), Jenan Kharbush (University of Michigan), Kara Larson (University of Michigan), and Alicia Ventresca-Miller (University of Michigan)

[288] *A Snapshot of Copper Age Lifeways: Insights from the Banat Region, Serbia*

From hunting to domestication, animals have always been a key factor in human survival. However, the dynamics of the relationships between animals and humans vary across time, space, and societies. In European prehistory, animals have been studied as a means of subsistence and economic foundations, yet our understanding of lifeways and diets during the Copper Age remains limited. Dating from 4500–3800 BC, the Copper Age is a period of great change and transformation. Presenting an enigmatic period throughout Europe, but particularly in the Carpathian Basin, during the Copper Age the number of settlements dropped dramatically while cemeteries increased. This pattern was attributed to a change in living style, potentially becoming more mobile and adopting pastoralist or semi-pastoralist lifestyles. However, until now, we have no evidence that this was the case. This study presents one of the first multifaceted research programs that include stable isotope analyses on humans and animals from the Copper Age (4500–3800 BC) cemetery of Podlokanj Nove Bašte, located in Banat, Serbia. Radiocarbon dates show that this cemetery was occupied only a couple of generations. Thus, the results of stable isotopes of carbon and nitrogen present a snapshot of the community's subsistence practices and their lifeways. *****This presentation will include images of human remains.**

Tomczyk, Weronika (Dartmouth College), Lisseth Rojas-Pelayo (University of Florida), Erick Acero-Shapiama (Programa de Investigación Arqueológica Chavín de Huántar), Rosa Rick (Programa de Investigación Arqueológica Chavín de Huántar), and John Rick (Stanford University; Programa de Investigación Arqueológica Chavín de Huántar)

[182] *Understanding Domestic Lifeways in Post-monumental Chavín de Huántar, Peru: Tentative Analyses in Area 7*

How were daily life and animal management organized during Chavín de Huántar's resettlement phases once this important Formative (ca. 1200–500 BCE) monumental ceremonial center ceased its influence over vast parts of modern-day Peru? Previous research on Chavín de Huántar's Formative occupation suggests a reliance on local foods rather than imported resources. This paper attempts to verify whether such a trend continued into the subsequent Mariash-Recuay and Callejon occupation phases (ca. 0–800 CE) by examining a sample of faunal remains (NISP = 5,004) accumulated in a rustic construction known as Area 7. This initial zooarchaeological study revealed that Chavín's late occupants depended on large mammals—presumably local South American camelids and deer—in meat procurement and other routine domestic activities. However, bones' poor taphonomic conditions obscured noticing nuanced differences in daily practices between the two occupational phases. To counteract such a limitation, we combine the zooarchaeological results with evidence from other artifact categories to reconstruct Chavín de Huántar's late occupational history more accurately.

Tomczyk, Weronika [182] see Moss, Kelly

Tomka, Steve (Raba Kistner)

[367] *Changes in Arrow Point Morphology in the San Antonio Missions: What Is It Telling Us?*

The Indigenous population of the San Antonio missions was drawn from five distinct regions of north and south of the Rio Grande. The ethnic groups indigenous to these regions manufactured distinct arrow point forms prior to entering the missions in the early eighteenth century. Yet over the next 70 years there is a gradual coalescence of this morphological variability toward a lanceolate form found in low numbers in the San Antonio River Basin prior to the appearance of the missions. This presentation explores the possible meaning of this coalescence in projectile point morphology and suggests that ethnic groups found in small numbers in the missions gravitated toward the dominant groups. And they signaled this shift in identity politics by adopting the projectile point forms of the dominant ethnic enclave.

Tornero Dacasa, Carlos [376] see Speller, Camilla

Toro-Uribe, Fabian (University of California, San Diego)

[213] *Anthracological Investigation of Forest Management Practices at Three Bronze Age Sites in Central Thailand*
Anthracological examinations of charred wood remains associated with the excavations from the Thailand Archaeometallurgy Project (TAP) provide valuable insights into ecological management strategies in the region. Excavations at Non Pa Wai (NPW), Nil Kham Haeng (NKH), and Non Mak La (NML) have produced abundant samples of charred woody materials that are above 4 mm, allowing for a comprehensive analysis of wood used at these copper production sites. Through the identification and quantification of woody taxa in these assemblages, this presentation offers a descriptive overview of ecological management practices in relation to the productive activity associated with these sites. Furthermore, this analysis of woody taxa also contributes to questions surrounding fuel preference, long-term environmental effects of anthropogenic activity, extensive versus intensive exploitation of forest resources, and long-term forest management. The abundance of dipterocarp taxa speaks to the exploitation of primary forest contexts coinciding with periods of intensive copper production across these sites. For example, this paper constitutes an initial overview of the abundance and presence of woody taxa in relation to the stratigraphy and dating of these sites. Further research will integrate carpological and isotopic data with the wood charcoal to refine the initial conclusions drawn from this anthracological study.

Torras Freixa, Maria, Natalia Moragas (University of Barcelona), and Alessandra Pecci (University of Barcelona)

[296] *Was Teotihuacan an Abandoned City? Post-collapse Regeneration*
Teotihuacan is not a “lost or abandoned city,” it is a resilient settlement with a long human occupation to the present day. Therefore, rather than looking for the reasons behind the collapse of the Classic city of Teotihuacan, the main goal of this contribution is to explore the ancient city of Teotihuacan by itself after this major event. In sum, our aim is to offer some insights into how people lived in Teotihuacan after its urban decay and how they interacted with the ruins over the centuries, from the Epiclassic to the Early Colonial times. Mainly through the analysis of archaeological evidence recorded in a dispersed scholarly literature and Early Colonial documents, we have been exploring the city’s decomposition after 550 CE. We have been focusing on resettlement evidence, transformation of the urban built environment, and creation of new interactions with its monumental ruins. In fact, after its decline, the urban landscape was reused and redesigned by different settlers and time periods. This approach gives us hints into how people lived among the ruins of Teotihuacan.

Torres, Christina, Alyson Caine (James Madison University), Gloria Cabello (Pontificia Universidad Católica de Chile), Mark Hubbe (Ohio State University), and William Pestle

[117] *Possibilities of Care and Survival in an Isolated Skeleton from Chile’s Semiarid North*
Salvage archaeology at the port town of Las Lozas in Chile’s Huasco Valley yielded the skeletal remains of an individual from the Formative period (1610–1180 cal BP). These eventually found their way to the Copiapó office of the Consejo de Monumentos Nacionales (RUC0800416473-4) where they were analyzed as part of a larger project focused on the lived worlds of peoples on the coast of the semiarid north. These nearly complete skeletal remains of an adult male showed evidence of a well-healed, misaligned oblique fracture at the distal third of the left tibial diaphysis and at the proximal third of the left fibular diaphysis that resulted in the fusion of these two bones. Combining archaeological and osteological evidence, including the clear shortening of the left leg by nearly 3 cm, suggests this individual’s quotidian activities, including occupational fishing and shellfish gathering, would have had acute and chronic ramifications. Extensive healing in these elements aligns with the rubric of a bioarchaeology of care and points to the possibility of compassion and community support. However, negligible evidence of infection suggests this may have been situational and suggestive of a “politics of minimal care.” *****This presentation will include images of human remains.**

Torres, Elva [26] see Turner, Bethany

Torres, Ishbel

[290] *Figurines Found in the Low Valley of Rio Verde: A Typology of Commoner's Life Representations in Rio Viejo during the Late Classic and the Early Postclassic Periods*

During the Classic and Postclassic periods, Río Viejo maintained continual occupation by various groups, leading to significant societal, ritual, environmental, economic, and political changes in the region. The site's prominent position in human development facilitated the expansion of inhabitants' worldviews, resulting in the creation of artisanal representations reflecting new horizons and ideologies. Notably, the figurines discovered in the excavation seasons primarily depict animated beings, such as animals, people, or supernatural entities, in static positions, suggesting their symbolic significance and potential for animation when interacted with. Artifacts, including figurines, found in domestic contexts like middens and residential structures at Rio Viejo, offer insights into their involvement in various activities within the domestic sphere, whether ritualistic, social, or everyday. This contextual information serves as a valuable indicator for understanding the use and disposal of these artifacts. The study of figurines has garnered increased attention, particularly in interpreting ideologies, rituals, identity formation, and societal roles. The exhaustive analysis and typology design undertaken in this study over several months are highly significant, both for the local region and Mesoamerica as a whole, due to the extensive and diverse sample, which permits valuable comparisons in imagery, iconography, and contextual data with other sites.

Torres, Josh [233] see Curet, L. Antonio

Torres, Josh [291] see Moretti-Langholtz, Danielle

Torres Guzmán, Tomás [393] see Lozada, Josuhé

Torres Morales, Genesis (University of California, Riverside)

[321] *A Bioarchaeological Analysis of Developmental Growth among the Chimúes of the North Coastal Peru (AD 900–1470)*

The Chimú (AD 900–1470) at Huacas de Moche (HDM) on the northern coast of Peru offer a unique opportunity to study growth patterns due to the presence of individuals who lived long enough for stress indicators to become apparent in their bones. This is crucial for examining the long-term impacts of environmental and social stressors on skeletal development. The osteological paradox, which underscores the gap between skeletal evidence of stress and actual lived experience, is central to this analysis. This research involves the examination of approximately 150 Chimú individuals from HDM, focusing on fusion patterns, dental eruption, long bone measurements, cribra orbitalia, and porotic hyperostosis to understand their growth patterns. These findings are compared with skeletal remains from other northern coastal Peruvian sites of the Late Intermediate period (AD 1000–1470) to gain insights into developmental growth variations over time and space. This comparative approach provides a nuanced understanding of how environmental, economic, and social factors influenced Chimú health and development, shedding light on the adaptive strategies of the Chimú across different periods and locations. *****This presentation will include images of human remains.**

Torvinen, Andrea (Florida Museum, University of Florida), Ashley Rutkoski (University of Florida), Lindsay Bloch (Tempered Archaeological Services LLC), Erin Nelson (University of South Alabama), and Neill Wallis (Florida Museum of Natural History)

[66] *Characterizing Constellations of Practice in Pensacola Shell-Tempered Pottery along the Northern Gulf Coast (1150–1700 CE)*

Ceramic petrography is commonly used to investigate the technological choices embedded within constellations of practice that archaeologists recognize as large-scale collective identities such as the Mississippian cultural tradition. Using several lines of evidence, we aim to more accurately characterize the variation in shell tempered pottery of lesser-known communities living along the northern Gulf Coast, specifically the Pensacola Mississippian variant. These communities retained coastal lifeways while simultaneously making choices about which inland Mississippian traditions they would adopt. Here, we present the preliminary results of a petrographic analysis ($n = 33$) from the type site of the Pensacola region, Bottle Creek (1BA2), which is located in the Upper Mobile-Tensaw Delta of Alabama. Bottle Creek has

previously shown connection to more inland communities through bulk chemical analyses and macro-level identification of similar potting traditions. Further examination of variation in the size, frequency, and sorting of the different shell types used both inform our understanding of the unique choices made by Indigenous communities living along the coast and provide comparative data for enhancing a machine-learning model aimed at expanding the ceramic sample that can be characterized beyond the subset of sherds that are analyzed petrographically (see Rutkoski et al., SAA 2025).

Torvinen, Andrea [66] see Datka, Zhuldyz

Torvinen, Andrea [114] see Rutkoski, Ashley

Tostevin, Gilbert (University of Minnesota)

[175] *The Scales of Steven L. Kuhn's Contributions to Archaeology and Specifically the Study of the Initial Upper Paleolithic*

Steve Kuhn's contributions to anthropological archaeology run the gamut of scale, from discipline-changing research that has put theoretical and analytical tools into the hands of thousands of archaeologists around the world, to his profound influence on the careers of individuals who were inspired by his kindness. I certainly count myself in both groups. Likewise, his research has touched on the small, logistical scale of forager mobility, to the large, continent-wide scale of behavioral phenomena such as the Initial Upper Paleolithic. The present paper uses these themes of scale and mobility to present new data on the Initial Upper Paleolithic phenomenon in Central Europe, through a study that tests hypotheses behind the inter-assemblage variability within the Bohunian technocomplex and its relationship to other industries, such as the Szeletian and the Lincombian-Ranisian-Jerzmanowician. The paper concludes with an exploration of the implications of these technological relationships for our understanding of the role of the Initial Upper Paleolithic in the period of Neanderthal-Modern hybridization.

Tostevin, Gilbert [384] see Porter, Samantha

Toth, Nicholas [229] see Meier, Trenton

Totsch, Jessica (University of Missouri), and Clayton Blodgett (University of Missouri)

[76] *Urban Water-Use Assessment in Pompeii: Using GIS to Examine Domestic and Industrial Contexts*

The water-supply system of Pompeii has long been a source of renewed interest for archaeologists and provides a unique opportunity to examine the urban environment and infrastructure of the Roman city in the years leading up to the eruption of Mt. Vesuvius. After an aqueduct was installed between 30 and 20 BC, water usage intensified throughout the site. This paper discusses the results of recent fieldwork and evaluates how water usage varied within different contexts at Pompeii. During the 2022 and 2024 field seasons, randomly selected samples of domestic and industrial properties were surveyed to identify how general access to water, and more specific commodities like piped water, were utilized in a variety of settings including public buildings, sanitation features, businesses, industrial workshops, and private homes. Using geographic information systems (GIS) this paper discusses the patterns of water use that were identified and provides case studies to illustrate the implementation of different water-use strategies across the site as part of a broader, multiscale approach to understanding the impact of the Aqua Augusta aqueduct on everyday life in Pompeii and other nearby towns.

Toumazou, Michael [81] see Counts, Derek

Tourloukis, Vangelis [384] see Lombardo, Serena

Towner, Ronald (LTRR)

[375] *Are Big Data Better Data? A Historical Evaluation of Dinétah Navajo Tree-Ring Data*

The tremendous expansion of research and computing power in the past few decades has resulted in the creation of large databases in many fields, and archaeology is no exception. But what have we really learned? In the early 1990s, astronomers searched the skies with the most advanced technology of the time. They

addressed such fundamental questions as the size and age of the universe with hundreds of thousands of data points and supercomputers. Their inferences, however, suffered from Malmquist bias—what they couldn't see was just as significant as what they could see. Their inferences were overturned using new techniques and, later, more advanced technology. Is this true in dendroarchaeology? This paper is a historical analysis of dendroarchaeologically dated sites in the traditional Navajo homeland of Dinétah. Tree-ring samples have been collected from these sites for nearly 100 years by scholars from a variety of agencies and institutions. The quantity of samples has increased more than 10-fold, mostly in the past 30 years. This historical perspective allows me to examine those inferences that have endured and those that have changed. Surprisingly, data quantity have not influenced tree-ring interpretations much, although data quality have had significant impacts on our inferences.

Toya, Chris [101] see Liebmann, Matthew

Trachman, Rissa (Elon University)

[52] *Multiscale Analyses from Households to City: Investigations of Everyday Life at and around the Site of Dos Hombres, Belize*

Understanding households and communities and their relationships to nearby cities is a topic of great interest. Investigations in and around the ancient city of Dos Hombres is an example of multiscale analysis in northwestern Belize. Community-level social, political, and economic organization are visible through the ways in which resources are utilized and managed in and around households. The results indicate that sociopolitical organization in the settlement around Dos Hombres are the result of the interaction of several factors influencing household organization across the landscape. In addition, research in the Dos Hombres civic ceremonial center also utilizes the lens of “everyday life” to understand the internal ritual, economic, social, and ideological activities of this ancient city and the sociopolitical and economic role this city played in the region. These data elucidate the connected nature at multiple scales of social and economic relationships, both individually and collectively, of the ancient Maya at Dos Hombres and northwestern Belize. Across his career, Fred Valdez mentored and taught countless students, led many field schools, and led the field of archaeology to value households, settlement, and communities as central to our understanding of ancient Maya culture.

Trader, Patrick (Gray & Pape Inc.)

[183] *Landscape Reuse by Woodland Groups in the White River Valley, Indiana*

Geoarchaeological investigations conducted for the Interstate 69 Corridor Project resulted in the development of a model for buried archaeological site potential in the White River Valley of Indiana. The following paper focuses on the identification of buried Woodland archaeological sites. Previous work within the central portion of the White River Valley has provided little information regarding either the Early Woodland or Middle Woodland periods. Previous Woodland research has concentrated on larger, more elaborate mounds, villages, or settlement, and has often overlooked smaller or ancillary camps. Eight buried sites dating from the Early through Late Woodland periods were found on the floodplains and ridges of the White River Valley. Archaeological components were identified through a combination of diagnostic artifacts and associated radiometric determinations. Buried archaeological sites were found associated with soils classified as either inceptisols or mollisols. The presence of these buried sites provides information regarding landform development, as well as buried site potential within the White River Valley. This paper examines landscape reuse by Woodland groups, and provides new data regarding low-density, short-term encampments in the region.

Tran, Cathy (Simon Fraser University), Luca Del Giacco, Hua Zhang (Simon Fraser University), and Dongya Yang (Simon Fraser University)

[316] *Climbing Steep Learning Curves in Ancient DNA Research: An Example of Mastering qPCR*

In this study, we illustrate the steep learning curve associated with learning quantitative polymerase chain reaction (qPCR), while also demonstrating its value as an effective training method for ancient DNA research. Utilizing sensitive fluorescent signals, qPCR monitors DNA amplification in real time, serving as an invaluable tool for the quantitation of DNA. Two researchers conducted qPCR tests on multiple series of dilutions

(10×, 100×, 1k×, 10k×, 100k×, 1m×, 10m×, and 100m×) derived from modern faunal DNA (10–30 ng/uL of salmon, cattle, or kangaroo). Each researcher performed over 25 qPCR tests, which were evaluated for intra- and inter-observer error, before consistent and expected outcomes were achieved. Our data illustrates that reduced intra-observer errors will eventually lead to a decrease in inter-observer errors, ultimately yielding consistent and expected results. Through this qPCR-based dilution exercise, researchers will refine critical laboratory techniques pertinent to ancient DNA, including the management of limited DNA quantities and maintenance of consistency across samples, replicates, and experimental setups. Achieving stable qPCR results requires repeated practice, meticulous lab work, and creative troubleshooting, producing a steep learning curve to overcome. However, when mastered, qPCR is an extremely useful tool that can be applied in ancient DNA research for both training and quantitation.

Tran, Justin (University of California, Riverside), and Anabel Ford (MesoAmerican Research Center, UCSB)

[315] *Modeling the Subsistence Matrix of the Maya Forest at El Pilar*

The traditional Maya milpa forest garden is an asynchronous ca. 20-year field-to-forest cycle based on the opening of a “milpa” field to cultivate annual plants for around four years for managing the perennial regeneration of useful mature forest. The mosaic of horizontal and vertical habitats offers the constant availability of household products initiated with food crops, yet providing daily needs including construction materials, household items, medicine, and animal habitat. Practiced over centuries, if not millennia, by Maya peoples, a complete range of vital resources in both forest and field environments have been identified in archaeological contexts. Using lidar at the Maya civic center of El Pilar, we have been able to model the milpa forest garden cycle to visualize the landscape that provided the plants and animals that sustained the ancient Maya diet. In collaboration with master forest gardeners and informed by their vast Traditional Ecological Knowledge, our spatial and temporal evaluation pictures the resources of cultivated open, regenerating, and mature spaces that provisioned the Maya. We explore sustainability and demonstrate the enduring cultivated capital of the biological resources of the Maya Forest.

Tranberg, Austin (University of Alabama), Rachel Cajigas, C. Fred Andrus (University of Alabama), and Elliot Blair (University of Alabama)

[240] *Beyond the Shell Ring: Examining the Impact of Sea-Level Change during the Late Archaic / Early Woodland Transition on Creighton Island, GA, USA*

Shell rings appear along the coast of the US Southeast during the Late Archaic period (3000–1000 cal BC). These circular depositions of marine shell were abandoned as a result of fluctuating sea levels before the start of the Woodland period, around 1000 cal BC. This research looks to the landscape surrounding the Creighton Island Shell Ring (9MC87), a ring distinguished by its location within the Georgia back-barrier, during the transition between the Late Archaic and Early Woodland periods. We use data from shovel test pits, radiocarbon dating, and oxygen isotope analysis to examine the impact of sea level change and the use of marine shell on the south end of Creighton Island.

Traxler, Loa (University of New Mexico), and Ash Boydston-Schmidt (Maxwell Museum of Anthropology, University of New Mexico)

[226] *NAGPRA Is a Living Relationship: Addressing our Responsibilities and Growing in our Relationships with NAGPRA*

Recent changes to NAGPRA press museums to revisit and update inventories, assemble documentation, and reach out to Native American communities, establishing new relationships or reengaging with communities in more expansive consultations, all activities that demand investment in time and personnel to handle the complexity of legacy collections. Drawing on experiences working with academic programs, university museums, and federal repositories in New Mexico, this poster will highlight recent successes in multifaceted training for museum professionals, emphasizing the legal and cultural responsibilities critical to supporting NAGPRA work with awareness, empathy, and respect. Building and sustaining relationships with descendant communities is essential—not only for compliance but for cultivating trust and prioritizing Indigenous voices in the repatriation process. The success of NAGPRA lies in this relationship-centered approach, where Indigenous knowledge and institutions’ data is shared, communication of diverse perspectives is welcomed,

and collaboration guides the work, ensuring that repatriation efforts are not static obligations but living, evolving processes in support of decolonization.

Trein, Debora [109] see Krause, Samantha

Trejo Ordoz, Alondra (Cinvestav Unidad de Genómica Avanzada, Irapuato), Cuahtémoc Domínguez Pérez (INAH), Javier Martínez González (INAH), and Jean-Philippe Vielle Calzada (Cinvestav Unidad de Genómica Avanzada, Irapuato)

[48] *The Human Population of Cantona, Puebla, during the Formative and Classic Periods of Ancient Mexico*

Cantona had human occupation from approximately 2950 to 900 BP (Middle Formative to Early Classic) with two peaks, the first between the Terminal Formative and Early Classic (2300–1500 BP) and the second during the Late Classic after the fall of Teotihuacan (1300–1150 BP). Cantona controlled the Oyameles-Zaragoza obsidian deposit and built at least 27 ballcourts, hundreds of pyramidal platforms, and thousands of streets and courtyards spread over more than 1,400 ha² on the basaltic *malpais* of the northern Cuenca de Oriental. The study of their ceramics, obsidian, sculpture, and architecture has shown relationships with the West, Central Highlands, Gulf Coast, Oaxaca, and Mayan Area, while the direct study of the population through craniometric analysis points to a morphological affinity with small groups from half of the Cuenca de Oriental. Here, we present progress in the transdisciplinary project that seeks to understand the possible origins, interregional relationships, and even kinship relationships through bone, genetic, isotopic, and cultural evidence from Cantona's mortuary contexts. *****This presentation will include images of human remains.**

Tremblay, Adrienne (SWCA)

[302] *Square Hearths, Rabbits, Mesquite, and Maize at an Early Ceramic Site along the Santa Cruz River*

Recent excavations sponsored by Tucson Electric Power in at a small Early Ceramic period habitation site along the Santa Cruz River in Tucson, Arizona, confirm that cultural patterns associated with the Hohokam can be found at sites dating to the Early Ceramic period in the Tucson Basin. The Early Ceramic period in the Tucson Basin represents a transition from the Late Archaic / Early Agricultural period, when people began to cultivate maize and live in small settlements, to the Ceramic period when the Hohokam lived in large villages along the Santa Cruz River. Subsurface features, ceramics, and radiocarbon dating place the site's main occupation in the middle of the Early Ceramic period with a possible earlier occupation during the Early Agricultural period, as well as an ephemeral later Hohokam use. Investigations encountered oval or circular pithouses with square-shaped hearths, as well as storage pits, thermal features, middens, and activity areas, in two possible loci. Like the later Hohokam, these families hunted rabbits and other wild animals, gathered and processed mesquite and other wild plants, utilized wild reeds and grass for house construction, farmed maize, and traded for shell from the Gulf of California.

Trevino, Kristy [223] see Kingery, Adam

Tripoli, Simone (University of Wisconsin, Madison)

[323] *Experimental Methodologies: An Analysis of Ancient Bronze Crossbow Bolt Production*

This pilot research replicates the production of Dong Son trilobate bronze crossbow bolts using sandstone molds. The Dong Son site of Co Loa, located near Hanoi, Vietnam, is associated with the production of crossbow technology, as several thousand bronze bolts have been recovered archaeologically. However, there has been very little research done on crossbow technology in northern Vietnam, including research on the bronze bolts and on the sandstone molds used to produce them. Thus, the goal of this project is to add to Dong Son crossbow research by testing the effectiveness and efficiency of sandstone molds to produce bronze crossbow bolts. To this end, 10 molds were crafted from various sources (e.g., Indiana Sandstone), and bronze was cast into each one until the mold became unusable. The molds were separated into three groups: heat treated, oil, and untreated. This poster presents project findings and helps to illustrate how the replication experiments can help determine possible methods used by ancient people to maximize the effectiveness and lifespan of stone molds.

Trischman, Kaleigh (Salve Regina University), Heather Rockwell (Salve Regina University), and Nathaniel Kitchel

[317] *Reconstructing Paleoenvironments: Exploring the Paleobotany of Late Pleistocene New England*

In a region once covered in mile-high glaciers, northern New England during the late Pleistocene would have offered a sharp contrast to its current ecology. Little is known about the flora that once characterized this region, resulting in reduced comprehension of the subsistence patterns of its inhabitants. Human environmental interaction at the end of the Pleistocene is critical to our understanding of the fluted point period in New England. To understand this relationship, we conducted a palynological study of stratified soil samples from a fluted point site in northern Maine within the Munsungun Lake Formation. This identified floral species present during the late Pleistocene. Our results hope to increase knowledge of the efficacy of paleobotany within the region and ultimately to reconstruct a landscape that expands the context of a late Pleistocene Site.

Troncoso, Andres [194] see Alfonso-Durruty, Marta

Trout, Lukas [223] see Parker, Wendy

Trujillo, Judith (Universidad de los Andes; Gipri Colombia), and Sonia Archila Montanez (Universidad de los Andes)

[334] *Rock Art Landscapes: Identification of Rock Art Distribution Patterns at Different Spatial Scales in La Lindosa, Guaviare, Colombia*

This presentation shows an initial approach to rock art landscapes in Nuevo Tolima, Serranía of La Lindosa, based on a systematic study of rock paintings. The analysis supposes that multiple human activities left traces currently visible in the rock art landscapes derived from that human agency. These traces can be observed, for example, in the quantity and distribution of motifs on the bedrock, the frequency and variety of motifs on the rockshelters, and the size of each of the painted murals, among others. To realize this spatial experience, it is considered important that the observer perceives the rock landscape at different scales, sees each mural as a whole, and in turn as a part of the mountain range. By moving through the tepui to visit the rock murals and observe the particularities of each of the painted murals, certain patterns of their distribution and production can be identified.

Truong, Yubitz (Eastern New Mexico University)

[127] *Digital Archaeology: The Hell Gap National Historic Landmark and the Ergonomic Use of Manos*

This study discusses the ergonomic use of ground stone tools, specifically manos. A mano is a handheld tool used for processing foods and other materials. Through analysis of wear patterns, size, and shape of artifact HG UWI 2158, this and other similar artifacts can reveal why they were chosen for efficiency, necessity, and comfort. Ground stone tools can provide information on the daily use and cultural behaviors of early North American occupants. The use of photogrammetry and 3D modeling allows for detailed analysis of the ergonomic properties of the tool and its possible use for various tasks. Data from photogrammetry and 3D modeling can provide a broader cultural understanding for choosing manos. This research emphasizes the significance of interpretation of Ground stone tool kits at the Hell Gap National Historic Landmark. Digital archaeology research of the Hell Gap site offers an alternative method that results in the long-term preservation of artifacts and deepens our cultural understanding of early North American societies.

Trusler, Kate

[76] *Where's the Loo? Considerations of Socioeconomic Status and Urban Refuse Management in Pompeii*

The location of sanitation facilities has important social and cultural ramifications about the use of latrines and management of waste in the ancient Mediterranean. Fieldwork in Pompeii has led to a more precise understanding of residential and business latrines and downpipes (indicators of upper story sanitation features) by challenging commonly held notions about the distribution of latrines within different property types. The location of residential latrines has been mostly attributed to kitchens, but this study found that latrines are also commonly found near entrances and in dedicated latrine rooms. Businesses' sanitation facilities are closely associated with downpipes and frequently located in the front room of shops. The

distribution of downpipes more accurately represents the importance of private sanitation on upper floors. The patterns have implications for understanding latrine use and socioeconomic variation in waste management in urban environments. Also considered is the effect of the location of cesspits on broader issues of urban waste and refuse management.

Trusler, Kate [76] see Lorenz, Wayne

Tsesmeli, Evangelia (New Mexico Department of Transportation)

[298] *The New Mexico Department of Transportation Tribal Consultation Portal: Navigating Cultural Compliance Efforts and Empowering Tribal Input*

The New Mexico Department of Transportation (NMDOT) in collaboration with the Federal Highway Administration (FHWA) addresses issues of environmental and cultural compliance following federal and state laws, executive orders, rules, and regulations (especially as part of the 36 CFR 800-Section 106 regulation). NMDOT and FHWA use the Statewide Transportation Improvement Program (STIP) list of projects to engage tribes early in project development, so tribal comments and concerns can help avoid impacts on historic and traditional cultural properties and practices. Traditionally, NMDOT has requested tribal input via digital lists and general maps of STIP projects. The NMDOT Tribal Consultation Portal was developed to facilitate project viewing and tribal communication and engagement in the project development process. This web-based ArcGIS map server allows tribes to have a close-up view of projects, provide feedback, and participate more interactively in the consultation process. Access to the NMDOT Tribal Consultation Portal offers detailed project information, searchable by project control number, title, route, county, STIP listing date, NMDOT district, and tribal-affiliated counties. The portal features a feedback form for tribes to submit project-specific comments, recorded in an integrated database. Future updates will feature customized project views tailored to the specific interests of each tribe.

Tsitohery, François Ricky Justome [59] see Singman-Aste, Lily

Tsukamoto, Kenichiro (University of California, Riverside), Luz Evelia Campaña Valenzuela (Independent Researcher), Javier López Camacho (Escuela Nacional de Antropología e Historia), Montserrat de Jesús Verdejo Balan (Escuela Nacional de Antropología e Historia), and Uriel Camacho Márquez (Escuela Nacional de Antropología e Historia)

[349] *Excavations of Structure S21-1 at El Palmar, Campeche, Mexico*

This paper presents the result of excavations at the palace of El Palmar, Campeche, Mexico. During the 2022 field season, we conducted horizontal and stratigraphic excavations at Structure S21-2, which closes the south end of the palace. With four other range structures, Structure S21-1 forms Plaza G, the most restricted gathering space at the site. The excavations exposed a single gallery divided into six rooms, with a huge masonry bench installed at its center. The excavations also yielded termination deposits on the room floors covered by ash layers. These deposits contained several complete or semi-complete vessels, lithic tools, bone artifacts, and shell ornaments. Diagnostic artifacts to determine occupants included a large plate adorned with glyphic texts depicting royal titles and bone needles, one of which was carved with a mat sign. Radiocarbon dating and ceramic analyses suggest that the structure was initially built with three *mascarones* on its façade during the Middle Classic period (391–548 cal CE). The structure was later remodeled during the Late Classic period (ca. 600–800 CE), burying the *mascarones*. The spatial settings, architectural elements, and artifacts with royal symbolism suggest that El Palmar's royal families occupied Structure S21-1. *****This presentation will include images of human remains.**

Tsukamoto, Kenichiro [231] see Sullivan, Kelsey

Tu, Ruoyang (Yale University), Micah Gold (Yale University), and Andrew Koh (Yale University)

[299] *Detection of Pottery Sherds Using sUAS-Based Multispectral Imagery with Rule-Based and Machine-Learning Methods: An Experimental Archaeology on Horse Island in Branford, CT*

From the increasing affordability and availability of commercialized drone products in the recent decade,

drone imaging has wide application in various disciplines including archaeology. The full potential of multispectral drone imaging has yet to be explored for remote sensing in archaeological projects. In March 2023, the team from the Yale Ancient Pharmacology Program conducted an experimental archaeology project to collect multispectral drone imaging data from the modern pottery sherds spread over the land cover on Horse Island in Branford, CT, stewarded by the Yale Peabody Museum. Under the approval of Department of Environmental Health and Safety of Yale University, the project was fully operated by licensed sUAV pilots. This study uses three algorithms—thresholding, unsupervised, and supervised machine learning—to evaluate the respective effectiveness as detection methods. The reflectance spectrum of pottery sherds demonstrates that the Near-Infrared band is the most effective for detection methods. While all methods cannot fully exclude non-pottery features, the unsupervised method has the most capability in batch-processing in the field. Through the a priori distribution of pottery sherds, this technique has implications in optimizing the research design of archaeological surveys. Further studies will develop a normalized index for pottery for remote sensing.

Tuan Luan, Pham [61] see Macrae, Scott

Tuite, Rachel

[85] *The Dry Creek Crossroad: Traditional Knowledge and Petroglyphs*

The Dry Creek Site is a multi-panel, multicomponent rock art site containing both historic Ute and Ancestral Puebloan motifs as well as historical and modern Euro-American images, located in a natural drainage corridor in the San Luis Valley of the Upper Rio Grande Basin. These corridors were frequently used to ascend and descend the steep mountains surrounding the San Luis Valley more easily during bison hunts. Although the petroglyphs present at this site are inherently sacred to multiple Tribal bodies, they have not been recorded before by archaeologists. The goals of this project are threefold: (1) preserving this sacred knowledge and sharing it with the descendant populations (the primary goal of the project), (2) determining the cultural and possibly temporal affiliations, and (3) characterizing the pattern and frequency of use of this site by different groups. In consultation with 25 Tribes and including participating Tribes' cultural perspectives and the standards for recording rock art, the site was recorded, photographed, and illustrated using noninvasive and nondestructive traditional illustration methods. The images and motifs are consistent with long-term, repetitive seasonal use of the wash by Ancestral Puebloan and Ute peoples before the involvement of European-American settlers in the mid-1800s.

Tune, Jesse (University of Mississippi), D. Shane Miller (Mississippi State University), and David Anderson (University of Tennessee, Knoxville)

[96] *Site Formation Theory and Survivorship Bias in the Representation of Ice Age Sites in the American Southeast* Anderson (1990) used data from statewide fluted point surveys to argue that the distribution of fluted points was non-random and likely reflected “staging areas” for the peopling of the Americas. In succeeding years, others have argued that the clusters of points and sites reflect biases in the recording and recovery of fluted points. Here, we build on previous studies by using regional geomorphology, paleoenvironmental data, the Digital Index of North American Archaeology (DINAA), and the Paleoindian Database of the Americas (PIDBA) to examine the distribution of the early archaeological record of the American Southeast for the effects of “survivorship bias” in the documentation of fluted points.

Tune, Jesse [175] see Miller, D. Shane

Tung, Tiffany [89] see Cheever, Sylvia

Tung, Tiffany [343] see Krause, Maya

Tung, Tiffany [109] see Locker, Angelina

Turley, Samantha (Vanderbilt University)

[223] *Imperial Influences and Colonial Transformations: A Diachronic Study of Building Energetics and Production Practices in the Colca Valley, Peru*

Archaeologists have long used architectural energetics to better understand the relationships between labor

organization, political power, and materiality in premodern societies. The sixteenth-century Spanish invasion of the Andes caused unprecedented societal upheaval and, in the 1580s, the physical upheaval of people as the Toledan *reducción* system resettled communities into concentrated towns. It remains largely unclear how architectural production practices changed throughout this period despite scholastic attention to architecture features and building forms overall. Addressing production practices requires the reconstruction of the *chaîne opératoire* of buildings from the peri-colonial period. Crucially, this includes the calculation of labor-time estimates for sites and individual structures so they may be compared. This study builds on the author's previous work to systematize masonry typologies through the quantification of masonry features in the Colca Valley of southern Peru. It also builds on three fieldwork seasons in the valley identifying material sources and production sites as well as preliminary material testing with pXRF to determine the composition of building materials like mortars, plasters, and stuccos. These factors contribute to nuanced energetics estimates which will in turn shed light on transformations of the *chaîne opératoire* and the experiences of the communities who built and maintained these structures.

Turner, Bethany (Georgia State University), Elva Torres (Dirección Desconcentrada de Cultura, Cusco, Perú), and Karla Vargas Arenas Cárdenas (Dirección Desconcentrada de Cultura, Cusco, Perú)

[26] *Ethical Bioarchaeology in Practice: The View from Cusco, Peru*

NAGPRA has served as a crucial signpost for US bioarchaeologists in their efforts to be and do better, including those who study skeletal individuals from (and in) other regions of the world. In these contexts, the most important NAGPRA directive is arguably for US bioarchaeologists to center the perspectives, concerns, and priorities of descendant communities, including in-country bioarchaeologists, in their research designs, methods, analyses, and dissemination. This is especially the case in the Cusco region of highland southern Peru. Two of us are Cusqueña and one of us is Anglo-North American; we thus bring our own experiences and training to bear on what “doing and being better” should look like for foreign bioarchaeologists working in this region. We discuss common perspectives and themes among different Cusqueño/a communities related to the excavation, analysis, and display of archaeological human remains. They include long histories of ancestor veneration and interaction with the dead; significant mobility and migration, necessitating a multilocal view of identity, ancestry, and descendants; and varying points of view related to the exhibition and custody of skeletal or mummified individuals in museums and research settings. Throughout, we stress the importance of flexibility and localized context in formulating an international bioarchaeological praxis.

Turner, Bethany (Georgia State University)

[386] *Embodied Identity in the Inka Heartland: A Comparative Bioarchaeological Perspective*

The bioarchaeology of the Central Andes has expanded dramatically since the 1990s, providing nuanced framings of identity, health, labor, conflict, and consumption across 10 millennia. Bioarchaeological research in the Cusco region is less prolific compared to others such as the north coast and Titicaca basin, but it has pursued similar questions related to embodied experience. This work is often situated within the rise, consolidation, and disintegration of complex polities and imperial states spanning the sixth through sixteenth centuries CE. This paper synthesizes results from a comparative paleopathological and multi-isotopic study of social identities and lived experiences in the Inka Empire. Analyses of people interred in three Inka sites in the Sacred Valley (Machu Picchu, Patallaqta, and Salapunqu) and one overlooking Cuzco (Saqsaywaman) have centered on reconstructing fundamental aspects of everyday life across the life course among several hundred skeletal individuals, contextualized with existing osteological, archaeological, ethnohistoric, and mortuary data. The results suggest different Inka social identities given to the groups at each site, as the respective cohorts exhibit distinct, intersectional patterns of residential origin, diet, health indicators, estimated biological sex, and mortuary treatment. These patterns compellingly complicate ethnohistoric portrayals of retainers, chosen ones, and foreigners within the heart of Tawantinsuyu.

Turner, Bethany [323] see Axume, Denise

Tuross, Noreen (Harvard University), and Nelly Robles García (Instituto Nacional de Antropología e Historia)

[242] *From the Hands of the Artists: The Chronology of La Cueva de las Manitas*

Dating the production of rock art has been difficult and contentious. At La Cueva de las Manitas, the artists left implements used to apply the pigment to the rock surfaces and provided us with materials amenable to radiocarbon dating. The radiocarbon dating of a wider sampling of materials from this cave confirms the recurrent use of the cave with periods of more intense presence. Emerging from these analyses are the persistent temporal overlap in CAM and C₄ plant carbon isotope values in this area of Mexico, important in dietary interpretations and the oldest direct AMS date for a chili pepper in the area. In sum, sometimes more dating is better and recent developments in the field of radiocarbon will open up the possibility of lower cost, site level chronologies for the archaeologist.

Tushingham, Shannon [380] see Carney, Molly

Twiss, Katheryn [86] see Drees, Svenya

Tykot, Robert (University of South Florida), Kathryn Weedman Arthur (University of South Florida, St. Petersburg), and John Arthur (University of South Florida St. Petersburg)

[69] *Trade and Exchange of Obsidian from Historic Ritual Sites in Southwest Ethiopia*

Nearly 400 obsidian artifacts from a dozen sites in southwestern Ethiopia were analyzed to address source selection for ritual activities. This involved the Gamo ethnic group at historic sites dating to the seventeenth–nineteenth centuries, where men are hide-workers of all materials. Another site, the Mota Cave, dates back to 4500 BP and provides a comparative case prior to the development of caste groups. Overall, the results for these ritual contexts are compared with our earlier study of more than 300 obsidian artifacts from residential contexts at sites in the same region. These analyses were conducted within the National Museum in Addis Ababa, Ethiopia, using a nondestructive, portable X-ray fluorescence spectrometer, the Bruker Tracer 5g. The instrument used provides calibrated data specifically for obsidian, for elements including Fe, Rb, Sr, Y, Zr, and Nb. These results are comparable with other sourcing studies, which use a variety of analytical methods. The distance between these sites and geological obsidian sources such as Baantu suggests there may have been trade with other historic ethnic groups, rather than direct access over such long distances. Our scientific analyses of obsidian artifacts thus provides important information about the socioeconomic practices of the caste system in Ethiopia.

Tyo, Ethan [225] see Hummel, Taylor

Tzur, Yoav [99] see Belmaker, Miriam

Uc González, Eunice [104] see Serafin, Stanley

Ugalde, Paula (Universidad Alberto Hurtado), Calogero Santoro (Universidad de Tarapacá), Eugenia Gayo (Universidad de Chile; Center for Climate and Resilience Research), Claudio Latorre (Pontificia Universidad Católica de Chile), and Rafael Labarca (Pontificia Universidad Católica de Chile)

[53] *Early Peopling of the Hyperarid Core of the Atacama Desert, 18 Years Later*

Pampa del Tamarugal (PdT), an inland basin in the Atacama Desert's lowlands, has become a focus for South American early peopling. Two pulses of increased rainfall in the highlands, between 18 and 9.5 ka cal BP, affected the desert's hyperarid lowlands through runoff and elevated water tables. Excavations have uncovered six archaeological sites ranging from 12.8 to 11.2 ka cal BP. These sites present methodological and chronological challenges. All of them are deposited at or near the surface, due to the paucity of aggradation in the region during the Holocene. Geoarchaeological analyses allow us to understand their postdepositional history. Sites were deposited atop ≥Pleistocene surfaces—showing traces of the presence of water in an otherwise barren landscape (a B horizon or a floodplain)—and then covered by aeolian sands. Palimpsests are confined to the timespan of early peopling occupations. Artifacts are mixed by two processes: salt expansion and contraction

and earthquakes. Since sites are deposited on stable surfaces often covered by a thin salt crust, deflation has not played an important role. Radiocarbon modeling indicates that the main occupation of the PdT occurred between 11.9 and 11.2 ka cal BP, and that older dates might correspond to subfossil wood.

Ullah, Isaac (San Diego State University)

[341] *GIS as a Hub for Archaeological Landscapes Research*

In a recent meta-analysis of archaeological GIS publication trends (Ullah, Clow, and Meling 2024), my colleagues and I determined that the major focus in archaeological GIS advancement has been methodological rather than theoretical and that GIS cannot yet be considered a paradigm for spatial thinking in archaeology despite more than 40 years of integration within the discipline. In this paper, I will sketch out a vision for centralizing GIS as a hub around which to integrate landscape studies in archaeology. I will argue that the digital nature, inherent spatiality, and extensibility of GIS software gives it a unique position in landscape archaeology workflows. More than “just a tool,” however, GIS can also be an epistemology for investigating spatial phenomena in archaeology, and so can act as a bridge between the diverse approaches and concepts employed by a diverse set landscape archaeology practitioners. Pragmatically, GIS is also well poised to be this connector due to its ubiquity and long history within the discipline. I will attempt to showcase how, with a few reflexive adjustments to how archaeologists tend to view and employ GIS in our work, we can make significant headway toward centering GIS as a theory-building framework in landscape archaeology studies.

Underhill, Anne (Yale University), Linda Nicholas (Field Museum of Natural History), Hui Fang (Shandong University), Rory Dennison (Oakton College), and Cyrus Banikazemi (University of Illinois, Chicago)

[44] *Production and Circulation of Fine Black Wares in Late Neolithic Shandong*

A debated issue for the late Neolithic Longshan period in eastern China is the nature of the production and circulation of fine black wares. Southeastern Shandong is especially distinguished by the quantity of vessels that have fine paste, polished black surfaces, and elegant forms—yet direct evidence for production in the form of kilns remains elusive. Some publications argue for elite control of fine wares while others hypothesize that independent production was prevalent. Collection of numerous fine paste sherds from sites of varying sizes during our regional survey in southeastern Shandong from 1995 to 2007 provides a good opportunity to shed light on the production and circulation of black wares during the early and middle Longshan period. Our LA-ICP-MS analyses of sherds suggest widespread access to the technologies and skills necessary for production of the fine black wares. The data for both Longshan phases suggest multiple production units, a pattern supported by other lines of evidence including petrographic analysis for both coarse wares and fine wares. Although there was some local and long-distance transport of vessels during both phases, it appears that long-distance circulation of vessels increased during the middle Longshan period.

Underhill, Anne [320] see Huang, Xinyi

Unruh, David, and Emmanuel Macias (Statistical Research Inc.)

[298] *Faunal Analysis of Collections from Chilili, New Mexico (LA 847)*

Under contract with the New Mexico Department of Transportation for a bridge replacement undertaking, Statistical Research Inc. performed an analysis of 3,143 faunal specimens from the Early Pueblo period component at Chilili, northernmost of the recognized Salinas province pueblos. The results of the analysis suggest that Chilili does not fit neatly into preconceptions regarding Puebloan faunal research in the region. Unlike other Salinas province pueblos such as Gran Quivira and Pueblo Blanco where bison were procured directly from Plains groups and were a major dietary component, the Chilili assemblage contains no identified bison remains. Pronghorn represent most of the identifiable artiodactyl elements, suggesting that the inhabitants may have engaged in communal hunting on the nearby plains that may have negated the need to trade for bison. In this respect, Chilili is more similar to East Sandia Mountain sites to the north such as Tijeras Pueblo and San Antonio de Padua than to the Salinas province pueblos to the south. Multiple lines of evidence, including high Artiodactyl Index and Lagomorph Index values, as well as artiodactyl long bone proportions and breakage patterns, suggest that subsistence at Chilili was supplemented by meat obtained through the hunting of locally available artiodactyls and lagomorphs.

Ur, Jason (Harvard University), and Aja Lans**[365]** *Postmortem Segregation in the Colonial Cemeteries of Greater Boston*

New England long benefited from the myth of a “gentler” form of slavery, framed in opposition to plantation slavery of the South. It is true that in New England, the enslaved typically lived in their owner’s homes, but this proximity to whiteness produced unique forms of violence and marginalization. The enslaved were not considered equal members of the household. The landscape archaeology of colonial burial grounds demonstrates that in death, the few enslaved who received headstones were segregated and isolated from the families that they served both in life and death. Our presentation reviews the colonial burying grounds of the greater Boston area, with a particular focus on Cambridge, and the specific cases of Cicely (died 1714) and Jane (1741).

Ur, Jason [160] see Laugier, Elise

Urban, Patricia, and Edward Schortman (Kenyon College)**[171]** *Using Petrographic Analyses to Describe Changes in Paste Formulas for Ceramics Spanning 1200 BCE–1530 CE in Three Adjoining Valleys within Southeast Mesoamerica*

Petrographic and instrumental neutron activation analyses of red-on-natural ceramics dating to CE 600–1000 revealed complex relations among paste compositions and modes of vessel manufacture across five pottery workshops operating in three adjoining northwest Honduran valleys. For example, these artisans generally employed volcanic glass fragments as temper and mined clays from distinct sources with overlapping chemical signatures. Nonetheless, artisans’ preferences for certain clays and how they shaped and fired the containers distinguished workshops to varying degrees. Questions raised by the work include whether these paste treatments applied to other vessel classes and if intraregional variations in clay use recognized in the initial research characterized earlier and later periods. To begin answering these questions, we subjected to petrographic analysis samples representing the major ceramic types spanning the Early Preclassic (1200–800 BCE) through Late Postclassic (CE 1200–1530) in the three basins. We hoped to describe continuities and differences in how potters went about preparing their clays as they fashioned vessels over the full span of the area’s known occupation. To what extent were these practices passed on for generations, were there basin-specific variations in them, and when, and why, were they disrupted?

Ure, Scott [245] see Davidson, Jaron

Uribe, Mauricio (Universidad de Chile)**[342]** *Un recorrido con Randy McGuire por la arqueología de la complejidad social en el norte de Chile*

Conocí a Randy McGuire a partir de una fotocopia encontrada de su antiguo texto *Breaking Down Cultural Complexity* (1983), donde me convencí de que era posible un estudio arqueológico de la complejidad. Y desde ese momento, seguí su enfoque y lo incorporé a mis propios proyectos, gracias a los cuales tuve la oportunidad de invitarlo para compartir un inolvidable recorrido por Chile, con él y su compañera Ruth. En este homenaje, por lo tanto, comento una serie de casos que ejemplifican el impacto que ha tenido su obra y persona en la investigación que he desarrollado en el Desierto de Atacama. En particular, abordo el origen de la complejidad social desde sus expresiones arquitectónicas, diversificación y control de los espacios durante el Período Formativo de Tarapacá (900 aC-900 dC). Asimismo, trato hipótesis en torno a la desigualdad social que emergió en dichos momentos, pero que se consolidó y masificó durante el Período Intermedio Tardío (900-1400 dC), tanto en Tarapacá como en el río Loa y San Pedro de Atacama. Mientras que, la imposición del poder y la consolidación de sociedades de clases, las abordo desde los estados Incaico e Hispano en todo este territorio desde el Período Tardío (1400-1600 dC).

Uribe, Mauricio [394] see Wande, Claudio

Uribe Villegas, Maria [49] see Martín-Torres, Marcos

Urquhart, Kyle**[330]** *Crowds and Pedestrian Movement in Residential Urban Plazas at Angamuco, Michoacán*

This paper presents an agent based model used to simulate crowds of people gathering in public or semi-public plazas in residential neighborhoods at the site of Angamuco, Michoacán. The paper discusses the datasets and methodology behind the model, what kind of information it can provide, and discusses the statistical tests that can be used to infer accessibility of these spaces to groups of people. The paper will present the application of this model to studying the use of residential spaces at Angamuco and show how the approach can generate useful interpretations of how such spaces were constructed, modified, and utilized by groups of people. The results of this study indicate that conflicts between different social classes may have formed around these spaces over the course of the site's long occupation.

Uzawa, Kazuhiro (University of East Asia), Yuji Seki (National Museum of Ethnology), Juan Pablo Villanueva Hidalgo (Universidad Nacional Mayor de San Marcos), and Daniel Morales Chocano (Universidad Nacional Mayor de San Marcos)

[282] *Social Transformations during the Late Formative Period: Evidenced by the Emergence of Llama Husbandry and Shifts in Animal Utilization at the Pacopampa Site*

By 500 BC, domesticated camelids had spread to Peru's Northern Highlands. The complexity and societal development that emerged in the region have been attributed to the social networks facilitated using llamas as pack animals. However, the precise role of domesticated camelids during the Formative period remains ambiguous. We analyzed camelid skeletal remains excavated from the Pacopampa site to gain insights into their actual utilization. Osteometric analysis identified the camelids as llamas, with no evidence of alpacas in the samples. The frequency of body parts, distribution of butchering marks, and mortality profiles indicated the ritual consumption of the fleshy portions of young llamas, with four immature individuals being sacrificed. Although no direct evidence of secondary product use was found in the animal bone material, the increasing number of artifacts associated with textile production suggests that llama fiber might have resulted from herding practices. Llama husbandry, initiated in the late Formative period, represents a synthesis of knowledge, technology, and rituals and should not be viewed merely as a shift in subsistence strategies. Consequently, the social transformation from the mid to late Formative period should be interpreted as a closer integration between agricultural communities and llama-keeping groups. *****This presentation will include images of human remains.**

Uzawa, Kazuhiro [282] see Takigami, Mai

Uzzle, Stephen

[86] *Horse Paraphernalia: A Material Culture Study of the Reintroduction of Horses in the Americas and Their Integration into Native Cultures*

Horses were reintroduced in the Americas in the early sixteenth century by Spanish colonizers and adopted to varying extents by Native people over the following century. Evidence for Indigenous uses of horses in what is now the United States comes from written and oral histories, illustrations and depictions in rock imagery and other media, zooarchaeology, and equestrian-related artifacts. Horses were initially used to carry riders for hunting, warfare, travel, as beasts of burden, and as a food source. Only later were horses used as draft animals in agriculture. This research examines how Native peoples' use of horse tack varies across time and space based on evidence from three regions: the Plains, Southeast, and Southwest. Examining evidence for different types and items of horse tack provides information on whether and how Indigenous people chose to adopt or adapt equestrian paraphernalia introduced by colonizers or neighboring Indigenous groups.

Vachula, Richard [96] see Graf, Kelly

Valadez, Jocelyn [380] see Jenks, Kelly

Valcárcel Rojas, Roberto (Instituto Tecnológico de Santo Domingo), Jago Cooper, and Alice Samson (University of Leicester)

[371] *Indigenous Peoples and Africans in the Greater Antilles: Interactions and Identities*

The arrival of Europeans in the Caribbean also meant the arrival of Africans. From very early on, they were involved in the colonial process, mostly as enslaved labor. Their link with the Indigenous societies was early

and multiple, although it is a minimally studied topic. Using archaeological and historical data in this presentation we assess diverse spaces in the Greater Antilles where individuals from these ethnic groups interacted between the fifteenth and nineteenth centuries. We discuss the complexity of the links that these groups established, including cases of collaboration and confrontation, and how contemporary populations with African ancestors build their identity and assume from different perspectives the recognition of the Indigenous legacy.

Valcárcel Rojas, Roberto [371] see Samson, Alice

Valdez, Francisco

[105] *Volcanic Tephra and the Precolumbian Occupations at the Laguna de la Ciudad Region of Northern Esmeraldas*

The coast of the province of Esmeraldas is dominated by a mangrove / humid tropical forest ecosystem, which is apparently not conducive to large population concentrations. However, the northern area was once the focus of a complex social formation now called La Tolita. Human adaptation to tropical environments with wetlands is reflected in the organization/use of space and the development of productive systems with specialized techniques. One of these systems, raised fields agriculture, or *camellones*, has been evidenced in an area known as Laguna de la Ciudad. Located at the tip of the Santiago River delta, the region was occupied since the first millennium before the Common Era. The presentation describes the archaeological evidence related to the precolumbian occupations in the region, their evolution, and eventually their disappearance in the thirteenth century after the ash deposits from the Quilotoa eruption hindered the agricultural practices. The general theme is the settlement of the region, the use of space, and the socioeconomic development of the region, in spite of several volcanic ash deposits that have been registered in the stratigraphic cuts.

Valdez, Fred [381] see Brady, James

Valdez, Fred [109] see Locker, Angelina

Valdez, Fred [391] see Pengilley, Alana

Valdez, Richard, Perri Allen (University of New Mexico), William Holmes (University of New Mexico), Naomi Szweda (University of New Mexico), and Nicholas Poister (University of New Mexico)

[224] *Variation in Architecture and Occupation of Field Houses on the Tonque Agrarian Landscape*

Between the massive Classic period pueblos of Tonque and Paako runs an intermittent tributary of the Rio Grande. Along the relatively lush banks of this drainage are a high density of small precontact structures, or field houses, as well as agricultural features including check dams, terracing, and grid gardens. The sites on this Tonque agrarian landscape are conventionally interpreted as elements of a strategic settlement pattern in which inhabitants of the large pueblos spread out across the terrain during the maize growing season to maximize the region's productive capacity. During the 2024 season, the UNM Archaeology Field School set out to survey and document a portion of this area. We found considerable diversity in architectural design, artifact assemblages, interval of occupation, and topographic setting. We present the preliminary results of this study, comparing various field house characteristics across sites to evaluate whether they might be classifiable into an approximate typology. With this information, we test the quality of fit of our data with the seasonal dispersal model. There is a degree of urgency to this work: the study area is presently subject to significant alluvial erosion and channel incision, imperiling many of the sites.

Valdez Ordoñez, Leonardo (Harvard University)

[180] *New Methodological Approaches to Human-Animal Interactions within the Teuchitlán Culture*

Zooarchaeology by Mass Spectrometry (ZooMS) has revolutionized the study of zooarchaeology within the last 15 years. This is especially true for faunal assemblages where traditional methods are not sufficient to identify the specimens to specific taxonomic classifications due to poor preservation conditions for bone. In the case of the faunal assemblages from Los Guachimontones and the Tequila Valleys, ZooMS can be used to provide identifications for morphologically unidentifiable specimens. This is crucial for contextualizing further analytical data, such as stable isotope analysis concerning questions of diet. Combining these zooarchaeology-

focused methods with an analysis of animal representations in West Mexican ceramic figurines can increase our understanding of human-animal interactions at Los Guachimontones and other Tequila Valley sites. Based on archaeological contexts and artistic representations, these interactions include utilitarian and ritual uses, as well as the symbolic and ideological associations given to animals by humans. Social zooarchaeology, as a theoretical framework, can elucidate the multifaceted human-animal interactions that took place in Central Jalisco during the Formative and Classic periods. Analysis of these human-animal interactions can also clarify the degree to which the inhabitants of Los Guachimontones considered animals to have agency and explain the symbolic and ideological associations embodied by certain species.

Valenzuela, Antonia

[394] *Las pinturas cuzqueñas: Animales y plantas que resisten*

Las pinturas cuzqueñas cuentan con una enriquecedora experiencia en torno a lo que nos dice el pasado y su vinculación con el medio de antaño; por ende, las representaciones y simbolismos que el arte entrega como fuente historiográfica servirá para conocer cómo se comprendió a la flora y fauna de la región. En consecuencia, propongo indagar cómo los pintores indígenas coloniales, tales como: Diego Quispe Tito, Basilio de Santa Cruz, Zapaca Inga y entre otros hacen una apropiación y redescipción del paisaje surandino. Los animales americanos juegan un papel constitutivo en la reapropiación cultural y en el sincretismo cultural propio de la época, donde colores, saberes y sabores coexisten y se acoplan para generar *algo nuevo*. Por lo tanto, existe una doble lectura: la resistencia indígena ante el sometimiento cristiano europeo y la creación de algo nuevo, en este caso, la presencia de cosmovisiones, representaciones y simbolismos propios de una cultura en crisis y coyuntural. Así, la representación y ornamentación de los animales americanos presente en pinturas, restos arqueológicos, esculturas y monumentos marcan un precedente simbólico importante, pues se articula y se expone el juego de los dominios entre europeos e indígenas, entre la Corona Española y el Tahuantinsuyo.

Valenzuela, Daniela [182] see Capriles, José

Valera Cumapa, Erick (Incanto)

[46] *Donald Ward Lathrap y su trabajo con el pueblo Shipibo Konibo*

Donald Lathrap fue un arqueólogo estadounidense que llegó al Perú en 1956 para realizar su estudio de doctorado a lo largo de la ribera del río Ucayali. En el proceso de su trabajo, Lathrap desarrolló un profundo aprecio y afecto por el pueblo Shipibo Konibo, además de amistades muy cercanas, particularmente con sus compadres e informantes etnógrafos, Catalino Cumapa y Manuel Rengifo Barbaran. Esta presentación muestra su trabajo con el pueblo Shipibo.

Valle, Francisco [294] see Walker, Mikaila

Vallejo, Silvia, Patricia Mothes (Instituto Geofísico-Quito Ecuador), Minard Hall (Instituto Geofísico), and Silvana Hidalgo (Instituto Geofísico)

[105] *Volcanic Ash Dispersion Study along the Coastal Region in Ecuador, a Study over the Last 7,000 Years*

In the Ecuadorian Andes, around 90 volcanic centers are identified; of them, six volcanoes had important activity during the Holocene–Pleistocene (Cuicocha, Pulumahu, Guagua Pichincha, Atacazo-Nihahuilca, Cotopaxi, and Quilotoa), causing regional affectation that is visible along the regional stratigraphic record. Volcanic sources, eruption dates, and geographic distribution of representative volcanic ash layers in the Sierra are well known, but this is not the case for the coastal region where they are intercalated with pre-Inca relicts. The main purpose of this study is to identify the volcanic source of the ash layers found in the coastal region. To reach this goal we collected more than 90 ash samples from proximal volcanic ash from the proposed volcano sources and distal ash samples from 21 sites between northern Esmeraldas and Manabí (mainly archaeological sites) in order to develop a regional tephra stratigraphic guide. Binocular observations helped to classify distal and proximal samples by mineralogical content and componentry features such as pumice grain sizes, mineral types, and varied shapes of glass to establish a correlation between them. With these results, we assigned a source for most coastal ash deposits. Geochemical methods confirmed the signature correlation between the ash source and the distal samples.

Valqui Güimack, Miguel (Zona Arqueológica Caral, Ministerio de Cultura 003 / MC), Marco Antonio Machacuay Romero (Zona Arqueológica Caral, Unidad Ejecutora 003 / MC), and Ruth Shady Solis (Zona Arqueológica Caral, Unidad Ejecutora 003 / MC)

[195] *Organización del espacio doméstico y áreas de actividad en un conjunto residencial del subsector F3 de Áspero, litoral del valle de Supe, Perú*

Durante el Formativo Inicial (3000-1800 aC) en el valle de Supe, se desarrolló un complejo sistema de asentamientos dominados por construcciones monumentales, caracterizados por edificios piramidales asociados a plazas circulares hundidas. Sin embargo, estos sitios también presentaron otro tipo de construcción como residencias, espacios públicos, talleres, almacenes. En este panorama, Áspero, ubicado en el litoral de Supe, fue un asentamiento muy importante ya que es el único sitio de este periodo ubicado en el litoral, y que tuvo un acceso directo a los recursos marinos. Por este motivo, la presente ponencias se centra en entender la organización del espacio doméstico y las áreas de actividad de un conjunto residencial (subsector F3), con la finalidad de conocer como la población de Áspero realizó principalmente sus actividades de subsistencia y como organizaron el espacio para construir sus residencias.

Valqui Güimack, Miguel [172] see Mayta Campos, Daniel

Van Alst, Emily (Washington State University)

[368] *(Re)Visiting Our Relatives: Relating Rock Art Imagery to Other-Than-Human Kin*

Recent calls to understand our human experience in relation to the experiences of other than human kin not only have significant implications for how archaeologists understand the past but also for how archaeologists incorporate Indigenous framings of relating to the cosmos in a culturally holistic sense. In this paper, I will explore how the Northwest Plains rock art sites with elk imagery and women-made motifs are related to local Indigenous conceptions of more than human kin, including plants, elk, and waterways. By exploring the relationship between rock art images and landscape features, we can better understand the meaning of the images and how they relate to broader ecological and cultural landscapes. Using a relationality framework to synthesize archaeological research, environmental data, and Indigenous relationality scholarship, elk rock art imagery in the Northwest Plains can be part of a larger world of elk knowledge inclusive of multidisciplinary scholarship frameworks and more traditional understandings.

Van Alst, Emily [293] see Fladd, Samantha

Van Alst, Emily [368] see Radchenko, Simon

Van Buren, Mary (Colorado State University)

[230] *Men and Women of the Wild West: The Social Production of a Red-Light District in Ouray, Colorado*

Since the 1980s, studies of prostitution, a key component of red-light districts, have focused almost exclusively on female sex workers. While an important corrective to the omission of women from historical accounts of the West, red-light districts were constructed, worked at, experienced, and destroyed by people of different genders, classes, and races. This paper employs an intersectional approach that investigates the ways in which groups with mutually constituted identities—middle- and working-class men and women of different ethnic backgrounds—co-produced the Vanoli Block, a locally infamous sector of the red-light district in turn of the twentieth-century Ouray, Colorado.

Van Der Leeuw, Sander (SHESC/Arizona State University)

[111] *Tim Kohler at SFI: A Serious Attempt at Modeling the Development of Prehistoric Societies*

Timothy Kohler spent many years interacting with colleagues at the Santa Fe Institute. During his first stay he mastered, unusual for archaeologists, the complex systems approach developed there and began to apply it to settlement pattern modeling in the four corners area. That led to what is in my opinion to date the most sophisticated dynamic model of the long-term evolution of that area's demographic, social, cultural, and environmental dynamics. The paper will present some of its conclusions, and discuss its potential impact on archaeology, on the area, and on our understanding of human social dynamics more in general.

Van Harderwijk, Mick [229] see Dusseldorp, Gerrit

Van Keuren, Scott [305] see Haverland, Fiona

van Niekerk, Karen [284] see Beller, Jeremy

Van Rensselaer, Maximilian (Chronicle Heritage)

[68] *Machine-Learning Approaches to Archaeological Sensitivity Modeling in the Age of Wildfire, Lake Tahoe Basin Management Unit, California and Nevada*

Machine learning is a powerful tool for archaeological sensitivity mapping. This research compares machine learning approaches to Middle and Late Archaic archaeological prediction in the Lake Tahoe Basin Management Unit, California and Nevada. Specifically, the analysis seeks to answer whether logistic regression, Random Forest, or Maximum Entropy models perform better at archaeological prediction. The explanatory variables used to predict site presence include elevation, slope, aspect, distance to streams, land cover, soil, and geology. Of all three models, Maximum Entropy produced the most accurate predictive models based on combined diagnostic metrics. Predictive modeling is a valuable tool in preventative archaeology, where identifying and mitigating adverse effects to archaeological sites in a time-efficient manner is critical. Environmental challenges such as uncontrolled wildfires provide an impetus for Indigenous communities, management agencies, and researchers to employ predictive modeling approaches in preventative cultural and heritage resource management applications.

Van West, Carla [375] see Windes, Thomas

VanDerwarker, Amber [235] see Domic, Alejandra

VanDerwarker, Amber [337] see Johnson, Emily

VanDerwarker, Amber [102] see Wilson, Gregory

Vandevelde, Ségolène (University of Quebec, Chicoutimi), Adelphine Bonneau (Université de Sherbrooke, QC, Canada), L. Paul Bédard (Université du Québec, Chicoutimi), Erik Langevin (Université du Québec, Chicoutimi), and Edwige Pons-Branchu (Laboratoire des Sciences du Climat et de l'Environnement, UVSQ, Paris-Saclay, CNRS)

[174] *A Multidisciplinary Approach to Access Temporality of Use of Rock Art Sites*

Rock art is one of the oldest forms of symbolic expression, offering unique insights into the human spirit and providing a window into the worldview and cosmogony of its creators. Despite extensive study worldwide, many questions remain unanswered: What is the temporality of use of rock art sites? Are there multiple creation phases? Are they distant in time? Can we measure their time gap? In the case of Canadian Shield rock art, another critical question emerges: How can we date red figures covered by silica crusts? In this presentation, our objective is to share and discuss innovative integrated approaches to dating rock art. Therefore, we will first present complementary approaches applicable to carbonate contexts, using fulginochronology (microchronology of soot deposits marking human occupations in site) coupled with direct dating. We will then detail the complementary strategies we have to develop to address limitations in Canadian Shield context, focusing on two rock art sites in Quebec. We will focus on how pigment characterization analysis can reveal different paint “recipes,” potentially indicating various phases of creation and how high-resolution geochemical analysis of thin silica crusts might serve as a new chronometric tool to discuss the timing of painted figures.

VanPool, Christine [236] see Mueller, Rachel

VanPool, Todd [236] see Mueller, Rachel

VanValkenburgh, Nathaniel [189] see Zimmer-Dauphinee, James

Varadzin, Ladislav [229] see Ambrose, Stanley

Varadzinova, Lenka [229] see Ambrose, Stanley

Vargas Arenas Cárdenas, Karla [26] see Turner, Bethany

Vargas Carbajal, Gracia Sara [48] see Diezbarroso, Alberto

Varillas, Rosa (UIC)

[354] *Inka Political Economy and Provincial Control in Chala, Arequipa, Peru (1470–1532 CE)*

This project aims to explore the intricate and varied interactions between empire and colonies. By focusing on the Inka Empire and the local coastal populations in the Chala regio (southern Peruvian Pacific coast), this research aims to examining interactions between the Inka and local groups, identifying the coastal resources utilized by both populations, and comparing the patterns of Inka imperialism in Chala with those in other regions. At the heart of this research is the archaeological site of Puerto Inka, a key location on the Inka Road network that connected the coast with the Andean highlands. This study seeks to transform our understanding of the Inka coastal political economy by investigating how the Inkas accessed and exploited coastal resources, the nature of their interactions with local groups, and how these dynamics compare to other regions of the empire. *****This presentation will include images of human remains.**

Varis, Aristeidis

[332] *Spring Landscapes as Persistent Places of Human Occupation: A Multidisciplinary Approach Investigating the Paleolithic of Kazakhstan*

The first dispersals of *Homo sapiens* into Asia occurred during the Late Pleistocene (ca. 129,000–11,700 years ago) and involved traversing arid regions. Springs are groundwater systems that likely played a vital role in human expansion across arid areas where surface waters, like rivers and lakes, were scarce. Despite this, the general relationship between spring formation and human occupation remains unclear due to the lack of systematic studies on spring landscapes. Kazakhstan is a crucial area for studying spring landscapes, lying at the crossroads of human dispersals in arid Central Asia. Moreover, it has a high tectonic activity that promotes spring formation and a growing number of Paleolithic sites associated with springs.

SPRINGSCAPES is an upcoming Marie-Curie project that explores the possible use of spring sites as persistent places of human settlement in Kazakhstan using an interdisciplinary approach. Grounded on archaeological survey, landscape analysis, and geoarchaeology, SPRINGSCAPES aims to couple landscape evolution with site formation processes. By examining the interplay between hunter-gatherer mobility and water availability, SPRINGSCAPES seeks to contribute to the study of Paleolithic Central Asia, propose geoarchaeological methods for the analysis of spring sites, and provide long-term insights into the use of groundwater resources in arid regions.

Varis, Aristeidis [332] see Namen, Abay

Varney, R. A. [301] see Scott Cummings, Linda

Varney, Tamara [233] see Brown, Matthew

Vasquez, Greg [223] see Sakai, Sachiko

Vasquez, Noelle (ASM Affiliates), Leticia Soares, and Zev Cossin

[159] *Evaluating a “Restorative History” Framework for Archaeological Research and Field Schools*

Restorative History is an approach that deploys Public History as a practical tool for justice by confronting root causes of harm and their ongoing legacies today. Drawing on threads of Restorative Justice, institutions like the Center for Restorative History at the Smithsonian’s National Museum of American History have developed this framework as a tool for responsible and justice-oriented heritage work. In this paper, we reflect on our own attempts to develop this framework as a tool for archaeological research and field school education in Cayambe, Ecuador. Given archaeology’s own role in perpetrating historical harm, we discuss the theory of this approach in our work, as well as the methods and execution during the 2023 summer field season. Our project produced fantastic new modes of collaboration and applications of archaeological fieldwork but also challenges and questions about the true measures of success for justice-oriented archaeology.

Vásquez, Segundo [273] see Goepfert, Nicolas

Vásquez, Segundo [273] see Villa, Valentina

Vásquez, Víctor [182] see Mader, Christian

Vasquez Pazmino, Josefina (USFQ)

[190] *Prehispanic Chronology of Settlements in the Ecuadorian Amazon*

Archaeological research in the Amazonian region provides detailed data on sites classified as villages, hamlets, and temporary or seasonal dwellings, with a wide cultural and chronological diversity. Prehispanic settlements, both nucleated and village-type, consisted of houses built on earth mounds and connected by plazas, roads, raised fields, and geoglyphs. On the contrary, scattered hamlets were found on terraces carved into slopes on the edges of alluvial valleys. There is also evidence of walled constructions or houses with stone foundations, interpreted as possible advances of colonial and more recent interactions by people from the Andean highlands. However, these interpretations need to be supported by radiocarbon dates. For this reason, this work aims to compile a bank of absolute dates to produce a chronological synthesis of the Ecuadorian Upper Amazon using OxCal (Bronk Ramsey, 2009). Specific goals include tracing older regional patterns of human settlement, inferring possible migratory routes, and examining the direction of mobility of past populations through time. Although the study focuses on providing information at a regional scale, particular emphasis will be placed on two case studies: the village of Te Zulay in Pastaza and the hamlets of the Quimi Valley in Zamora-Chinchipec.

Vasquez Pazmino, Josefina [321] see Anzellini, Armando

Vasquez Pazmino, Josefina [200] see Christie, Jessica

Vazquez, Angel [125] see Merchant, McKenzie

Vazquez-Alonso, Mariana (Connecticut College), David Lentz (University of Cincinnati), Nicholas Dunning (University of Cincinnati), Armando Anaya Hernández (Universidad Autónoma de Campeche), and Christopher Carr (University of Cincinnati)

[239] *Forest Resources Estimation for the Ancient City of Yaxnohcah*

Lake sediments have been a source of information on vegetation and precipitation change in the Maya area. However, for interior areas of the Yucatán Peninsula where perennial surface water is reduced, the use of proxy data about vegetation and rainfall patterns of the past can also be derived from wetlands. Besides cores in reservoirs for pollen analysis, the identification of archaeological charcoal and eDNA from Yaxnohcah complemented the understanding of the past forest composition. Additionally, the survey of the modern forest provided diversity values, distribution of the vegetation communities, and biomass calculations. To estimate the forest resources that the ancient city of Yaxnohcah had for its development, we used the modern forest as a base to interpret the vegetation change suggested by the archaeobotanical remains. Forest surveys were combined with lidar-based biomass evaluations to achieve a precise estimation of currently available forest resources. A biomass value was obtained for the whole Yaxnohcah extractive zone. Also, a small-scale analysis was done in one settlement complex to estimate the forest's modifications from past activities.

Vazquez Fiorani, Agustina, and Julian Salazar (Instituto de Estudios Históricos-CONICET, Argentina)

[171] *Communities of Potters, Chefs, and Eaters: A Multi-analytical Approach to Technology and Use of Archaeological Ceramics from Northwestern Argentina (ca. 200 BC–AD 900)*

The development of ceramic technology produced substantial transformations in people's foodways and cuisine, expanding the repertoire of existent ingredients, culinary techniques, and storage capacities, among others. Thus, exploring the dimensions of ceramic technology and use among early farming societies holds the heuristic potential to explore social, economic, and cultural attitudes to food. This paper presents a multi-analytical study of ceramic production and consumption among agropastoral groups of northwestern Argentina (200 BC–AD 900) obtained through a suite of elemental, mineralogical, biomolecular, and archaeological techniques. We combine pXRF, optical petrography, GC-MS, and morphological

reconstruction of vessels from three archaeological residential sites (La Ciénega, Santa Cruz, and La Bolsa I [Tucumán province, Argentina]) to elucidate the raw materials used for manufacture, clay recipes, forming and shaping techniques, firing, and the ingredients consumed, ultimately obtaining an integrated picture of the interrelationship between potting, cooking, and eating practices. In doing so, we investigate how ceramic production and consumption were bundled in daily practices that created enduring communities of practice, creating the basis of relationality within newly formed agropastoral communities in the Argentinian Andes.

Vega, Zithlaly

[361] *Understanding a Hohokam Trash Mound Site [AZ U:9:319(ASM)] through Ceramic Production: An Examination of Ceramic Pastes*

This paper will present the ceramic paste analysis of pottery sherds collected during the excavations of AZ U:9:319(ASM) in Mesa, Arizona, over three field seasons. This site, associated with the Mesa Grande platform mound complex, is a Hohokam trash mound site located on an unused plot of land within the boundaries of a modern cemetery. Preliminary analysis of the ceramics found in the trash mound deposits indicates that the site had an occupation that spanned between the Sedentary and early Classic periods. This analysis is a continuation of a multistage process, following multiple field seasons, where the paste and temper of pottery sherds will be compared to standard ceramic ware types previously established for the Lower Salt River Valley. The goals of this analysis are to confirm the preliminary interpretation of when the aforementioned trash mound was formed and the nature of ceramic production and exchange in the Mesa Grande residential community through the analysis of ceramic paste types.

Veile, Amanda [289] see Otárola-Castillo, Erik

Velasco, Matthew [119] see Fuenmayor, Daniela

Velasco, Matthew [184] see Kohut, Lauren

Velasco, Matthew [192] see Langlie, BrieAnna

Velasco, Matthew [182] see Moss, Kelly

Velasco Alban, Janny (Florida Atlantic University), Valentina Martinez (Florida Atlantic University), and Andrés Garzón-Oechle (Scripps Center for Marine Archaeology; University of California, San Diego)

[105] *Manteño, Central Coastal Ecuador, Cloud Forest, Monumental Complexes, Micromorphology, Geoarchaeology*
Manteño society established a complex chiefdom network that dominated the trade and resource exploitation in central coastal Ecuador during the late pre-columbian period (AD 500–1500) in the Post-Quilotoa drought. Their connection along the Pacific shows a trade connection with the northern coast of Peru and southwestern Mexico. Their settlements along the coast are well known for their architecture and ceramics, reflecting their expertise as sailors. However, recent research has given us new ideas about the diversity of ecosystems they inhabit, articulating coastal shores, main basins, and cloud forests. The Rio Blanco Basin in Puerto Lopez, Manabí, has shown a big concentration of monumental settlements that follow an orographic logic along the river streams. This great concentration of structures in the N4C4-044 site showed an archaeological midden in the southern cliff of “Los Cueros” River. This paper presents the preliminary results of the 2024 fieldwork season, where the stratigraphy shows an intense transformation. The product of the site construction configured a cultural landscape where the Manteño society left a great number of cultural remains in the facies. As part of the project, some samples for micromorphological analysis were taken from the midden with the intention of examining the site formation at a microscale.

Velásquez García, Erik [169] see Tiesler, Vera

Veldman, Joseph [67] see Ruiz-Pérez, Javier

Véliz Corado, Fernando (University of Texas, Austin), and Thomas Garrison (University of Texas, Austin)

[100] *Quantifying Defensiveness: Lidar and the Volumetrics of Maya Fortresses*

Volumetrics have long been a part of the spatial analysis of Maya architecture. They have been used as a tool to estimate the effort invested in construction of various human-made features, from pyramids to houses. Volumetric calculations are also employed in the study of material extraction, such as quarrying, and for quantifying resource collection and redirection for features like reservoirs and canals. Through the application of GIS and the acquisition of high-resolution lidar data, scholars have significantly increased the accuracy of volumetric calculations. Here we demonstrate the value of lidar-based volumetrics to quantify the energy and resources involved in constructing defensive fortifications. This study uses La Cuernavilla, Petén, Guatemala, as a case study—an ancient Maya fortress discovered with lidar that presents numerous defensive features of varying types. Using geospatial methods and Python packages like GeoPandas and Matplotlib, we calculated and analyzed the volume of La Cuernavilla's defenses and looked at their spatial distribution to make inferences about ancient Maya military engineering. These methods offer a quantitative foundation for understanding the significance of Maya defensive architecture by providing a concrete example of how volumetrics and geospatial analyses can provide insights into the cost and strategies employed in defending a polity.

Vellanoweth, Rene [65] see Calistri, Hannah

Velsko, Irina [316] see Burge, Keri

Vendome-Gardner, Charlotte

[291] *Beyond the Stereotype: Working to a Landscape-Based Model of Study and Cross-Cultural Exchange, Fluteplayer Rock Art Imagery in Chaco Canyon—Concluding Research Results*

The Fluteplayer is widely recognized within rock art, characterized by a figure holding and/or playing a flute. It has been misinterpreted, appropriated, and widely commodified as the Kachina Kokopelli. As a result of this, Fluteplayer imagery is now entangled with modern, predominantly Western, interpretations of the Kokopelli character, which are subsequently rooted in shamanistic interpretations of fertility. Although this association has been discredited, the ubiquitous interpretation of Fluteplayer imagery as Kokopelli detracts from the true cultural value of individual and unique imagery. This discussion will present concluding PhD research that aims to address this discourse within the study of Fluteplayer imagery using a landscape-based approach to establish a context and wider sociocultural placement of the image within Chacoan society, working toward a model of cross-cultural and respectful sharing of knowledge with Indigenous peoples. Results from this research are already showing diverse and contextual placements for Fluteplayer imagery, alongside the comparative analysis of flute artifacts, illustrating the figures' wider sociocultural placement within Chaco Canyon. The concluding results from this research will move the Fluteplayer beyond its pertained stereotype and offer a wider discussion about the image, alongside supporting the value of rock art and Indigenous knowledge to the wider academic community.

Venter, Marcie (Murray State University)

[344] *Recent Postclassic Research in the Tuxtlas Region of Veracruz*

Long an elusive component of preconquest history in the greater Tuxtlas region, research conducted over the last two decades has enhanced our ability to identify the Postclassic period. Nevertheless, our understanding of variability in the expression of the Postclassic is only beginning to emerge, and with it our understanding of variation in the lived experiences of the inhabitants of different settlements. In this paper we report on recent excavations at the local center of Mazapa and the nearby site of Camino Real 2-Este, both in the municipio of Ángel R. Cabada, Veracruz, and compare their assemblages with one another and the imperial provincial Tuxtlas center of Totógal to shed light on regional variability in the Postclassic period.

Ventresca-Miller, Alicia [288] see Tomazic, Iride

Venunan, Pi [49] see Pryce, Thomas

Verano, John [45] see Sutter, Richard

Verdonkschot, Jadranka (INCIPIT-CSIC)**[168]** *Roudnice: Archaeological Methods and Historical Narratives in the Bohemian Forest (Czech Republic)*

This presentation offers a multitemporal exploration of the layered processes of modernization through a case study in the Bohemian Forest, Czech Republic. The application of archaeological method in a small and detailed case study contributes to the weaving of greater narratives and shows how rural contexts par excellence speak to sociocultural and historical patterns of meaning due to their specific component of human-environment interaction. We will explore the application of archaeological methods such as survey, aerial photography, GIS, and archaeological excavation to an area of persistently contested borders. The little spot in the Bohemian Forest where our story unfolds witnessed the Hussite Wars of the fifteenth century, the Kingdom of Bohemia, Habsburg rule in the sixteenth century, the Thirty Years' War, the Great War of the twentieth century, the Great Depression, World War II and Nazi occupation, the Communist Era just behind the Iron Curtain, the Velvet Revolution, and a contemporary existence in the European Union. Through the examination of material remains—including structures, artifacts, and the traces of state forest and land management practices—we weave a narrative through these large events that can speak to the dynamics of perpetual displacement, depopulation, economic decline, and identity tensions.

Verdugo, Cristina (Astrea Forensics), Lars Fehren-Schmitz (UCSC), and James Brady (California State University, Los Angeles)**[104]** *An Assessment of the Midnight Terror Cave Skeletal Assemblage*

The association of human sacrifice with the subterranean continues to be debated. The connection of sacrifice with ritual sites should hardly be surprising. The continued debate is partially due to the generally poor preservation of skeletal material in the Maya area and the lack of bioarchaeologists working underground. Because of this, many sacrificial discussions rely on documentary or contextual data to the exclusion of biographic or taphonomic evidence. Bioarchaeological discussions have focused on identifying patterns or processes still visible on skeletal material while ignoring archaeological context. More recently, characteristics for distinguishing sacrifice from burial in archaeological contexts have been developed. We review and apply these characteristics, outlined by Vera Tiesler and Carrie A. Berryman, to the Midnight Terror Cave (MTC) skeletal assemblage. The assemblage is composed of over 10,000 skeletal elements. The heavily damaged but surprisingly well-preserved remains and the well-recorded subterranean context present a unique opportunity to employ these characteristics to clarify the nature of the MTC assemblage. We argue that the characteristics clearly demonstrate the practice of human sacrifice at MTC. *****This presentation will include images of human remains.**

Vermillet, Arnault-Quentin [156] see Schwendler, Rebecca

Vernon, Kenneth (Center for Collaborative Synthesis in Archaeology), Brian Coddig, Simon Brewer (University of Utah), and Scott Ortman**[385]** *A Bayesian Neural Network for Indirect Dating*

The two most powerful forces driving long-term development in human societies are climate change and demography, so it should come as no surprise that archaeologists have devoted considerable time and energy to estimating key climate and demographic quantities in the past. To aid in these efforts, specifically demographic reconstruction, this project proposes a new spatiotemporal deep learning (DL) framework for the relative-dating of human settlements. The core of this new framework is a Bayesian Neural Network (BNN) model trained on multisite archaeological tree-ring date and ceramic assemblage data. In this context, a BNN has two important advantages: (1) unlike other DL models, it is less susceptible to overfitting, and (2) unlike other archaeological cross-dating methods, it provides a straightforward measure of uncertainty. We also show how to incorporate a Moran Eigenvector Map into a BNN to account for spatial autocorrelation. Training and testing of a BNN for relative-dating are done using the cyberSW database maintained by Archaeology Southwest, which provides an extremely large ceramic assemblage dataset covering much of the US Southwest. Importantly, the approach should be generalizable to any temporally diagnostic artifact type for which count data exist.

Vernon, Kenneth [126] see McCool, Weston

Vernon, Kenneth [126] see Medina, Ishmael
 Vernon, Kenneth [385] see Ortman, Scott
 Vernon, Kenneth [385] see Peeples, Matt
 Vernon, Kenneth [385] see Stodder, Ann

Vetter, Luisa [374] see Prieto, Gabriel

Vialou, Agueda [165] see Pansani, Thaís

Viana, Sibeli Aparecida, Eric Boeda (Paris Nanterre University), Julio Cezar Rubin de Rubin (PUC Goiás, Brazil), and Marcos Paulo Ramos (PUC-GO / FAPEG)

[165] *Investigations on the Technical Lineages of the Itaparica Technocomplex in Light of Pleistocene Evidence in Central Brazil*

The Central Plateau of Brazil has approximately 100 archaeological sites that date from the late Pleistocene to early Holocene. In this context, the technical conception of unifacial (“lesmas”) is a cultural phenomenon that has intrigued archaeological research for five decades. These tools, characterized by their volumetric structure, indicate significant temporal depth in light of new data related to Pleistocene occupations. We discuss the temporal depth of this technical concept by considering Pleistocene lithic assemblages from the northeast region (Piauí) as a corpus of documentation to shed light on the Itaparica phenomenon observed in the central-west region of Brazil (Goiás). In Piauí, the Itaparica is contemporary with the last technically fully Pleistocene industries. Consequently, was this phenomenon in Piauí an “encounter” with the last Pleistocene occupations? When we consider the Itaparica phenomenon in the state of Goiás, which appears about 12,000 cal BP, we automatically ask about its origins. Is it older and has its roots in the LGM, or is it a later invention? Whatever the answer, this phenomenon absolutely must be taken into account when thinking about the Pleistocene. Are we talking about an enduring Pleistocene industry or a contemporary technical breakthrough?

Vicencio, A. Gabriel (Boston University), and Aurelio López Corral (INAH-Tlaxcala)

[236] *Evaluating the Potential Role of Itinerant Artisans in Obsidian Distribution in Prehispanic Puebla-Tlaxcala*

This study uses data from multiple excavation projects to examine the procurement and production strategies of obsidian artifacts in Mexico’s Puebla-Tlaxcala Valley, focusing on the socioeconomic dynamics between different groups from the Middle Formative (900–500 BC) to the Late Postclassic (AD 1250–1519) periods. Geochemical and spatial analyses reveal that the obsidian previously attributed to the El Paredón source predominantly originates from the Tres Cabezas subsource. The analysis of obsidian artifacts from nine sites revealed that local production processes began from intermediate stages, with polyhedral cores being reduced to produce prismatic blades for local consumption. Technological evidence suggests that procurement strategies evolved from independent methods to more complex cooperative systems involving itinerant artisans and merchants who maintained a consistent supply network to the region. The study highlights the crucial role of sociocultural relations and trade dynamics in the distribution of obsidian. The continuity and adaptability of these systems ensured the steady supply of obsidian artifacts, revealing the intricate political and economic landscape of the Puebla-Tlaxcala Valley over millennia.

Vidal-Elgueta, Alejandra (Pontificia Universidad Católica)

[394] *Archaeology of New Plants and Flavors in Post-Inca Andean Cultures: An Archaeobotanical Introduction to the Colonial Indigenous World from Tarapacá*

The archaeobotanical studies in Tarapacá, Northern Chile, have mainly focused on prehispanic plants like maize, potatoes, and quinoa. Hence, the study of plants introduced during the post-Inca period (from the sixteenth century onward) has been limited. These new plants, brought from Europe and the Americas, have undergone little analysis regarding their productive, culinary, medicinal, and ritual uses. The aim is to archaeologically assess how these colonial and historical plants (up to around 1820–1830) influenced the practices of historical communities in Tarapacá and to understand how the Spanish invasion and colonialism transformed the environment and local economies before industrial modernization. We present the results from the Vigueras Street and Segundo de Línea archaeological sites located in San Lorenzo de Tarapacá. The

plant remains reveal post-hispanic species (*Prunus* sp., *Olea europaea*, *Juglans regia*, and exotic woods) alongside typically Andean species (*Zea mays*, *Gossypium* sp., *Neltuma* spp., Cucurbitaceae), and plants introduced from other parts of the Americas (*Jubaea chilensis*). The discussion focuses on how the introduction of new plants contributed to the formation of new cultural and natural collectives, as well as to the creation of innovative networks in the context of the emerging colonial world.

Vidal Guzmán, Cuauhtémoc (George Washington University), and Jeffrey Blomster (George Washington University)

[347] *From Late Formative to Classic at Etlatongo in the Ñuu Savi Region: Changes and Continuities*

We explore the continuities and changes between Late Formative and Classic period Etlatongo, especially in terms of settlement patterns and ceramic traditions. Present models suggest that most of the Late/Terminal Formative political centers in the Mixteca Alta imploded within a few hundred years of their formation, and some areas, such as the Teposcolula Valley and the western arm of the Nochixtlán Valley, were depopulated. In contrast, excavations at Etlatongo demonstrate greater continuity, indicating that the community not only grew in size but also continued to use ritually charged spaces well into the Classic period. The Etlatongo data afford a substantial overview of Las Flores phase (Classic period) pottery, and ceramic analysis of securely dated public and domestic contexts provides a more nuanced view of change over time, as different components within ceramic traditions changed at different rates. Here, we briefly compare the data from Etlatongo to the available information from other sites to argue that Etlatongo provides an ideal case to evaluate assumed hypotheses and ideas about the social transformations that took place during the Late/Terminal Formative to Classic transition in the Oaxaca region.

Vidal Montero, Estefanía [45] see Ballester, Benjamin

Vielhauer, Alaina (Lane) [274] see Civitello, Jamie

Vielle Calzada, Jean-Philippe [48] see Trejo Ordoz, Alondra

Vieri, Jasmine [374] see Benzonelli, Agnese

Vieri, Jasmine [49] see Martín-Torres, Marcos

Vilches, Flora [331] see Cartajena, Isabel

Villa, Valentina (CNRS), Aurélien Christol (Université Jean Moulin Lyon), Belkys Gutiérrez (BGL Arqueología), Segundo Vásquez (Universidad Nacional de Trujillo), and Nicolas Goepfert (CNRS)

[273] *Recent Holocene Climatic and Environmental Variability and Its Impact on Prehispanic Populations in the Sechura Desert*

The Sechura Desert is currently characterized by a hyperarid climate and regularly affected by extreme rainfall events linked to ENSO. During the most intense events, the desert is covered with denser vegetation and is occupied by temporary lakes. The current hydroclimatic variability raises the question of its impact on the coastal environment and the human groups that inhabited it in prehispanic times. Despite the current scarcity of human occupation, numerous archaeological sites indicate a virtually continuous human presence since at least 7,000 years. The objective of our research is to examine how local populations adapted to short- and long-term fluctuations in coastal environments, focusing on the influence of regional and macroregional geomorphological, hydro-oceanographic, and climatic factors. In order to reconstruct the past socioenvironmental dynamics, our approach cross-references information from archaeological excavations (intra-site) and from morpho-sedimentary archives (off-site). The results reveal that coastal environments were significantly different from their contemporary counterparts, featuring lagoons formed as a result of the geomorphological context and more humid average climatic conditions. Human responses to these changes varied over time and space. Both long-term and short-term occupations are observed over the past two millennia, reflecting the adaptability of human populations to climatic and environmental shifts.

Villacorta Oviedo, Yanet (Dirección Desconcentrada de Cultura, Cuzco)**[386]** *Aportes del estilo cerámico de Matagua-Wanakauri: Una lectura de la cerámica del origen de los incas*

Las sociedades anteriores a los incas tuvieron conocimiento en la producción cerámica, cada cual con un estilo particular, siendo el caso del estilo cerámico de Matagua. Arqueológicamente se tiene la presencia de los estilos Killke, Lucre, Colcha. Los rasgos de diseño y morfología son similares y varían en algunos detalles como la característica de la pasta o algunos iconos que se dan con mayor frecuencia en ceramios de uno u otro sitio. Por lo tanto, pensamos que las particularidades en la cerámica del Intermedio Tardío, solo se daban dependiendo del lugar donde se producía la cerámica. El análisis del material nos define que se trata de un único estilo de cerámica, con variantes en su diseño y obviamente en los materiales de preparación, pues este varía según el lugar de extracción de los materiales como la materia prima usada. Se ha identificado nuevas formas; en detalles de iconografía que aparecen en el estilo Killke, Lucre y Colcha. El avance tecnológico que dominaron los estilos de esta época, es consecuencia de la herencia cultural de asentamientos tempranos y que los asentamientos tardíos como la inca, adquirieron toda esta herencia para su desarrollo.

Villagran, Ximena (Universidade de São Paulo, Museu de Arqueologia e Etnologia)**[281]** *Assessing the Intensity of Coastal Resource Use by Micromorphological Analyses*

Micromorphology has become a vital part of the tool kit for site formation process analyses in any archaeological context. The technique has been little applied in coastal settings, with most of the work focusing on shell-matrix sites in a few coastal areas of the world. In such anthropogenic deposits, micromorphology is essential to obtain high-resolution information on natural and anthropogenic sedimentation, and the pre-depositional history of sedimentary components. Through micromorphology, it is possible to identify activity areas within shell-matrix sites, abandonment episodes, trampling, platform building, dumping, and variations in coastal resource use. Geoarchaeological research in shell-matrix sites showed that shell mounds and shell middens can be used as environmental proxies since humans typically forage invertebrate fauna from the surroundings and carry it to the sites, together with natural sediments and aquatic microorganisms (e.g., algae, foraminifera). In this presentation, examples of micromorphological studies in coastal sites will be presented, focusing on the role of micromorphological analyses in assessing the intensity of coastal resource use, with particular emphasis on the formation of shell middens as evidence of coastal adaptations versus the episodic consumption of intertidal resources.

Villagran, Ximena [281] see Cleghorn, Naomi

Villagran, Ximena [53] see Fariña, Richard

Villalba, Fabián**[105]** *Sociedades preincaicas tardías a un lado y otro de la cordillera del Cóndor*

El período tardío del suroeste ecuatoriano, enmarcado a un lado y otro de la cordillera del Cóndor (cuencas del Zamora y Altos del Chinchipe) no ha estado claramente establecido, sin embargo, los últimos estudios permiten ir tejiendo la historia preincaica. Se ha venido conociendo al período tardío como la Tradición u Horizonte Corrugado, debido la presencia de esta técnica alfarera, que al final, aparece en varios países de la alta Amazonía. Aquel período, se lo viene asociando con los Bracamoros y Yahuarzongos (sociedad histórica del grupo lingüístico Shuar Shicham, al que también pertenecen los Shuar, Achuar, Aguajum y Huampis, asentados actualmente, en la frontera sureste con Perú). En el valle del Quimi, cuenca media del Zamora, registramos a la sociedad El Quimi, con una economía básica de caza, recolección y horticultura, propias de la Alta Amazonía, que surge hacia los 400 años dC y permanecen hasta los 1.700 dC, con una cultura material distinta a los Shuar Chicham. Este registro y otros más, nos permite entender, entre otros, que los Yahuarzongos y Bracamoros no son tan antiguos como se mencionan, sino que más bien, habrían incursionado desde el norte peruano hacia estas dos cuencas, aproximadamente hacia el siglo XV.

Villalpando, Elisa (INAH, Mexico)**[342]** *Randy and the Archaeology of Northwest Mexico*

From a first academic meeting in the late 1970s in the Chiricahua Mountains and the 18th Brumaire to this day, in this well-deserved recognition, Randall McGuire, “el Randy” to the Mexican norteños, has had a

profound impact not only on me but on the archaeology of Northwest Mexico. He has shared with colleagues and students successful techniques and methodologies applied in the archaeological contexts of the American Southwest to Marxist theory and a deep knowledge of *Arqueología Social Latinoamericana*, seasoned with gossip, jokes, visits to sites, and some occasional parties with two or three agave spirits. He has not only been a teacher but also an apprentice of the twists and turns of a nationalist and bureaucratic archaeology such as Mexico's, and he has done so with deep respect, marking a different way of facing similar problems from different backgrounds. My contribution will try to summarize more than 30 years of joint work in Sonora.

Villanueva, Juan Pablo [282] see Sakai, Masato

Villanueva Hidalgo, Juan Pablo (Universidad Nacional Mayor de San Marcos), Yuji Seki (National Museum of Ethnology), and Daniel Morales Chocano (Universidad Nacional Mayor de San Marcos)

[282] *La Tumba del Sacerdote de los Sellos en La Capilla, complejo arqueológico Pacopampa, al inicio del primer milenio a.n.e*

La Capilla es un edificio construido a 0.5 km al oeste de Pacopampa, el cual presenta una temprana ocupación correspondiente a la Fase Pandanche (Formativo Temprano) asociada a la Tumba del Sacerdote de los Pututus. Posteriormente, en la Fase Pacopampa I (Formativo Medio), se ha realizado una importante remodelación arquitectónica asociada previamente a la deposición de dos contextos funerarios adyacentes a la antigua tumba así como la construcción de una baja plataforma sobre ella. De estos contextos, destaca la de un individuo adulto que fue depositado boca abajo, extendido con las piernas semiflexionadas y cruzadas, en la base de un amplio hoyo circular cavado dentro de un extenso foso producto probablemente de la búsqueda de la tumba anterior. La fosa fue cubierta por una serie de capas de tierra y ceniza conteniendo vasijas fragmentadas, huesos de venado y piedras medianas; en la parte media y superior se hallaron 3 sellos de cerámica que le dan el nombre de "La Tumba del Sacerdote de los Sellos" cuyo patrón funerario atípico y la presencia de bienes exóticos, como cinabrio, podría correlacionarse con el importante rol de liderazgo que desempeño este individuo en su sociedad. *****Esta presentación incluirá imágenes de restos humanos.**

Villanueva Hidalgo, Juan Pablo [282] see Seki, Yuji

Villanueva Hidalgo, Juan Pablo [282] see Uzawa, Kazuhiro

Villaquiran Mejia, Allisong Michelle [180] see Santillán, América

Villar Quintana, Anthony (UNMSM)

[172] *Del túnel de Pantaja a un centro ceremonial milenario: La resignificación de Shoymal (Amazonas-Perú) a través de su emplazamiento*

Los lugares comunican mensajes que pueden interpretarse de diversas maneras según el momento y el ocupante. En este contexto, analizamos Shoymal, un sitio arqueológico en la cuenca media del río Utcubamba (Amazonas-Perú). Su arquitectura, de sillares tallados con representaciones en alto relieve, estuvo en uso aproximadamente desde el final del tercer milenio hasta el segundo milenio aC. Nuestro trabajo busca ilustrar cómo se construye el significado a partir de la percepción de diferentes agentes relacionados al sitio. Las sociedades actuales alrededor de Shoymal han desarrollado una interpretación iconográfica y arquitectónica basada en excavaciones no sistemáticas realizadas hace más de 50 años, e integran así al sitio en una leyenda asociada a un personaje colonial hispano relevante para la identidad amazonense. Por nuestra parte, como arqueólogos, al intentar reconstruir las concepciones del pasado también desarrollamos un proceso de construcción del significado durante nuestro emplazamiento en el sitio (dentro y fuera del campo). Es así que, a partir del análisis arquitectónico e iconográfico de Shoymal en asociación con otros materiales arqueológicos y fuentes etnográficas amazónica-andinas presentamos una propuesta del significado que este lugar tuvo cuando funcionó como un centro ceremonial, vinculado principalmente a un espacio generador y regenerador de vida. *****Esta presentación incluirá imágenes de restos humanos.**

Villarmarzo, Eugenia [185] see Blasco, Jimena

Villasenor Iribe, Eunice

[323] *The Best Defense Is a Good Terrace Defense: Comparing Terraced Hilltop Sites in Northern and Central Mexico*

Terraced landscapes are the remains of landscape management decision-making that was shaped by the constant changes in social, economic, and ecological conditions of the surrounding regions. Within Mexico, terracing has been used extensively both spatially and temporally. Utilizing terracing, many groups were able to expand settlement and land use into less arable areas like hilltops. The limited accessibility of many hilltops made them attractive settlement options during periods of increased regional violence and political instability. By terracing these hilltops, groups were able to create agriculturally productive areas that could also serve as defensive structures that limited movement up the hill. This study investigates the utilization of terraced landscapes in northwestern and central Mexico by comparing the spatial layout of several hilltops sites that span the prehispanic period. By mapping the terrace systems of these sites, measuring environmental characteristics of the hillsides, and conducting a least-cost paths analysis, it was possible to determine what likely functions these terrace systems served. The addition of survey and excavation data from these sites was also incorporated to provide more specific data for the use of specific areas on the hillsides.

Villasenor Iribe, Eunice [89] see Blumenfeld, Dean

Villeneuve, Suzanne (University of Toronto)

[206] *Raging Radiocarbon Issues at Keatley Creek*

Keatley Creek is one of the largest pithouse village sites in western North America. For nearly four decades, it has featured in debates about the origins of complexity and inequality on the Plateau and among complex hunter-gatherers, in debates on prehistoric rituals, and in debates about methodologies and dating. Critical in all these issues is the establishment of a sound radiocarbon chronology for developments. There have been three dating programs at Keatley Creek since research began in 1986. In an attempt to reconcile conflicting claims about the dating of the site, starting in 2010, I undertook a major excavation and dating program, including a Bayesian chronological modeling, of the four largest pithouses at the site (some attaining 20 m diameters). The results indicate a consistent and surprisingly short duration for the formation of the substantial rim middens associated with the large houses. However, it is also clear that other significant occupations at the site occurred well before these major developments. The implications of the new stratigraphic and chronological models and other detailed analyses for the various human-environmental and sociopolitical issues at the site are still being evaluated.

Vinci, Giacomo (University of Padua)

[107] *Exploring Late Holocene Landscape Changes in the Coastal Plain of the Northern Adriatic (NE Italy)*

Long before the development of Venice in the Middle Ages, late prehistoric communities had already established complex settlement patterns along the lagoon and transitional environments of the northern Adriatic coast (NE Italy). The prolonged and intensive occupation of these areas resulted in intricate landscape palimpsests that can be investigated and disentangled. Indeed, although many sites were submerged due to sea-level rise, twentieth-century reclamation efforts over approximately 400 km² of lagoons have caused several sites to reemerge. As a result, archaeological traces in this area remain largely visible at surface or accessible at shallow depths. This study presents a multiproxy and multiscale analysis that combines remote sensing (notably lidar), geoarchaeological corings, palynological analyses, and GIS spatial analyses. These methodologies have been employed to assess the human impact over the past 7,000 years, enabling a comparison of landscape and environmental changes with shifts in settlement patterns. Building on fresh data from the Grado-Marano lagoon, I will zoom out to explore main landscape changes that occurred in the area from later prehistory to modern times. Two major cycles of deforestation and agricultural intensification are identified during the Bronze Age and Roman periods, both of which correspond to the emergence of widespread settlement systems.

Vint, James (Desert Archaeology Inc.)**[98]** *The Early Agricultural Period in the Northern Tonto Basin, Arizona*

The Early Agricultural period was revived as part of Late Archaic culture-historical systematics during the late 1980s and early 1990s. Work by Bruce Huckell at Milagro, Barb Roth at Cortaro Fan, Paul and Suzy Fish at Tumamoc Hill, and CRM projects in the Tucson Basin fueled this conceptual revision, along with long-term projects at La Playa and Cerro Juanaqueña in northern Mexico. Less intensively investigated areas, overlooked because of industry-created “single region biases,” include the Cienega Creek, San Pedro, and Gila Valleys east of Tucson, and the Tonto Basin and Mogollon Rim to the north. One of the obscure regional sites is the Boatyard Site, located in the northern Tonto Basin in central Arizona. It was excavated by Bruce Huckell in 1994 as part of the Tonto Creek Archaeological Project, about the time he proposed reviving the EAP as the final portion of the Archaic sequence. The site has three temporal components: a colonial period Hohokam farmstead, a Late Cienega phase farmstead, and a Middle Archaic campsite. This report gives a look at the EAP in the Tonto Basin from the view of the Boatyard Site, a 225 km / 140 mile walk north of Tucson, 30 years after excavation.

Vivero Miranda, Jose (University of Oklahoma)**[190]** *Between Mesoamerica and the US Southwest: Social Dynamics in the Guasave Region*

The Guasave region in Northwest Mexico embodies a contested zone between Mesoamerica and the US Southwest. By AD 1100, the presence of the Aztatlán tradition—interpreted as the expansion of Mesoamerica into the NW, undeniably marks a period of social transformation and a dynamic phase of pan-regional reorganization. Models explaining the Aztatlán tradition in Guasave offer divergent interpretations: Guasave as a shatter zone of Mesoamerica, others as part of a US Southwest politico-economic system, and still others see it as a locally driven development with minimal external involvement. While models have revolved around pan-regional interaction dynamics and delineation of cultural areas, there has been only a nascent interest in the local scale to evaluate the transformations of the Huatabampo culture. Based on new spatial data, this poster presents the results of pilot sourcing and provenance analyses on Huatabampo plainwares and Aztatlán polychromes from the Lower Guasave River. These analyses offer insights into the reasons behind the Aztatlán tradition’s presence in Northern Sinaloa and its broader pan-regional implications. This study fills a critical gap in regional literature, providing a nuanced understanding of the social organization of the Huatabampo culture and the influence of the Aztatlán tradition on the local cultural system.

Vivian, Brian [364] see Johannesson, Erik

Viviano, Carlos [46] see Kanazaki, Yuko

Vo, Thuy [61] see Iannone, Gyles

Vo, Thuy [61] see Menkina, Ekaterina

Vogt, Cassie (South Dakota State Historical Society Archaeological Research Center), Matthew Busch (South Dakota State Historical Society Archaeological Research Center), Joe Jones, and Fidel Martinez-Greer (South Dakota State Historical Society Archaeological Research Center)**[125]** *Archival Research Results to Relocate Sitting Bull’s Campsites at Fort Randall, Dakota Territory, September 1881 to April 1883*

From September 1881 to April 1883, Sitting Bull (Tatanka Iyotake) and approximately 160 followers were imprisoned at Fort Randall, Dakota Territory, following Sitting Bull’s highly publicized defeat of Lt. General Custer at the Battle of Greasy Grass (Little Bighorn) in 1876, their defiant sojourn in Canada, and the group’s surrender to the US government. Sitting Bull and his band were allowed to establish their own camp outside the fort on the adjacent plains and wooded bottoms of the Missouri River. These historic camp locations are now within federally owned land in Gregory County, South Dakota. In 2022, the United States Army Corps of Engineers (USACE), Omaha District, contracted the South Dakota State Historical Society’s Archaeological Research Center (ARC) to identify the high-probability locations of these encampment areas

near historic Fort Randall. This poster illustrates the results of that research through the utilization of historic photos, previous archaeological investigations, lidar imagery, and archival research. The two probable locations of Sitting Bull's historic prisoner-of-war camps are discussed as well as the potential material culture associated with those locations.

Voltaire, Mikael, Christina Halperin (Université de Montréal), and Laurianne Gauthier

[64] *Halls of Power: A 3D Reconstruction and Spatial Analysis of a Possible Maya Council House*

Open halls were part of the political theater of Maya political landscapes in the Classic and Postclassic periods. These centrally located buildings were often built on top of long raised limestone platforms and were thought to have been used as council houses or as gathering or ritual places for the elites or leaders. But how transparent were these political meetings and practices conducted in these large buildings and what are the implications of such visible accessibility of political organization at this time? This poster presents the results of a digital 3D model created from topographic data of a recently excavated Terminal Classic open hall at the Maya site of Ucanal, Petén, Guatemala. Created in Sketchup and analyzed in GIS and other spatial analysis software, the 3D architectural model provides a more phenomenological understanding of the relation between those meeting or gathering inside the public structure and between these individuals and "bystanders" who may have been standing in the public plaza below. These relationships are also examined through view shed analyses, which explore the inter-visibility of participants. These spatial analyses provide a deeper understanding of the visibility afforded by Maya public architecture and by extension, the political practices.

Vories, Elena (Indiana University of Pennsylvania)

[123] *A Study of Mississippian Shell Site Occupation: Analyzing Subsurface Anomalies Detected through Ground-Penetrating Radar and Their Chronological Associations at Green's Shell Enclosure in Hilton Head, South Carolina*

The archaeological study of coastal shell sites in the southeastern United States offers critical insights into the subsistence strategies, cultural practices, and architectural innovations of Indigenous communities before European contact. Among these sites is Green's Shell Enclosure, located on Hilton Head Island, South Carolina, a Mississippian shell structure whose origins, functionality, and temporal relationships are yet to be fully understood. This research investigates the nature and chronology of subsurface anomalies recently identified within the interior of the enclosure through a ground-penetrating radar (GPR) survey at Green's Shell Enclosure in 2024. The project addresses key questions regarding the contemporaneity of these anomalies with the exterior shell midden, the potential evidence of additional site occupation within the enclosure, and the broader relationship of this site to coastal Mississippian shell site traditions. By incorporating excavation, comparative analysis, and engagement with Indigenous descendant communities, this research aims to deepen our understanding of Green's Shell Enclosure and its significance within the coastal Mississippian cultural landscape. The findings will contribute to the ongoing discourse on shell ring functionality, temporal occupation, and the complex social and environmental dynamics of early Indigenous societies in the southeastern coastal region.

Voyles, Kyle [381] see Ratcliffe, Jessica

Vranich, Alexei, and Brandon Clifford (MIT)

[354] *Megalithic Construction: The Case of the Inka*

The monumental walls of Sacsayhuaman, an Inca ceremonial complex in Cusco, Peru, represent one of the most enigmatic examples of megalithic architecture. Despite their iconic status, the construction methods, technologies, and materials used to create these colossal stone structures remain subjects of ongoing debate. This paper combines archaeological evidence with experimental archaeology to explore the process of building Sacsayhuaman. The unfinished portions of the walls offer a rare glimpse into the techniques and stages of Inca stonework, from quarrying and transport to final assembly. By integrating insights from the broader literature on megalithic construction worldwide, this study not only sheds light on the specific practices employed at Sacsayhuaman but also contributes to a deeper understanding of precolumbian engineering. The findings have broader implications for our knowledge of Inca civilization and its architectural legacy, challenging existing theories and offering new perspectives on the technological capabilities of ancient societies. This research underscores the value of experimental archaeology in reconstructing lost

technologies and offers a model for investigating other megalithic sites around the world. *****This presentation will include images of human remains.**

Vranich, Alexei [182] see Klaput, Jan

Vrydaghs, Luc (Vrije Universiteit Brussel)

[235] *Detecting the Use of Fuel with Autofluorescent Phytoliths*

Phytoliths are often found in archaeological contexts associated with cooking and burning, and where plant material has been used as fuel. Different methods have been applied to identify whether phytoliths have been fired and/or heated: morphological alterations, changes in color and opacity, refractive index, and Raman spectroscopy. None provide satisfactory results for sufficient discrimination between burned and unburned phytoliths. We surveyed phytoliths from various archaeological contexts (unheated and heated), chronological periods (prehistoric up to the classical period), and geographical settings (temperate, subtropical and tropical). Our observations from archaeological material suggest that phytoliths become autofluorescent in heated contexts. Significantly, phytoliths that were not heated show no autofluorescence. Subsequent work attempted to explore the conditions under which autofluorescence occurs in the inflorescence bracts of oats (*Avena sativa* L.) when they are heated. Three factors were investigated: temperature, time, and the presence or absence of oxygen. Phytoliths fluoresced after 30 minutes, at temperatures as low as 200°C, and oxygen was not required for autofluorescence. This signal may then become an important proxy complementing the previously developed techniques. As such, integration of various proxies can provide a systematic and straightforward method to track evidence of fire and heating of phytoliths within archaeological contexts.

Vuille, Mathias (University at Albany SUNY), and Zhiqiang Lyu (University at Albany SUNY)

[387] *Changing Mid-Holocene Environmental Conditions in Belize: A Role for Saharan Dust?*

Several studies have highlighted the role of the Holocene “Green Sahara” in affecting environmental conditions across the tropics. Expansive Saharan vegetation altered albedo and evapotranspiration and changed atmospheric circulation, impacting climate over remote regions. For example, mid-Holocene precipitation changes in eastern South America have been linked to the “Green Sahara.” Sahara vegetation during this period also reduced dust emissions, which are known to play a pivotal role in many environmental processes. Dust carries micronutrients, helps fertilize soils, and boosts primary productivity, as evidenced over the Amazon rainforest. During the “Green Sahara” period, vegetation minimized dust emissions, but the effects of the demise of the “Green Sahara” on dust deposition over Mesoamerica have remained unexplored. Here we analyze climate model experiments run under mid-Holocene boundary conditions with and without including “Green Sahara” vegetation, thus preventing or enabling dust emissions, respectively. While changing the vegetation cover does not affect rainfall over Belize during the mid-Holocene, experiments run with dust tracers in the HadGEM2-ES model show that the dust flux over Belize is enhanced if the vegetation over the Sahara is removed, suggesting that the end of the “Green Sahara” might have caused a significant increase in dust and nutrient deposition in Belize.

Wagener, Cassandra (University at Buffalo)

[223] *Nondestructive Analyses of Museum Collections: A pXRF Analysis of Obsidian from Teotihuacan*

Obsidian was an essential resource in prehispanic Mesoamerica, with a significant industry fostered in the Valley of Mexico. The importance of obsidian in Teotihuacan is evident through the presence of numerous workshops, deposits, and varying degrees of craft specialization. This research investigates the tool types as well as the sources and movement of obsidian artifacts obtained during René Millon’s 1959 excavations of Teotihuacan. By studying the tool types and raw material sources of obsidian from both residential and public spaces, we gain valuable insights into economic and political dynamics at both local and regional levels. The distribution of different tool types and production debris allow for the identification of areas of production, use, and discard. This project also utilizes pXRF techniques to analyze the chemical compositions of these obsidian artifacts and assess the relationship between Teotihuacan and local obsidian sources in central Mexico. Together, tool identification and sourcing allow us to collect new information on a legacy collection.

Wagner, Mark [216] see Ramey, Rebecca

Wai, Christopher (University of Toronto), and Stefanie Wai (University of Toronto)

[225] *Balancing Narratives of Reality and Fantasy in Archaeology in Video and Board Game Writing and Design: Indiana Jones and the Great Circle, Lost Ruins of Arnak, and Thebes as Case Studies*

There is a public fascination with the roleplay of an archaeologist. Just as fantasy games feature hyperfictionalized medieval warriors or detectives and superheroes in fiction are vigilantes, so too is there an idea of a hyperfictional archaeologist without its mundanities. While archaeologists have critiqued the problematic nature of archaeology in popular media, it should be acknowledged that audiences can separate reality and fantasy but may choose the escapism of antiheroes. Should we support and encourage games that re-create the past, replicate archaeological research, and balance the public demand for more fantastical games or that feature Indigenous protagonists guiding the narrative? *Indiana Jones and the Great Circle* is the latest and perhaps the most intensive archaeological video game, presenting a valuable case study on how archaeological narratives have evolved with the public perception of archaeology. While many games present the narrative of shooting or fighting as the mechanic to move narratives forward, the *Great Circle* presents first-person puzzles using journal-based hints and real-life sites. Board games such as *Lost Ruins of Arnak* and *Thebes* also present alternatives where fieldwork planning become resource management games. While there are legitimate concerns, there is a reflexive dialectic in balancing representation with consumer demand.

Wai, Christopher [327] see Wai, Stefanie

Wai, Stefanie (University of Toronto), Christopher Wai (University of Toronto), and Patricia Aparicio (University of Toronto)

[327] *Surveying the Looted City of Pacatnamu: Ethics, Experiments, and Strategies*

Past and present-day interactions with archaeological sites raise many concerns over the disturbance and destruction of cultural heritage from urban and agricultural development, tourism, and looting. These spaces, while destroyed, are often frequented by various communities, and tell us about the diverse range of attitudes toward these monuments. Furthermore, archaeologists seeking pristine contexts often underestimate the possibility to reconstruct damaged contexts using existing technologies. In this paper, we review methodological challenges posed from conducting research on archaeological sites that continue to experience looting. We draw from our recent surveys at Pacatnamu, a major Middle Horizon and Late Intermediate period (~600–1470 CE) city and a hypothesized center of the Lambayeque Sur polity. It also provides an ideal case study as it is one of the most heavily looted sites on the north coast of Peru. We examine potential mitigation strategies for remote and difficult to monitor archaeological zones that also continue to serve as important places for local communities. We argue that more attention should be paid to disturbed contexts to prevent the further loss of critical heritage.

Wai, Stefanie [225] see Wai, Christopher

Waite, Kyra [123] see Ernenwein, Eileen

Wake, Thomas (UCLA-CIOA Zooarchaeology Lab)

[235] *Assessing Dietary Strategies in Neotropical Shell Middens: Further Evidence of the Utility of Column Samples in Zooarchaeological Investigations*

Ongoing analysis of rich and diverse samples of vertebrate bone from Sitio Drago (SD), Bocas del Toro, Panama illustrates the importance of fine-grained sampling in understanding past subsistence strategies at the site. The analysis of charred macro- and micro-plant remains recovered from 30 × 30 × 10 cm column samples provide crucial information concerning the presence of both domestic and wild species in the diet at SD. These same contexts provided important data concerning the presence and use of small vertebrates at SD. Field recovery methods at SD included the use of 3 mm mesh wet screens and the retention of all screen residues for subsequent sorting into respective artifact and ecofact classes. As noted in previous publications and presentations few small fish remains and species were represented in identified samples. Sorting the heavy fractions of the column samples resulted in the recovery of small vertebrate remains in relatively large

numbers and clarifies the dietary role of small fish such as anchovies and sardines at SD.

Walden, John [109] see Awe, Jaime

Walden, John [320] see Corey, Kasey

Walden, John [325] see Meyer, Brett

Walden, John [89] see Sprock, Cody

Wales, Nathan [288] see Rabinow, Sophie

Walker, Debra [109] see Reese-Taylor, Kathryn

Walker, John (University of Central Florida)

[46] *Joan Wells Lathrap in the Archaeology of the Amazon*

Joan Wells Lathrap (1931–2023) was a social worker, community organizer, and activist in Champaign-Urbana, Illinois. In 1958 she married Donald Lathrap, and in 1961, their daughter Bonita Elena (or Bonnie) was born. Joan Wells was a significant part of Donald Lathrap's professional and personal life. Although Bonnie's death in 1971 in many ways ended the marriage, an understanding of Joan's career both in anthropology and public health is relevant on its own merits, and in relation to Donald Lathrap's archaeology of Peru and the Amazon. Based on in-person conversations from 2021 to 2023, this paper suggests that Joan and Don's work, both in Peru and in Illinois, was entangled in ways that reflect the importance of their relationship and the context of academic archaeology in the United States in the late twentieth century.

Walker, Mikaila (Aditu Arkeologia), Emma Bonthorne (Aditu Arkeologia), and Francisco Valle (Aditu Arkeologia)

[294] *From Mountain High to Valley Low: A Comparative Study of Two Medieval Funerary Sites in Northwest Navarre*

Excavations conducted by Aditu Arkeologia at the sites of San Miguel de Excelsis and Santa Maria de Zamartze revealed more than 180 inhumated human skeletal remains dating from the eleventh to fifteenth century CE. These sites, located within the municipality of Uharte-Arakil (Navarre, Spain), provide a unique opportunity for an inter-site comparison of two contemporaneous skeletal assemblages in close proximity to one another. Few comparative studies of medieval Basque cemetery sites have been undertaken, limiting our understanding of the health and social status, and thus the lived experience, of past Basque communities. This presentation will consider the osteological data and burial archaeology (burial type, location, position of the remains, etc.) of the remains recovered from both San Miguel and Zamartze, reporting on results obtained during fieldwork and post-excavation analyses by Aditu Arkeologia. A particular focus will be given to discussing and comparing the demographic and paleopathological profiles of the remains against the burial archaeology to infer the health and social status of both populations, identifying any correlations or differences between the two assemblages. In doing so, the lived experience of these individuals will be interpreted and contextualized within the broader cultural landscape of the medieval Basque Country and Europe. ***This presentation will include images of human remains.

Walker, Robert [114] see Paige, Jonathan

Walker, Samantha (University of British Columbia)

[240] *Modeling Postglacial Coastline Transformations during the Tuniit (Paleo-Inuit) Period in Amittuq, Nunavut (5000–500 BP)*

Paleotopographic modeling is a powerful tool for assessing the shifting accessibility and connectivity of coastal arctic sites, as well as changes in nearshore marine habitats that were vital components of local subsistence economies. This paper introduces a method for visualizing coastal transformations at localized scales using predictive isostatic adjustment models. The models cover 500-year intervals ranging from 5000 to 500 BP and were produced by integrating drone-acquired elevation data, altimeter readings calibrated to local high-tide kelp lines, and updated relative sea-level (RSL) curves in a GIS environment. The utility of the models for contextualizing local diversity in Tuniit (Paleo-Inuit) organizational structures is discussed. The models also

identify locations of initial marine emergence, offering future survey targets for the region's earliest occupations.

Walker, William (New Mexico State University), Myles Miller, and Judy Berryman (New Mexico State University)

[380] *Pueblo Closure: Migration and Exchange in an Animate World*

Closure ceremonies and other rites of passage rituals mark the lives of buildings and can track the movements of peoples. In the Puebloan Southwest these are common components of the archaeological record whose rich information remains relatively untapped. In this paper, we compare closure practices across Jornada Mogollon pueblos during the El Paso phase. We emphasize case studies in the San Andres Mountains, Sacramento Mountains, and El Paso region. We see in these data and across the larger Jornada Culture Area at two ritual traditions, one in the north another in the south and a third possibly reflecting a mix of the two. These share similarities such as burning and burial of the pueblos, but they differ the selection of artifacts emplaced on floors and in fill as the techniques of their depositions. We explore traces of social organization, exchange, and migration in these variable formation processes

Wall, Harper (Vancouver Island University), and Marie Hopwood (Vancouver Island University)

[234] *The Butter in the Bogs: Experimental Archeological Research into the Context of Bog Butter*

Bog butter is an intentionally submerged artifact found in sphagnum peat bogs. Due to the acidic and anaerobic nature of peat environments, the bog butter containers and their contents have been uniquely preserved. The butter has been deposited in bogs dating from the early bronze age to the early modern period in modern-day Ireland and Scotland. Although a staggering number of bog butter samples have been discovered, the purpose of this practice, attributed to Gaelic and Celtic culture groups, has yet to be illuminated. Contextualizing the deposition of butter will expand our understanding of the ancient Gaelic and Celtic relationship to landscape, dairying, and food production. Experimental archaeological research completed during the past two years involving the creation of a peat bog and ancient butter recipes has provided insights into the culinary culture and deposition practices in northwestern Europe. Ancient recipes and processes were closely mimicked, and preliminary experimentation has led to a greater understanding of Gaelic and Celtic culture groups. The purpose behind the intentional submersion of bog butter could not only lead to contextualizing ancient cultural foodways but also the relationship between bog environments and the peoples who utilized them.

Wallace, Arland (Student), and Crystal Dozier (Wichita State University)

[299] *Experimental Re-creation of a Pumpkin (Cucurbita spp.) Leather Mat*

[WITHDRAWN]

Walling, Stanley [381] see Brady, James

Wallis, Neill (Florida Museum of Natural History), Jennifer Green (University of Florida), Cristina Oliveira (University of Florida), Alisa Luthra (University of Florida), and Aditi Jayarajan (University of Florida)

[88] *The Effect of Postdepositional Fragmentation on Archaeological Oyster Shell Metrics*

The eastern oyster (*Crassostrea virginica*) is an ecological and cultural keystone species that has been exploited by humans for millennia. Oyster size is a good proxy for population health, and researchers frequently use valve height and length measurements from archaeological and paleontological contexts that provide baselines for assessing past human impacts and have potential to inform present-day management. Fragmentation, however, is rarely assessed in archaeological studies of oyster size. We determine the effects of fragmentation on oyster size through study of bulk samples from stratified contexts at two Florida Gulf coast sites, Garden Patch (8DI4) and Calusa Island (8LL45). Both collections are composed of whole oyster valves, valve fragments with hinges, and valve fragments lacking hinges. Comparisons of whole valve survival rates, mean fragment size, and whole valve height and length show correlations well described by nonlinear regression models. These results suggest variation in valve height and length are explained by taphonomic processes, not differences in the pre-fragmented oyster population, which complicates current approaches to

the use of archaeological oyster assemblages as a proxy for past oyster reef health. We encourage continued critical evaluation of the archaeology of oyster assemblages and interrogation of their historical ecological implications in the present.

Wallis, Neill [66] see Datka, Zhuldyz

Wallis, Neill [101] see Duke, C. Trevor

Wallis, Neill [224] see Luthra, Alisa

Wallis, Neill [114] see Rutkoski, Ashley

Wallis, Neill [66] see Torvinen, Andrea

Wallman, Diane, Caroline Borges (Universidade Federal Rural de Pernambuco), Mark Hauser (Northwestern University), Douglas Armstrong (Syracuse University), and Irvine Auguste (Kalinago Territory)

[167] *Sustained Island-Mainland Connections in the Colonial Caribbean Analysis of Jaguar and Puma Canine Pendants Recovered from LaSoye 2, Dominica*

The two largest felids in the Americas, the jaguar (*Panthera onca*) and the puma (*Puma concolor*), serve as important markers of spirituality, ritual, and identity among Indigenous cultures in the Americas. The symbolism associated with jaguars, in particular, was transferred by the populations who migrated from mainland South America to the Caribbean islands, as iconographic representations of this species are found on ceramics and as various manufactured objects. Additionally, pendants made from the teeth of jaguar have been recovered archaeologically in precolumbian contexts in Puerto Rico and Grenada. Recent excavations at LaSoye 2 in Dominica have recovered two jaguar canine pendants and one puma canine pendant. LaSoye 2 was a settlement on the northeast coast of the island, occupied by an Indigenous Kalinago community, with European traders residing ephemerally at the site from a late seventeenth- / early eighteenth-century context. This paper presents the results of osteological analysis, radiometric dating, and stable isotope analyses on these pendants from LaSoye 2. The recovery of these materials suggests sustained cultural, and perhaps physical, connection with the South American mainland centuries after European arrival in the Caribbean.

Walsh, Mary-Ellen (State Historic Preservation Office)

[43] *Arizona SHPO's Plan to Integrate Tribal Perspectives, Values, and Traditional Ecological Knowledge into the Section 106 Process*

"We envision an Arizona where our diverse cultures and collective heritage are embodied in places and celebrated through unique stories, fostering vibrant communities that thrive both economically and socially. Through generational stewardship, education, dynamic partnerships, and a balanced approach to preservation and development, we can preserve our historical and cultural places for present and future generations." Arizona's vision statement for the 2025–2035 statewide comprehensive historic preservation plan was developed in collaboration with tribes, agencies, and other stakeholders to guide heritage programs in all levels of government. This vision underscores the need for collaborative stewardship in the preservation of tribal heritage, including a recognition of the relationship between archaeological and natural resources and cultural landscapes. This paper addresses the inability of the current National Register framework to properly document properties associated with tribal heritage and the limitation of Section 106 review to resolve adverse effects to such properties. Given Executive Orders promulgating the use of traditional ecological knowledge (TEK) in federal decision-making, we argue the need for SHPOs, federal land managers, and cultural resource professionals to work collaboratively to ensure that appropriate consideration be given to tribal voices in the identification, evaluation, and treatment of tribal heritage on public lands.

Walsh, Matthew (Nationalmuseet), and Anna Prentiss (University of Montana)

[129] *Continuity and Change in Lithic Tool Use over Generations at Housepit 54 (EeRI4) at Bridge River*

Building on previous research on the cultural transmission of material culture between generations at Housepit 54 (Prentiss et al. 2016, 2020a), this poster presents ongoing research exploring the possible transmission trajectories of lithic technologies across activity and domicile areas at Housepit 54 using three levels of analysis: by block within each floor, by floor, and by occupation period, delimited by excavation units (floor strata [time] and excavation blocks [space]) at the site. Activity areas (based on the distribution of

lithic materials) are evident in different places at different times of occupation within the pithouse (Prentiss et al. 2020b, 2022), but are there any indications that certain areas were recognized or marked out for specific tool-related activities similarly across multiple occupations? For example, different lithic tools distributed in the same blocks or areas within blocks on time-adjacent floors can tell us about the possible use-life of particular spaces as well as the possibility of intergenerational continuity between different occupations. This implies the possibility of cultural transmission regarding the use of space over generations. The research presented takes a cultural phylogenetic approach to this study of continuity and change in the use of activity space over multiple generations at Housepit 54.

Walsh, Megan (Central Washington University), and Robert Rosenswig (University at Albany SUNY)

[387] *Holocene Paleoenvironmental Reconstructions of Human-Landscape Interactions from the Progresso Lagoon Region of Northern Belize*

Holocene-length paleoenvironmental histories from the Progresso Lagoon region of northern Belize were reconstructed using multiple lake sediment cores obtained in 2022. We report on high-resolution macroscopic charcoal, pollen, and sedimentological data that clearly indicate shifting intensities of human-landscape interactions during the Holocene through the use of fire for land clearance and agriculture. The Progresso Lagoon sediment records indicate low levels of burning on the landscape prior to ca. 4500 cal yr BP, with the highest fire activity between ca. 4000 and 1500 cal yr BP. Low but persistent fire activity was recorded after that time until present day. Preliminary pollen analysis results indicate maize on the landscape near Progresso Lagoon during the late Holocene. The exact timing of this activity will become clearer with the continued refinement of the core chronologies based on additional radiocarbon dating. Additionally, four new sediment cores were obtained from the north end of Progresso Lagoon in 2024. The paleoenvironmental analysis of these cores, in conjunction with continued archaeological and radiocarbon dating efforts, will help clarify the spatial and temporal scales of human-landscape interactions in the Progresso Lagoon area during the Holocene.

Walsh, Megan [387] see George, Richard

Wande, Claudio (Universidad de Chile), and Mauricio Uribe (Universidad de Chile)

[394] *Una arqueología crítica del colonialismo en Los Andes centro-sur: Aportes de cerámicas post-incaicas de Tarapacá (siglos XV-XIX)*

En el Desierto de Atacama, la colonización europea se ha estudiado principalmente desde enfoques históricos, subvalorando la información arqueológica para comprender estos procesos traumáticos. Esto ha llevado a perspectivas parciales e imaginarios sesgados, potenciados por la falta de datos materiales en las narrativas y documentos coloniales. Frente a las tecnologías persiste la noción del “indígena” como “recipientes pasivos” del cambio y no como agentes claves en la reconfiguración de los sistemas socioeconómicos. Un enfoque en las expresiones técnicas de estos procesos abre nuevas ventanas interpretativas coherentes con la complejidad del colonialismo en los Andes. Apostamos por una arqueología histórica que visibilice los elementos ausentes en los márgenes del régimen colonial, donde lo marginal se vuelve doblemente marginal, al no contar con todo el registro histórico y documental que sí existe en los centros coloniales. Tomando el caso de San Lorenzo de Tarapacá, un poblado de la precordillera del norte de Chile, estudiamos el material cerámico que demuestra la coexistencia de tecnologías nativas e introducidas, así como expresiones híbridas novedosas. Desde la tecnología, buscamos aportar con una perspectiva sustantiva de sincretismos, violencias y resistencias, sobre cómo se configuraron los mundos indios, mestizos y coloniales en el desierto más árido del mundo.

Wandsnider, LuAnn (University of Nebraska, Lincoln), Benjamin Kreimer (Independent Researcher), Alexander Pastor (University of Nebraska, Lincoln), Heather Richards-Rissetto (University of Nebraska, Lincoln), and Richard Wood (University of Nebraska, Lincoln)

[123] *Preliminary Methodology and Analytic Results of Drone-Based Lidar at Antiochia ad Cragum (Turkey)*

Circa AD 72, the Roman client-king Antiochus IV established the city of Antiochia ad Cragum, located in coastal southern Turkey, and eventually the city and its province was fully incorporated into the Roman Empire.

Isaurian incursions and Selcuk and modern occupations followed. Since 2005, researchers have been excavating shallowly buried architecture here, exposing an Early Roman-era temple, baths, and bouleuterion as well as Late Roman villas, industrial loci, and Christian basilicas. The more expansive cityscape has not yet been thoroughly investigated owing to environmental and logistical challenges from dense vegetation, steep terrain, and modern development. In July 2024, drone-based 3D lidar data and 2D orthomosaic imagery were acquired for 2 km² enabling initial inspection of previously undocumented areas. We analyze these data types using derived techniques to develop lidar-based relief visualizations to identify and document potential archaeological features that are ground-verified, contributing to a broader understanding of Antiochia ad Cragum. This effort complements those of other Mediterranean researchers who are experimenting with similar technologies.

Wandsnider, LuAnn [189] see Pastor, Alexander

Wang, Chen, Sarah De Ceuster (KU Leuven), Katherine Eremin (Straus Center for Conservation and Technical Studies, Harvard Art Museums), Sarah Laursen (Harvard Art Museums, Cambridge), and Patrick Degryse (KU Leuven)

[228] *Circulation Dynamics in Han Dynasty China: Insights from Isotopic Analysis of Lead Glazed Pottery*

This study investigates lead provenance and circulation patterns in Han Dynasty (202 BC–AD 220) China through the analysis of lead glazed pottery. Four objects from Harvard Art Museums were studied using a combination of typological study, elemental chemistry, and lead isotope ratio analysis. The results for each object were compared with databases of “lead mining districts” (lead ore provinces and deposits) and “lead usage districts” (lead-containing artifacts unearthed in different spatial and temporal ranges) by Density Estimates Method. This helped assess the lead sources for each sample and provided a spatial-temporal context for lead resource use. Three distinct groups of lead and their possible circulating spatial-temporal scales are identified across six samples in this study. A possible shift in lead supply networks between the Western Han Dynasty (202 BC–AD 9) and the Eastern Han Dynasty (AD 25–220) is proposed. Additionally, changes in lead resource movement from the Han to the Tang Dynasty (AD 618–690) indicate advancements in long-distance transport and economic exchange. These findings offer new insights into the economic and political dynamics of the Han Dynasty, highlighting the role of lead isotope analysis in tracing resource movement and illuminating the broader patterns of ancient Chinese trade and exchange.

Wang, Chunxue (Jilin University), and Jiaqi Wang (Jilin University)

[190] *Human Activity and Adaptive Behavior during the Late Pleistocene and Early Holocene in the Lop Nur Region, Northwest China*

The Lop Nur region, in the east part of Tarim Basin, was an important transportation junction between west and east, north and south Eurasia. However, previous studies on prehistoric human activity have concentrated mostly on the Bronze Age, whereas that during the Stone Age remains largely unresearched. An archaeological team has discovered 20 new sites and thousands of stone artifacts, providing direct evidence of early human activities in the region. Based on the discovery of stone artifacts at dozens of sites, microblade technology in the Lop Nur region is not directly related to the tradition of Upper Paleolithic in North China, but has closer connections with Central Asia and Altai region. The new progress in prehistoric archaeology in Lop Nur, Xinjiang, provides new materials for our understanding of the characteristics and distribution patterns of lithic technology in Xinjiang and even China from the late Pleistocene to the mid-Holocene and provides important evidence for studying the adaptive survival ability of the population and the interaction between the population and the environment. It is of great value for studying the migration and cultural exchange of the Eurasian continent population at that time.

Wang, Chunxue [191] see Zhang, Yao

Wang, Jiaqi [190] see Wang, Chunxue

Wang, Mi (Institute for the Study of the Ancient World, New York University)

[115] *Working for His Majesty? Reconstructing the Regional Pottery Networks of the First Walled Center of Liangzhu during the Third Millennium BCE in the Yangtze River Delta, China*

Black-skin pottery of the Neolithic Liangzhu Culture of the Yangzi River Delta, regarded as advanced craftsmanship for the third millennium BCE, is believed to have been centrally produced and/or distributed as a distinctive type of pottery, distinct from non-black-skin pottery. However, with no kilns discovered yet, this assertion is primarily based on its seemingly uniform style and the assumption that the center should oversee sophisticated crafting as later states did supposedly. Using black-skin pottery as a starting point, this paper aims to explore the possibility of alternative modes of Liangzhu's political economy beyond a centralized economic system. Depending on variations in the composition and manufacturing technique of pottery revealed in ceramic analysis, modes of production and exchange networks, such as center-distribution, integrated network, or small-scale networks, can be examined by evaluating the similarities or differences in the proportion of pottery groups across assemblages. This inquiry seeks to answer critical questions: Was it indeed the case that the center controlled the production and circulation of black-skin pottery? Is black-skin pottery indeed evidence of an asymmetric economic relationship between those living within and outside the wall? Or could its distribution pattern actually serve as evidence for a multi-nodal, heterarchical economic network?

Wang, Weilin

[338] *The Function of the "Large House" of the Miaodigou Culture and the Social Complexity*

The grand and complex semi-subterranean pentagonal houses were one of the significant hallmarks of the Miaodigou Culture, and many scholars have studied their function. This study, through a reexamination of the internal structure, surrounding remains, and related factors of such houses, suggests that these houses were likely associated with the production of painted pottery, which was highly influential at the time. The semi-subterranean pentagonal houses and painted pottery with ritual significance, such as the "Huashan Rose," appear to have coexisted and declined together. Exploring this positive correlation offers a new perspective on understanding the settlement structure of the Miaodigou Culture and the process of social complexity in prehistoric China.

Wang, Xueye [69] see McNeill, Patricia

Wang, Yuan (University of Washington)

[115] *Social Complexities in the Loess Highland during the Late Shang Period (1300–1050 BC): New Evidence from Zhaigou*

Because of limited research and a perspective centered on the last Shang capital at Anyang, the understanding of the Loess Highland during the Late Shang period (1300–1050 BC) is still at an infant stage. For a long time, the Loess Highland has always been regarded as a "periphery," with limited local population and single societies. However, new discoveries including large-scale architectural complex of pounded-earth, cemeteries belonging to different social classes, and metallurgy-related remains in Zhaigou point to increasing stratification of a local society. Archaeological data indicates that there were hundreds of emerging polities like Zhaigou on the Loess Highland during this period. The local elites may have controlled the long-distance trade to monopolize valuables and religious systems, which helped them build authority and accelerate the social complexity process. These new discoveries enable us to understand the interaction and exchange between regions and social forms in East Asia in the early Bronze Age and provide a good case for studying the social complexity in the early stage.

Wang, Yucheng, and Ruairidh Macleod (University of Cambridge, UK)

[277] *Reconstructing Prehistoric Human Subsistence Patterns Using Ancient Environmental DNA from Submerged Archaeological Sites*

Ancient environmental DNA (aeDNA) is emerging as a powerful tool for analyzing genetic information from organisms across the tree of life, dating back millions of years. The cold, undisturbed, anaerobic, water-sealed conditions of submerged archaeological sites provide ideal preservation for aeDNA, offering a unique opportunity to apply this cutting-edge approach to reconstruct detailed prehistoric human subsistence patterns. Additionally, the well-preserved, high-quality ancient DNA from these environments can contribute to the development and refinement of aeDNA techniques. While lake sediments have been widely used in aeDNA-based paleo-ecological studies, their application in underwater archaeological deposits remains rare.

In this presentation, I will briefly summarize recent technical advances in aeDNA research, with a focus on its archaeological applications. I will then explore the potential and challenges of using aeDNA in submerged archaeological contexts. Finally, I will present preliminary aeDNA data and results from submerged sites in Lake Huron, and outline our plan for the next phase of analysis.

Wann, Kevin

[297] *Comparisons of Commercial, Local, Wild, and Ancient Avocado Genomes*

Avocados are a globally important fruit, crucial to the diets of urban and Indigenous groups alike. Despite their utility, the origin of domesticated avocados is still largely a mystery. To better understand when, where, and how a wild plant species fell under domestication, geneticists must examine that species from the perspectives of commercial, traditional, and ancient cultivar genomes alongside those of the wild progenitor. From 2023 to 2024 we sequenced the genomes of 35 Nicaraguan and 16 southern Mexican rural cultivars and one ~1.7 ka cultivar from El Gigante, Honduras. Local cultivars were collected from commercial farms, house gardens, or traditional corn and coffee fields. We mainly seek to determine if the El Gigante genome shows traces of origin from southern Mexico, contained in the geographic origins of the Guatemalan domesticated ecotype, or from Nicaragua, contained in the origins of the lowland ecotype. Then, we may have a better idea of the degree to which ancient societies tended to grow local wild trees or imported domesticated varieties from foreign regions. Comparisons of commercial and local cultivars will also show us the degree to which the global market has limited the genetic diversity of cultivated avocados, threatening food security.

Ward, Emily (University of Kansas), Lauren Norman, Justin Tackney (University of Kansas), Kristine Beaty (University of Kansas), and Dennis O'Rourke (University of Kansas)

[297] *Shifting to Domesticates: Using Morphology and Genetic Analyses to Assess Birnirk and Thule Inuit Human-Canid Relationships*

Canids are essential actors in Alaskan Iñupiat societies. Recent studies have tracked the domestication of dogs in the Siberian Arctic. We also have a good understanding of human-dog interactions among late ancestral and contemporary Iñupiat. Our study provides data on the middle period, looking at canid remains associated with the Birnirk who migrated from Siberia, at the Cape Espenberg site (KTZ-304). We use estimates from measurements of canid elements to categorize canids as wild or domestic. We compare these bimodal results to genetic identifications to inform the accuracy of the morphometric methods. Both lines of evidence indicate that Birnirk people were interacting closely with both wild and domesticated canids at the site, which is distinct from the subsequent Thule occupation at the site where domestic dogs make up most of the canid remains. Our comparison of the canid-human relationships among Birnirk people to later Thule Inuit indicates a shift away from engaging closely with wild canids. We propose that human-canid interactions were transitioning from a limited use of domestics in the Birnirk period to a reliance on them in later Iñupiat periods. This corresponds to an increased presence of dog traction artifacts in the later periods.

Ward, Grace (Dartmouth College)

[58] *The Relationship between Mound Building and Agroforestry at Late Archaic Earthwork Sites*

Mound-building and food production are often treated as two distinct areas of study in the archaeology of the Indigenous southeastern United States. Accordingly, the results of decades of research remain siloed—monumentality, funerary practices, and social organization on one side; hunting, fishing, gathering, and cultivation on the other. In this paper, I argue that these major fields can be brought together through the lens of labor. I focus on the Late Archaic period (ca. 5000–3000 years BP) in the Lower Mississippi Valley. Based on paleoethnobotanical data from Poverty Point in Louisiana and Jaketown in Mississippi, I suggest that the coordinated harvesting of fruit and nut masts and controlled burns for land clearance entailed relationships and episodic, specialized social organization similar to that needed for earthwork construction. As such, labor was a force for social integration. Labor maintained the web of relations in the Lower Mississippi Valley that produced the earthworks at Poverty Point and Jaketown as well as the tended forests beyond them. Building mounds and producing food both meant working with others, human and nonhuman.

Ward, Rhiana (Raba Kistner)**[367]** *Burial Practice at Mission San Antonio de Valero, Bexar County, Texas, USA*

Between 2019 and 2020, archaeologists conducted a series of test excavations within the footprint of the former Mission San Antonio de Valero—known today as the Alamo. Excavations were completed to assist preservationists in completing a series of architectural assessments for the two remaining structures of the first Franciscan mission established along the San Antonio River in central Texas. During a 17-month field season, 24 historic burial features were documented within the footprint of the Alamo church. Twelve of the historic burial features were exhumed to allow assessments to continue while the remaining 12 were preserved in place. This presentation will include an analysis of ethnohistorical accounts from the former mission to determine continuities and breaks in traditional burial practices at Mission San Antonio de Valero based on the excavation results. A brief review of Texas mission burial practices documented in the archaeological record will also be examined for comparison. *****This presentation will include images of human remains.**

Ward, Sheila, and Nicholas Brokaw (University of Puerto Rico, Retired)**[52]** *The Multiscale Heterogeneous Environment of the Maya Lowlands of the Present*

The book *Heterarchy, Political Economy, and the Ancient Maya*, edited by Scarborough, Valdez, and Dunning, argued that local natural resources shaped distinctive local communities of the ancient Maya, which, in combination, could have produced different regional political economies. Thus to understand the ancient Maya one must understand types and scales of variation in their natural environment. We describe variation in modern vegetation and flora ranging in scale from the whole Maya Lowlands, to regional environments and landscapes, to hilltop versus valley bottom on the topographic catena. From north to south in the Lowlands, rainfall decreases, while soil depth and species richness increases. Water in the north of the Lowlands is only available year-round in cenotes, while there are perennial lakes and marshes in the south. Within regions and landscapes comprising the Lowlands there are major differences in soil type and thus vegetation type and flora (e.g., savanna vegetation on sand versus tall forest on limestone parent material). Along catenas within landscapes numerous tree species are indicators of either hilltop or valley, indicating different land use potentials. We characterize in some detail environmental variation at landscape and catena scales in northwest Belize, which may help characterize ancient political economy.

Wardle, Joseph**[184]** *Identifying Ancient Mesoamerican Fortifications with a Bayesian Network Model*

Identifying fortifications in the archaeological record can lead to inferences of important elements of past human behavior and social evolution. However, identifying ancient fortifications can often be difficult and contentious. One solution is to avoid a binary approach to identification and instead utilize a Bayesian approach with a probabilistic model that quantifies the confidence that a specific site is a fortification. To test this approach, I reassessed the identification of fortified and defensible sites in the Valley of Oaxaca in southern Mexico. Such sites can be indicators of warfare, boundaries, and changes in political systems, such as the emergence, expansion, and collapse of the state. Correctly identifying them is essential. Building on pioneering work by Steve Kowalewski, J. Michael Elam, and others, this Bayesian approach confirmed many of the original identifications of fortified and defensible sites, while questioning others. This approach can be fruitful for archaeologists attempting to identify fortifications on landscapes in any region of the world.

Warinner, Christina [316] see Burge, Keri

Warinner, Christina [235] see Ho, Percy Hei Chun

Warner, John [172] see Park Huntington, Yumi

Warner, Mark (University of Idaho), Renae Campbell (Asian American Comparative Collection, University of Idaho, Moscow), and Katrina Eichner (University of Idaho)**[275]** *Sharing the Shelves and Opening the Doors: Making Collections Useful to Communities*

For the past decade, historical archaeologists at the University of Idaho have been aggressively committed to making archaeology available to communities. On one front, this has meant conducting numerous excavations

that were explicitly open to the public for participation. The second front has been collections focused. The collections work has taken many forms ranging from analytical work on specific objects, to creating digital venues for sharing collections, to long-term collaborations with federal agencies to analyze and report on their long dormant collections. Collectively, the work is demonstrating that learning through archaeology is ongoing and does not end when the excavations end.

Warner, Monica (University of New Mexico), Nadia Neff, Erin Ray (University of New Mexico), Viorel Atudorei (University of New Mexico; Center for Stable Isotopes), and Keith Prufer (University of New Mexico)

[320] *Developing a Quality Control Protocol for Assessing Diagenesis Using $\delta^{18}\text{O}$ in Carbonates and Phosphates from Human Bone and Tooth Hydroxyapatite*

Stable oxygen isotope ($\delta^{18}\text{O}$) analysis of the carbonate fraction in human tooth and bone hydroxyapatite is well established in archaeology. Researchers use $\delta^{18}\text{O}$ values in human bone and tooth bioapatite to reconstruct migration, climate, and water sources. Bioavailable stable oxygen isotopes of carbonates and phosphates originate from the same body water pool and should reflect similar environmental conditions in obligate drinkers with a linear relationship. However, deviations from this expected relationship in archaeological hydroxyapatite can indicate diagenetic alteration, potentially leading to inaccurate temperature, water source, and geographic locations. Previous studies have estimated the offset between $\delta^{18}\text{O}$ in carbonates and phosphates ($\Delta^{18}\text{O}_{\text{c-p}}$) for enamel in various mammalian species, but not for humans. This study explores the $\Delta^{18}\text{O}_{\text{c-p}}$ values derived from modern and archaeological human bone and tooth hydroxyapatite, coupled with crystallinity indexes and carbonate-phosphate ratios derived from FTIR data. The goal is to establish a quality control protocol to assess potential diagenesis and determine the reliability of $\delta^{18}\text{O}$ values obtained from human archaeological hard tissues.

Warner, Monica [320] see Tierney, Citlali

Waski, Nadia (SWCA Environmental Consultants)

[322] *The Stockbridge-Munsee Community and SWCA Partnership: A Case Study for Collaboration and Mitigation in Consulting*

In the summer of 2023, the Vermont Agency of Transportation (VTTrans) contracted with the SWCA Environmental Consultants' (SWCA) Amherst office to assist the Stockbridge-Munsee Band of Mohican Indians (Tribe) with after-the-fact mitigation activities. The activities were in response to a Federal Emergency Management Agency (FEMA)-funded flood disaster reparation project completed along the Rutland to Burlington rail line. The mitigation tasks included the production of an ArcGIS Story Map interface detailing the Tribe's involvement in the Revolutionary War, as well as the development and production of interpretive panels. SWCA utilized internal GIS and marketing teams to generate interpretive panels and a StoryMap, to which the Tribe will continue to make additions as their research continues. Throughout the year-long effort, it was vital SWCA acknowledged their role as consultant aiding the Tribe in obtaining their goals, all the while maintaining respect, consistent communication, and flexibility. SWCA and the Tribe successfully produced deliverables that upheld the Tribe's efforts to provide the public with an accurate narrative, told from their community's perspective. Results from this project demonstrate how collaborative consultant tribal partnerships can strengthen tribal sovereignty and decolonize narratives.

Waski, Nadia [228] see Cordero, Robin

Watanabe, John (Dartmouth College)

[289] *A Scientific Anthropological Archaeologist at Work*

This paper reviews the 50-year contribution of Deborah L. Nichols to Mesoamerican archaeology, highlighting her insistence that archaeology is indeed anthropology and how a fundamental anthropological perspective informed all her work. From her 1977 excavations of the earliest known Basin of Mexico irrigation canals at Santa Clara Coatitlán, to her subsequent research on household craft production at Otumba, regional exchange networks across the Basin of Mexico, and formative settlement at Altica, she

treated her findings as the outcomes of social decision-making within shifting ecological and political economic parameters and sought to validate her conclusions through systematic comparison defined, not by fixed typologies, but by key variables whose effects on each other could change according to circumstances, thereby demonstrating the nature of the interconnections between them. This appreciation for both the interactional “insider’s point of view” and macrolevel comparative generalization represents anthropological science at its best. Conversely, the way she could hypothesize sociocultural behaviors that produced the material artifacts she found also substantiates an essential contribution of archaeology to anthropology. Finally, her collaborations with other archaeologists and her readiness to apply new technologies to long-standing questions epitomize what Thomas Kuhn argued led “normal science” inevitably, if only inadvertently, to scientific revolutions.

Watanabe, Yusuke (University of Tokyo; Bunkyo-ku, Tokyo)

[292] *Investigating Genetic Heritage and Adaptive Responses in Prehistoric Populations from the Eastern Edge of Eurasia through Ancient DNA Analysis*

Recent genetic studies on the movements of early human populations, including ancient DNA research, have suggested ancestral migrations from Southeast Asia to East Eurasia and the Americas. However, certain adaptive responses during the eastward migration into Eurasia remain unclear. By examining ancient genomes from prehistoric hunter-gatherers in the Japanese archipelago, we investigate their genetic heritage and connections to earlier human populations that settled during the Late Pleistocene. We analyzed potential genetic adaptations to understand how these may have supported survival in Late Pleistocene East Eurasia.

Waters, Michael (Center for the Study of the First Americans)

[53] *Dating Late Pleistocene Archaeological Sites in the Americas*

Geoarchaeological studies are critical to the evaluation of late Pleistocene archaeological sites in the Americas. One of geoarchaeology’s important contributions is to provide an accurate age for a site and its associated stratigraphy. Today, I will discuss best practices for the radiocarbon dating of bone. Laboratories currently use different chemical protocols to extract datable material from bone. These different chemical fractions all yield ages, but most are not accurate. Because atomic accelerators can produce accurate and precise measurements on small samples, it allows us to date chemical fractions derived from bone collagen that originated only from the bone itself, effectively removing all contamination. Currently, only XAD-resin purified collagen or specific amino-acid (hydroxyproline) extractions consistently yield accurate ages. Other chemical fractions provide ages that are not consistently accurate. Accurate dating is critical to establishing when the first people arrived in the Americas, how they dispersed across the Americas, determining the timing of extinction of megafauna at the end of the Pleistocene, and other important questions. Without accurate chronology our understanding of the process of the peopling of the Americas will take many unnecessary detours to dead ends.

Waters, Michael [125] see McIntosh, Teagan

Wathan, Moe Sat [61] see Barry, Jack

Watkins, Tia [301] see Hoggarth, Julie

Watson, Rachel [283] see McKillop, Heather

Watson, Rachel [283] see Meaux, Amanda

Watson, Sara (Field Museum of Natural History), and Laure Dussubieux (Field Museum of Natural History)

[69] *Sourcing South African Silcretes Using Minimally Destructive LA-ICP-MS*

Understanding how hunter-gatherer groups move around the landscape is essential for answering questions about human behavioral ecology and evolution of the social landscape. Lithic raw material proveniencing sheds light on how far people in the past were traveling for toolstone and whether people from different sites were accessing the same raw materials but can be challenging in heterogeneous materials. We used LA-

ICP-MS to characterize the geochemical composition of silcrete samples taken from multiple outcrops in South Africa to address questions of raw material source access for silcrete for late Pleistocene sites in the southern Cape. Silcrete, a terrestrial sedimentary rock, is rare along the southern coast of South Africa and becomes more common inland at higher elevations. The discrete outcrops of silcrete and its relatively low frequency on the landscape provides an opportunity for geochemical proveniencing. Our results from this pilot study assess the suitability of LA-ICP-MS for proveniencing silcrete. This technique is micro-destructive, which is important for applying this method to museum collections. Future research will include analyzing silcrete artifacts from Nelson Bay Cave, South Africa, to determine how many different silcrete sources people occupying the site were accessing.

Watson, Sara [190] see Nixon, Tessa

Watts, Joshua (Archaeology Southwest)

[385] *Regional-Scale Research Sensitivity to Site Location Geomasking and Site Data Aggregation in cyberSW*
Archaeological sites, particularly habitation sites and their precise locations, are important data points in research questions about social-ecological systems or the focus of detailed descriptions of excavations documented in compliance work. But do sites or their locations actually matter in efforts to do synthetic research? Do we need sites at all for many regional-scale research questions? I rerun analyses on late precontact social networks across the US Southwest to assess (1) sensitivity of interpretations of analyses with precise site locations versus geomasked site locations, and (2) whether aggregating site data by local watersheds (i.e., HUC10 drainages) produces meaningfully different results from site-based analyses. The cyberSW database and web-based science gateway—with its built-in analysis tool kit—provides a means to quickly and systematically explore the sensitivity of research to decisions about site data and the sharing of site locations that are often determined by non-research priorities on public-facing resources such as cyberSW.

Watts Malouchos, Elizabeth (Illinois State Archaeological Survey; University of Illinois), Jacob Skousen, and Everett Bandy (Quapaw Nation)

[102] *Pursuing Big Histories through Collaborative Research and Preservation at the Illinois State Archaeological Survey*

Timothy R. Pauketat has left an indelible mark on the field of archaeology, shaping theory and method and challenging archaeologists to investigate broad relationships between history and humanity. For Tim, archaeology should always be about big questions and big histories, about understanding the past, how it impacts heritage in the present, and mobilizing that knowledge for the future. As director of the Illinois State Archaeological Survey, Tim established the Collaborative Research Engagement section to collaboratively pursue big histories and understand how archaeology can better serve descendant communities. In honor of TRP, we discuss the preliminary results of two projects collaboratively tracing big histories in partnership with Tribal Nations. First, we review consultation and collaboration with descendant Tribal Nations on research in support of preservation at the Noble-Wieting cultural site, an impacted late precontact Mississippian and Langford tradition village site in central Illinois. Second, we detail conducting legacy collection research at the behest of the Quapaw Nation to explore ancestral connections between the Mississippian Angel Mounds center in southwestern Indiana and the late precontact phases of northeastern Arkansas.

Wauters, Valentine (ULB and RMAH)

[327] *The Cañari Collection of the Royal Museums of Art and History of Brussels: Spotlight on a Forgotten Collection*
The Cañari culture from the prehispanic period covered a large territory in the Ecuadorian Andes (in the provinces of Cañar, Azuay and surrounding areas). The Royal Museums of Art and History of Brussels house about 40 objects from this important and complex cultural group. For several months now, a spotlight has been put on this diversified collection, which includes ceramic, metal, and stone artifacts. Until recently, they were forgotten in the storage since their donation, almost 150 years ago, with no cultural or chronological attribution. A recent extensive study of this collection has made it possible to attribute these objects to the Cañari culture, as well as to carry out archival research, and to organize a conference and study days on the

material in the presence of eminent specialists of this culture. These unique opportunities have allowed us to work jointly on this collection. The results presented here have increased our knowledge of this collection, given us a better understanding of the material, and made this highly interesting collection better known.

Wayman, Joseph

[287] *Wayman's Hypothesis for the Function of Acheulean Lithics Offers a Better Explanation than Does the Current Thinking*

In "Foot Cutters: A New Hypothesis for the Function of Acheulean Bifaces and Related Lithics" (*Lithic Technology* 35[2], 2010), I propose that the predominate tool kit of the Early/Middle Pleistocene were not used as hand tools but instead were devices used to arm traps intended to damage the feet and lower legs of prey animals so that the animals are unable to escape and can be killed and used as a resource. Though published in a respected journal, the idea has yet to be discussed by the field. My idea should be discussed based on cognitive science philosopher Paul Thagard's method of assessing competing hypotheses. Thagard says that the hypothesis that offers explanations for the most attributes should receive the most attention. His suggestion results in a table with evidence on one axis and explanations for evidence on the other. In this matrix I demonstrate that the current thinking is made of not one but several ideas, and that some attributes in evidence are not covered by any of the current ideas. My idea does offer explanations for all attributes in evidence and therefore out-competes the others. The most coherent idea is mine and should be examined.

Weaver, Jesse (Mississippi State University), Derek Anderson (Cobb Institute of Archaeology), Molly Zuckerman (Mississippi State University), and D. Shane Miller (Mississippi State University)

[88] *Reconstruction of Destruction: A Spatial Analysis of Site Integrity and Hurricane Damage at Aklis, St. Croix*
Aklis (12Vam1-42) is a precolumbian coastal site located within the Sandy Point National Wildlife Refuge on the island of St. Croix. The site contains a meter-thick, artifact-dense midden, as well as a number of human burials actively eroding into the Caribbean Sea. Previous investigations of the Aklis site have focused on the salvage of human burials, but here we examine the records and collections from 2014 and 2016 Mississippi State University field schools through the lens of site formation theory to examine the midden deposits at Aklis. We here ask: (1) Are there detectable occupational horizons within the midden?; (2) To what extent have cultural versus noncultural transforms affected the integrity of the midden? and; (3) If detected, are these occupational horizons of sound enough integrity to allow for future radiocarbon dating that might clarify culture chronology for Aklis, the Virgin Island Passage, and the West Indies? To this end, a battery of tests, including refit analyses, examinations of inclination and artifact mass versus relative elevation, and stratigraphic positioning of temporally diagnostic ceramic styles, are used to examine the spatial relationships of artifacts within the midden and establish site integrity for future examinations of the site.

Weaver, Jesse [343] see Zuckerman, Molly

Weber, Sadie (Universidade de São Paulo)

[182] *Between Identification and Tradition: Toward a Folk Biology of Prehispanic Andean Pastoralism*

Faunal analysis in the Andes, while not without its own unique challenges, forms the foundation on which much of our understanding of Andean economy and ecology is based. Once thought to be a practice limited to the high Andes, it is now largely accepted that camelid pastoralism became a prominent practice at low altitudes in the central Andean region. Research by various scholars in the last four decades has dismantled this notion of the exclusivity and homogeneity of highland herding and has added nuance to our understanding of prehispanic pastoral economies in a wide range of environments. While we now recognize the heterogeneity of past pastoral landscapes and practices, our knowledge of prehispanic biological diversity and the roles these animals played in society remains limited. Much like the disparity in prehispanic and contemporary camelid genetic diversity, the ways in which camelids are understood and cared for today may not actually represent those of the past. Here, I draw on traditional faunal analysis, stable isotope analysis, and folk biology to explore the sociocultural perceptions of camelids in the prehispanic Andes.

Webster, Cody [340] see Hawkins, Rebecca

Webster, Laurie (University of Arizona)

[362] *From Sandals to Sashes: The Origins and Elaboration of Basketmaker Dress in the Greater Bears Ears Area*
The Cedar Mesa Perishables Project has documented nearly 5,000 perishable artifacts from alcoves in southeastern Utah. As part of this work, the project has generated about 100 radiocarbon dates from well-preserved woven textiles, sandals, baskets, and other perishable items from the greater Bears Ears area, resulting in the largest dataset of directly dated perishable artifacts from this region. With 80% of the sample represented by Basketmaker technologies, these data offer new insights into the origins and elaboration of early Ancestral Pueblo clothing styles and technologies and a more nuanced understanding of Basketmaker and early Puebloan dress for the period 200 BCE–900 CE.

Weedman Arthur, Kathryn [69] see Tykot, Robert

Weeks, Lloyd (University of New England Australia)

[49] *Analyses of Metallurgical Remains from Failaka, Kuwait: Exploring the Persian Gulf Metals Trade in the Second Millennium BCE*

This paper reviews the exchange of metals within the greater Persian Gulf region during the second millennium BCE, considering archaeological, archaeometric, and documentary evidence. The specific focus is the metallurgical assemblage from Failaka Island (Kuwait) and its implications for the continued production and trade of copper from southeastern Arabia at a time when primary production evidence is scarce. Evidence from contemporary sites in the Persian Gulf is introduced to contextualize the Failaka data, and the exchange of other metals (particularly tin and silver) is also considered in order to build a more complete picture of routes and mechanisms through which these metals circulated in eastern Arabia. Together, these metals illustrate the significance of eastern Arabian metal production and trade for understanding wider regional developments, while highlighting the necessity of a supra-regional scale of analysis in order to better understand “local” Arabian instances of economic and technological change.

Wegner, Paul [74] see Reed, Elizabeth

Weiner, Robert (Dartmouth College)

[102] *Moonbows and Movements: A Paean to Pauketat and His Impact on Southwestern Archaeology*

While best known for his work at Cahokia and across the broader Mississippian World, Tim Pauketat has also made a catalytic and lasting impact on the archaeology of the US Southwest and Chaco Canyon in particular. Pauketat has brought fresh, theoretically rich perspectives to Chaco archaeology across numerous publications and conference discussions, emphasizing the agency of sky- and landscapes; phenomenological impact of Great House architecture, roads, and material culture; and relationships between religion and weather spanning Cahokia, Chaco, and Mesoamerica. In this paper, I celebrate and review Tim’s influential—though perhaps lesser known—contributions to understanding the Southwest past and reflect on the profound impact his work has had on my own scholarship through a reading of the Gasco ritual landscape south of Chaco Canyon. Thank you, Tim, for your outstanding mentorship and the inspiration you’ve provided over the years!

Weiner, Robert [55] see Friedman, Richard

Weinmeister, Jessica (Binghamton University)

[326] *Size Matters: A Case Study of Microdebitage in the American Southwest*

Historically, lithic studies have focused on formal tools, informal tools, and debitage recovered through traditional survey and excavation methods. The collection of flotation samples has resulted in heavy fraction materials that include microdebitage. Recent analyses of microdebitage in the American Southwest indicate that smaller debitage paints a different picture than its larger counterparts. Studying the life histories and materiality of microdebitage at Chacoan great house sites in southwestern Colorado provides evidence of lithic procurement patterns, lithic manufacture practices, and possible ritual deposition of lithic materials. My research at the Crosspatch site and the Haynie site indicate that there is value in studying lithic artifacts, including microdebitage found in heavy fraction. This research has implications for our understanding of lithic artifacts’ role in ancestral Pueblo society.

Weinstein-Evron, Mina [175] see Shimelmitz, Ron

Weiss-Krejci, Estella

[45] *Perceptions of Properness and the “Reemergent” Dead*

Every dead person has the potential to be claimed or disputed by someone long after their death. Drawing on the definition of “affect” by Crellin and Harris (2021), Weiss-Krejci et al. (2022) refer to these dead as “reemergent.” Whether a “reemergence” of the dead takes place depends to a large extent on their affective capacities, which in turn are influenced by the real or imagined identities of the dead and culturally contingent perceptions of properness within the society that deals with them in the respective present. Using several examples, primarily from historic Europe, the author will analyze the circumstances under which the dead have reemerged and discuss how the lessons of history can illuminate our understanding of contestation and appropriation of bodies and burial sites in prehistoric contexts. *****This presentation will include images of human remains.**

Weitzel, Elic (Smithsonian National Museum of Natural History)

[74] *Geographic Variation in White-Tailed Deer Abundance in Precolonial Southern New England*

Across eastern North America, white-tailed deer (*Odocoileus virginianus*) were a key food resource in the diets of Native peoples. Despite heavy predation by sizeable Native American populations, there is only limited evidence that white-tailed deer were ever unsustainably hunted prior to European colonization. After colonization, however, people drove deer nearly to extinction in just a few centuries. To investigate whether deer populations were depressed by Native hunters in southern New England, and to better establish a precolonial demographic baseline for the species, I compiled a dataset of white-tailed deer remains from published archaeological reports. Using faunal records from eight sites across southern New England, I investigate precolonial abundances of white-tailed deer during the Late Woodland period and assess spatial variation in their presence across the region. There are significant differences in deer abundance between upland, river valley, and coastal sites. Deer are most common in the former two habitat types, but their relatively lower representation in coastal sites may reflect patch choice dynamics, not resource depression. Thus, the question of whether white-tailed deer were depressed by Native hunters prior to European colonization remains open.

Welch, Jacob (Montclair State University)

[172] *Dangerous Places and Ambivalent Architecture at Ucanha*

In *Perils of the Soul*, Manuel Arias Sohóm described the nature of nonhuman entities to anthropologist Calixta Guiteras-Holmes (1961). Daily life and the real-world transpire through the interactions of both human and nonhuman persons—animals, springs, thread, instruments, and houses—which all live and possess souls. Humans and nonhumans express mutual responsibility toward each other, and failure to fulfill these roles causes disorder in the form of illness, hunger, or physical harm. A well-nourished house, for example, shelters their occupants, whereas a neglected house endangers them. This paper emplaces excavations from Yucatán, Mexico, within the ambivalent social universe of the Maya house. Near the end of the ninth century CE, the royal family at Ucanha broke through their home’s stucco floors and exposed two ancestral buildings constructed several centuries earlier. The precise pit used to excavate the earlier construction phases indicates that several generations of royal family members passed down the precise locations of these buried structures, which remained woven into the social fabric of their lives. I conclude that the ancient excavation relates to a practice described ethnographically in Mesoamerica, in which residents revisit offerings made to the house in order to repair a relationship gone awry.

Welch, John (SFU; Archaeology Southwest), Michael Spears (MOS Research LLC), Katie Portman (HBI International), and Sean O’Meara (O’Meara Heritage Consulting LLC)

[270] *Cultural Landscapes at the Contested Interface of Archaeocentric and Holistic Approaches to Environmental and Social Impact Assessment*

Advocacy for holistic approaches to managing major community and economic development, coupled with global trends in heritage conservation policy, have brought cultural landscapes into focus as manifestations of co-developed human and ecological systems. International and United States policies support the

conservation of cultural landscapes in collaboration with Indigenous Peoples and other local communities. Even as policies have matured, cultural landscape study methodologies remain mired in discipline-, site-, and expert-centric thinking and procedures. Our 2024 expert opinion survey and review of existing cultural landscape study reports reveal five attributes of cultural landscape studies that add value to environmental and social impact assessment. Cultural landscape studies should be (1) completed early enough in the planning stages for alternative designs to be considered; (2) reflective of the values, interests, and preferences of the groups of people who maintain the cultural landscapes and are affected by proposed changes; (3) attentive to landscape-specific human and ecological systems, their co-development, and their physical and cultural manifestations; (4) inclusive of available information, including ecological, cultural, historical, oral-traditional, and geospatial datasets; and (5) supportive of timely applications of results in decision-making, especially in the translation of community values into recommendations for landscape and site conservation treatments.

Welch, Mya (University of Wisconsin, Milwaukee), and Ashley Lemke

[224] *Establishing a Baseline: New Archaeological Research in Lake Michigan Building Community and Indigenous Connections*

The variation in water levels of the Great Lakes over the past 15,000 years has resulted in portions of formerly dry land and unique environments becoming inundated. Although underwater archaeology in the cold, fresh waters of the Great Lakes has often focused on shipwrecks, older archaeological evidence of Indigenous peoples is preserved. This project seeks to locate such evidence within Lake Michigan using a set of methods refined over the past 10+ years by similar studies in Lake Huron, and with a basis in the tenants of community and Indigenous archaeologies. The preliminary work presented here outlines the path forward in discovering submerged sites in Lake Michigan, as well as highlighting the ability of underwater archaeology to answer questions about early lifeways in the Great Lakes, seek insight to how past peoples responded to problems similar to contemporary ones, such as rising water levels, and establish collaborations with Indigenous and local communities.

Welch, Nathan (UCR University), Ashley Shults, Jenna Dittmar (Edward Via College of Osteopathic Medicine-LA), and Ruilin Mao (Gansu Antique Archaeology Institute)

[321] *A Probable Case of Metastatic Carcinoma from the Bronze Age Mogou Cemetery Site (1750–1100 BCE) in Gansu, China*

This poster presents a case study of one of the earliest cases of a secondary malignant neoplasm in China. The individual of the case study is an adult male from the Mogou Cemetery Bronze age site in Gansu province of northwest China through ongoing Mogou Bioarchaeological Project. This Bronze Age cemetery site was in use from 1750 to 1100 BCE by the Qijia (1750–1400 BCE) and Siwa (1400–1100 BCE) cultures and contains approximately 5,000 individuals. The individual of this case comes from Qijia cultural complex based on burial context and practices. This study presents a differential diagnosis of the pathology that includes tuberculosis, mycotic infections, and metastatic carcinoma based on observable osteolytic and osteoblastic lesions on the os coxae. Analysis of the lesions were made using visual methods and X-rays of the affected regions. This will add to record of paleo-oncological research within China. Along with the possible metastatic carcinoma, this individual also suffered multiple incidents of sharp force trauma on the skull and the spine. This adds to the unique dynamics of the Mogou cemetery site which has an unusually high percentage of violent trauma which is of ongoing interest of research at the site. *****This presentation will include images of human remains.**

Welker, Martin (Arizona State Museum), Jonathan Dombrosky (Crow Canyon Archaeological Center), David Byers (Utah State University), and Jesse Wolfhagen (Harvard University)

[196] *Paw-sitive Identification: Machine Learning with Biometrics Improves Canid Detection*

Zooarchaeological canid identifications are made using an array of techniques, many of which were only ever designed to separate dogs from wolves and have never been tested against large samples. Skeletal measurements (termed biometrics) coupled with statistical analyses can improve identification replicability but require large sample sizes to capture morphological variability and precise modeling to gauge prediction error. Machine-learning techniques offer a way to overcome several related issues through processes of data

splitting and the calculation of model performance metrics. Here, we apply several modeling algorithms (Linear Discriminant Analysis, Random Forest, and K-Nearest Neighbors) on a dataset of 957 canid mandibles from 10 North American canid taxa. We then apply these models to archaeological specimens from the US Southwest to reassess previous identifications. We argue that improved canid detection must fully incorporate measures of uncertainty, machine learning helps us estimate uncertainty, and that machine learning improves data quality in zooarchaeology.

Wells, Ben [183] see Puckett, Neil

Wells, Joshua (Indiana University, South Bend; Digital Index of North American Archaeology), Neha Gupta, Eric Kansa (Open Context), Sarah Whitcher Kansa (Open Context), and David Anderson (University of Tennessee, Knoxville)

[298] *How to Develop Software-Based Systematic Reviews of Archaeological Research Articles with Information from the Digital Index of North American Archaeology (DINAA)*

This paper illustrates the application of systematic review software to conduct meta-analyses of archaeological research articles. With an eye toward the practice of meta-analyses in archaeology and other sciences, we will explore the utility of systematic review software tools to accomplish meta-analytical tasks regarding subjects best addressed at the level of the archaeological site using a wide range of tabular and textual source materials, providing documentation on quality control, data extraction, and choices for syntheses of findings from the archaeological literature. Demonstration of selection of archaeological research articles will focus on use of the Digital Index of North American Archaeology (DINAA). DINAA provides a useful lens through which to identify relevant materials for systematic reviews through its linked literature offerings to a variety of archaeological research journals, which are organized by archaeological site numbers, capable of being sorted spatiotemporally, by components, and by a number of site attributes. For systematic reviews of archaeological literature and other primary site-level documentation to be significantly enabled in American archaeology, it will require the greater use of information sorting and linking strategies, such as those used in DINAA, at wider scales between publishers, repositories, laboratories, cultural resource management practitioners, regulatory agencies, and individual projects.

Wemanya, Sylvia [123] see Fennessey, Brenna

Wemytewa, Edward [99] see Dongoske, Kurt

Wen, Shaoqing [79] see Zhan, Xiaoya

Wen, Yadi

[44] *Jade Crafting Activities in Neolithic China*

Jade has become one of the most enduring symbols in East Asia since the Early Neolithic period. Extensive investigations have been conducted focusing on jade final products from the perspectives of aesthetic values, morphological typologies, and sociocultural significance. Nevertheless, little is understood about the nature of crafting activities, intensity of production, and the mechanism of consumption. This study examines the transitions in Chinese Neolithic jade crafting activities through several case studies, from multiple perspectives including raw material acquisition, processing techniques, organization of production, social exchange, and consumption. Of particular interest is the emergence of specialized workshops and their impacts on both the value system of jades and the sociocultural transitions.

Wendel, Martha [337] see Allen, Susan

Wendrich, Willeke (Cotsen Institute of Archaeology, UCLA)

[103] *Keeping People at the Center of Long-Term Knowledge Transfer*

Past persons were agents, cognitive entities that moved and acted in the world as part of a complex network of relationships: within communities and environments; with nonhuman animals, materials, architecture, and landscapes. Long-Term Knowledge may be built on different ontologies, cosmologies, and epistemologies, an

analysis of which is indispensable to understand the context and roots of knowledge. Ethnoarchaeology, when done together with research partners who understand world views beyond the Western academic one, allows a study of the dynamic aspects of ancient society, including communication, performance, social practice, ritual, making, and being in the world. Yet, for the archaeologists, the static nature of our data has traditionally resulted in methodological approaches that focus on what is made, rather than *making*, on typologies, dating, and technological changes, rather than on the person-to-person knowledge transfer underlying these. Ethnoarchaeology has the potential to provide insights into Long-Term Traditional Knowledge, but we need to carefully balance three conflicting problems: of projecting backward; of denying development, agency, and change to populations that lived in the past; and of disallowing people of the present to claim their heritage on their own terms.

Wendt, Carl (CSU-Fullerton)

[106] *Olmec Bitumen Procurement and Exchange: An Application of Ken Hirth's Distributional Approach*

An uneven distribution of raw materials (e.g., basalt, pigment, kaolin clay, bitumen) in the Olmec region has led some scholars to suggest that Olmec leaders controlled the sources of raw materials and regional trade, from which they derived their economic and political power. In this presentation, I consider to what extent bitumen procurement and exchange were hierarchically organized and controlled by regional elite through central pooling and re-distribution. I address this question using Ken Hirth's Distributional Approach, which provides a framework for evaluating commodity procurement and distribution. Specifically, I consider three bitumen-provisioning models: direct procurement, decentralized procurement and distribution, and centralized procurement and distribution. Using a combined biomarker and chemometric technique, we sourced 59 bitumen samples from residential, crafting, and ceremonial contexts at 10 Early and Middle Formative Olmec sites to locations in the Olmec region and to northern Veracruz and southern Tamaulipas. Results of the distributional analysis provide insights into the organization of bitumen procurement, and reveal the intra-regional movement of bitumen, shedding light on patterns of Olmec commodity exchange, intraregional relationships, and interactions. Finally, this analysis provides little evidence to support centralized procurement, centralized distribution, and elite control of bitumen procurement and trade.

Werness-Rude, Maline (Ventura College)

[231] *The Chocholá Style: Expanding the Corpus Part 2*

Chocholá style ceramics were part of a Late Classic northern Maya complex of luxury goods that identified the social status and political affiliation of their owners. Vessels in the style are distinguished by their deeply carved iconographic panels, distinctive formatting, and unique dedicatory formulae. Their recognizability—a necessary component of the sociopolitical messaging in which these vessels played a role—is due in large part to these characteristic features. The conventions that guided the formation of this set demonstrate flexibility, however; Chocholá potters experimented with many variations to the core style even as more distantly related outliers were also developed. It has been roughly 12 years since the most recent presentation of a Chocholá corpus, and in that time new examples have come to light through publication and presentation in museum display. In a previous paper, I showed that this iconographic expansion of the corpus demonstrates further variety in image selection even as standard formatting approaches remain relatively constant. In this paper, I will review the new hieroglyphic inclusions found within the expanded corpus. These texts, like the image-based additions considered previously, increase awareness of the variability inherent in the style even as they solidify core attributes.

Wernke, Steven [189] see Zimmer-Dauphinee, James

Wesolowski, Veronica [199] see Silva, Rosicler

Wesp, Julie (North Carolina State University), and Andreana Cunningham (Boston University)

[201] *Kindred Beings: Entwining Biodata of African Diaspora Populations in Latin America*

This paper explores how historical archaeology can integrate biological data to reconsider established narratives of the pathways of forced migration from specific regions in west and west-central Africa. Previous discussions tend to characterize migration of African diaspora populations solely within the context of

enslavement and from a unilateral perspective, yet archaeological and historical research shows that forced migration within the Caribbean, Central America, and South America is common, and occasionally there were opportunities for voluntary migration, especially if it meant gaining liberated status from rival colonial powers. In this paper, we discuss how research on biological relatedness elucidates a more complicated and intertwined history that flows in multiple directions and varies across time. These data also suggest that we must explore processes of racialization that are unique to each social situation, since Afro identity is not singular and biological data highlights instances of social stratification with groups that do not follow expected patterns. African diaspora populations in Latin America, while often siloed by perceived differences in language or culture, are connected through a more distant shared history that is embodied in their ancestors. This paper does not include images of human remains but does discuss the results of our bioanthropological research with human remains from Mexico, Barbados, St. Helena, and Cape Town, South Africa.

Wesp, Julie [85] see Soto Camacho, Alejandro

West, Bryan [108] see Stevenson, Freeman

Westfall, Madison, and Lila Jones (Museum of Texas Tech University)

[198] *Introducing Archaeological Bone Conservation to 11–12-Year-Olds at the Lubbock Lake Landmark through Conservation Academy: Digging Deeper*

The Lubbock Lake Landmark hosts two summer youth programs in the *Conservation Academy* series for students aged 11–12. *Digging Deeper* is a hands-on program where students are introduced to conservation principles and concepts and engage in conservation activities. During the two-week course, students participate in creating and excavating pedestals and jackets (usually bison bone), make conservation grade polyvinyl acetate solutions and adhesives, engage in methods of bone stabilization, and complete the documentation used when performing conservation techniques. Students conclude with a poster presentation of their results, conveying their newly learned skills to *Conservation Academy* attendees and parents visiting the exhibition. A five-question assessment is completed by each student to evaluate concepts learned throughout the program. Students scoring 80% or more on the assessment indicate that the conservation concepts were imparted successfully. Students graduate from the summer program with first-hand knowledge and budding skills in the conservation methodology used and the initial processing of field-generated collections at the Lubbock Lake Landmark, providing a foundation for higher-level concepts at an early age. The programming is an opportunity to explore future careers as museum professionals, archaeologists, or paleontologists in the fields of conservation and collections care and management.

Weyrich, Laura [215] see Wright, Sterling

Whaley, Aaron [340] see Higgins, Howard

Wheaton, Gene (Community College of Denver), and Michael J. Kolb (Metropolitan State University of Denver)

[336] *Finding Common Themes in the Post-1848 Historical Archaeology of Denver*

A remarkably small amount of historical archaeological research and excavation has been conducted within the City of Denver. This is due to what can best be summarized as a lack of interest in the historical origins of Denver and lack of community desire to preserve remnants of that history. All that changed in the 1970s when the threat of urban renewal was rapidly removing what was left of early Denver history and people realized that the need to preserve and protect historic resources was immediate. Current research in Denver has been shaped by these evolving processes at work on a national and international scale. A review of historical archaeological research in Denver highlights changes that have influenced opportunities and challenges in the way historical archaeology is conducted, and how it has emphasized the importance of a community-based approach focusing on human lives in distinct historical regions.

Wheaton, Gene [336] see Kolb, Michael J.

Wheaton, Gene [336] see McConnell, Ryun

Wheaton-Abraham, Jyl**[206]** *Decolonization and Discovery: Indigenous-Led Research Paving the Way in North Idaho*

The Kootenai Tribe of Idaho has called the northern Idaho panhandle home since time immemorial. Two hundred years of colonization reduced the Tribe to 64 members by the 1970s, and the Tribe is actively working to recover from the loss of lands, culture, and people. This effort includes collaborating with state agencies in the management of cultural resources and traditional use areas outside of tribal ownership. Since 2019, the author, a tribal member and archaeologist, has been working with the Idaho Transportation Department to realign Highway 95, which bisects several archaeology sites near McArthur Lake. In the spirit of decolonization, the author helped cultural resource contractors develop research questions informed by both traditional cultural knowledge and scientific methods. She recruited tribal members to work as monitors during construction and has been consulting with tribal elders to interpret cultural resources found during excavation. These efforts have led to the discovery of archaeological evidence far older than ever known in the northern Idaho region. This work exemplifies how partnerships between tribal and governmental entities, informed by decolonizing theory and led by tribal scientists, surpasses current anthropological and archaeological methods and can lead to a richer understanding about our collective history.

Wheelbarger, Linda [326] see Rospopo, Steven

Wheeler, Dean (Glendale College), and Molly Corr (Arizona State University)**[361]** *Spatial Micro-refuse Analysis: Understanding Plant Use and Management at a Classic Period Hohokam Trash Mound*

Trash mounds provide a unique opportunity for archaeologists to reconstruct past human behaviors. Previous work on Hohokam trash mounds has primarily examined macro-refuse—namely, larger ceramics, shells, animal remains, and stone tools. However, there lacks a more nuanced interpretation that could be explored with micro-refuse or artifact types typically measuring between 0.5 and 5 mm. Micro-refuse is a promising line of evidence for archaeologists due to its invulnerability to some disturbances, relevancy to spatial patterns, and higher quantity and denser accumulation patterns than its macro-artifact counterparts. This study investigates plant use at an early Classic period Hohokam trash mound at the site of AZ U:9:319(ASM) by examining micro-artifact types such as charred plant remains in conjunction with environmental DNA (eDNA). More specifically, this paper describes the methodology and results of spatial micro-refuse analysis of 44 soil samples. The distribution and density patterns of seeds and charcoal identified at the site is described. This paper aims to contribute to broader discussions of subsistence strategies and resource management in the greater Hohokam area.

Whelan, Mary [188] see Gilpin, Dennis

Whitaker, Adie [370] see Morgan, Christopher

White, Clifford (University of Wyoming), Briana Houghton (University of Wyoming), and Marcel Kornfeld (University of Wyoming)**[300]** *Artifact Distributions and Activity Areas: Interpreting the Folsom Living Floor at 48GO305*

High-resolution data detailing artifact distributions within the Folsom Cultural component of Hell Gap (48GO305) Locality I (HGI) are instrumental in investigating the lifeways of Paleoindian groups during the Late Pleistocene / Early Holocene. Analyzing artifact distributions at HGI allows researchers to identify and interpret discrete activity areas within the Paleoindian campsite. These analyses aim to achieve two critical reconstructions: (1) the reconstruction of individual activities occurring at specific temporal intervals, and (2) the reconstruction of patterns of repetitive activities, which manifest as distinct artifact arrangements in the archaeological record. Specifically, this research aims to explain the spatial organization of site activities, including stone tool production, meat processing, and the production of thermoregulatory technology, across distinct areas of the occupation surface. These findings also have the potential to enhance our ability to identify activity areas at sites that are degraded or lack clear delineation, offering valuable insights into Paleoindian site organization. Ultimately, this research contributes to a more nuanced understanding of the

spatial dynamics found within Paleoindian campsites and informs broader interpretations of past human behavior.

White, John (Texas A&M University)

[214] *Applying Late Pleistocene Archaeological Discovery Models in Southern Alaska: Shorelines, Paleoenvironments, and Predictions from Hinchinbrook Island, Prince William Sound*

The origins of the First Americans have been debated by archaeologists for decades. As increasing evidence emerges supporting the Coastal Migration Theory, greater interest has been directed at the sparse and enigmatic Late Glacial archaeological record of the Northwest Coast. Recent discoveries have demonstrated that, contrary to long-held belief, the Northwest Coast does preserve Late Glacial cultural materials. The challenges to locating such materials, however, are immense given the rugged, dynamic terrain and thick coastal rainforest ecosystems of the region. To overcome these challenges, researchers have developed innovative techniques to create localized predictive models informed by paleoenvironmental proxies using geographic information systems (GIS). The success of these predictive models has led to calls for the adoption of similar processes, dubbed Late Pleistocene Archaeological Discovery Models, throughout the broader Northwest Coast. Here I present the results of my own efforts to reconstruct the paleoenvironment and ancient landscape of Hinchinbrook Island, southern Alaska, and create my own predictive model to facilitate the discovery of a preserved and accessible Late Glacial archaeological record in Prince William Sound. I will further discuss the success and the modifications I found it necessary to make when applying the Late Pleistocene Archaeological Discovery Model in southern Alaska.

White, Joyce (University of Pennsylvania Museum), Marie-Claude Boileau (University of Pennsylvania), Helen Lewis (University College Dublin), Souliya Bounxaythip (Department of Heritage, Laos), and Thonglith Luangkhoth (Department of Heritage, Laos)

[61] *New Dates from Luang Prabang and Some Implications for the Culture History of Northern Laos*

The Middle Mekong Archaeological Project (MMAP) has investigated the archaeological record of Luang Prabang Province in northern Laos following an initial exploratory visit in 2001. A variety of research endeavors have since been undertaken, including surveys, test excavations at four cave/rockshelter sites, paleoclimate research, and post-excavation studies. As can be expected for a research program in an under-investigated part of the world, data have emerged that have expanded understanding in new, unanticipated directions. For example, unpublished dates are associated with features and earthenware ceramics with possible links to the Plain of Jars phenomenon in northern Laos that imply an early historic period placement, which is more recent than previously proposed. These associations suggest that earthenware was produced into the historic period, and in fact the middle Mekong region currently has both earthenware and stoneware production localities. This paper will present these data, current interpretations, and how our research design explores emerging implications with expanded attention to ceramics. *** **Images of some mortuary features include human remains.**

White, Joyce [49] see Hamilton, Elizabeth

White, Lloyd [174] see Gliganic, Luke

White-Gonzales, Christa (Idaho National Laboratory), and Jennifer Finn (Bureau of Land Management)

[372] *Wetlands and Watersheds: Folsom in Idaho*

In this paper, we present the most up-to-date dataset of Folsom points in Idaho, the results of X-ray fluorescence analysis on obsidian specimens from the region, and the environmental settings that appear to have been attractive during the Younger Dryas Chronozone (YD). Archaeological surveys and publications have documented at least 47 Folsom locales in the region, most of which appear to fall within the Terreton Basin. Existing paleoclimate data suggest that the Big Lost River and Lake Terreton hydrographic system would have remained a productive wetland, despite a significant drop in lake levels between 15,000 and 12,900 cal BP. While Clovis points have been recovered from southern Idaho, their density is significantly lower than the occurrence of Folsom technology, suggesting that human occupation expanded in the region

immediately following the onset of the YD. Cooler, wetter conditions during this period also likely prompted the expansion of bison herds. Although investigations are ongoing, the data currently suggest that the people utilizing Folsom technology were well acquainted with the area, its landforms and its resources, including local toolstone.

White-Gonzales, Christa [372] see Finn, Jennifer

White-Gonzales, Christa [372] see Henrikson, L. Suzann

Whitley, Catrina [385] see Stodder, Ann

Whitley, David, Jd Lancaster (Desert Research Institute), and Andrea Catacora (ASM Affiliates)

[107] *Beyond Geographical Correlation in Ritual Landscape Studies: Archaeological Test of an Ethnographic Model based on Ontological Beliefs about Landscape*

Ritual landscape studies have been bedeviled by confusions of correlation with causation. Rock art sites in the North American desert west, for example, are often said to signal the locations of water, because the sites are (sometimes) found at springs. But this is a clear confusion of correlation with causation: anyone with desert experience can better identify water sources, from a distance, by vegetative vigor, eliminating the need for and logic of rock art motifs as signposts. We use a previously published ethnographic model of the ontological beliefs that structure ritual landscape perceptions to examine three rock art site localities in the southern Mojave Desert, California. This model identifies a series of specific landforms and locations of certain geophysical events as places thought especially imbued with supernatural knowledge-power and thus appropriate for ritual. Our three localities all conform to the expectations of this model, thereby both verifying its archaeological value and suggesting avenues for future predictive modeling in research and heritage management contexts, an especially great need now that renewable energy development is quickly turning the Mojave into a rural-industrial landscape.

Whittaker, John [234] see Pettigrew, Devin

Whittemore, Anna (Cornell University)

[343] *Defining a “Good Candidate” for Skull Surgery: A Comparison of Cranial Fractures with and without the Trepanation Treatment in the Ancient Andes (ca. 500–1000 CE)*

Trepanation—creating holes in the cranial vault by boring, scraping, or cutting—has been documented archaeologically in numerous societies worldwide, but it is best-studied in the prehispanic Andes. Early research on trepanation, conducted by Ephraim George Squier and later expanded on by Julio C. Tello, was crucial to establishing that ancient Andeans prioritized care and practiced sophisticated, effective health treatments. The best-supported and most widely accepted interpretation of trepanation posits that it treated traumatic head injuries by relieving intracranial pressure caused by swelling in the brain—yet most cranial trauma was *not* treated with trepanation. We ask: What constituted a “good candidate” for trepanation as a treatment for cranial fracture? Using a sample of 611 individuals from the Middle Horizon (ca. 500–1000 CE) in the south-central Andes, our preliminary findings identified 186 individuals with some form of cranial trauma, but only 43 of these individuals (23%) exhibited trepanation. The group with both fractures and trepanation skews older and more male with a higher rate of cranial vault modification than the group with fractures alone, and this study will further explore how fracture type, dimension, and location contributed to the likelihood that it would be treated with trepanation. *****This presentation will include images of human remains.**

Whitten, Ashley (University of Kentucky), and Geoffrey McCafferty (University of Calgary)

[228] *Using Stable Isotope and Dental Analysis to Discuss Precontact Period Diet and Migration in the Greater Nicoya Region of Nicaragua*

Ethnohistoric accounts from conquistadors in Pacific Nicaragua detail both the prevalence of maize as a part of the general diet of Native peoples, as well as the stories of migration from the Mesoamerican Chorotega- and Nicarao-speaking peoples into the region. Archaeologists have since used these accounts to frame

excavations and interpretations of various archaeological sites. The Chorotega are presumed to have migrated around 800 CE and the Nicaraos around 1350 CE, beyond the original peopling of the region. Due to issues with dating sequences during the later archaeological periods, the focus of the present analysis is on the first assumed external migration of the Chorotegan speakers into Pacific Nicaragua around 800 CE. Archaeological data does not currently support the consumption of maize or the mass migration of peoples into Pacific Nicaragua from Mesoamerica during the assumed period. This poster focuses on the results of stable carbon, nitrogen, and oxygen analyses from the dentition of multiple individuals and the osteological analysis of dentition to discuss evidence of maize consumption and potential indicators of migration.

Whittenburg, Aaron (Metcalf Archaeological Consultants)

[179] *Hunting above the Clouds along Colorado's Continental Divide: Results and Analysis of the James Peak Wilderness Archaeological Project*

The James Peak Wilderness Archaeological Project was a collaborative project between Gilpin Historical Society and Metcalf Archaeological Consultants and funded by two History Colorado-State Historical Fund archaeological assessment grants. The James Peak Wilderness Archaeological Assessment and the James Peak Wilderness Sub-Alpine Basin Archaeological Assessment explored the Precontact Indigenous use of the alpine and sub-alpine regions surrounding James Peak along the Continental Divide, specifically focusing on the use of alpine communal hunting sites and related sites. Between fall 2019 and spring 2022, Metcalf archaeologists and volunteers conducted survey near James Peak and the adjoining sub-alpine cirque basin at the head of Mammoth Gulch and recorded a total of six new precontact Indigenous sites, including three alpine communal hunting sites, two lithic scatters, and one open camp. This project integrates into wider research efforts in the region addressing the occupation and use of the alpine and sub-alpine areas as mutually inclusive landscapes and demonstrate a diversity of cultures and lifeways of Colorado's original Indigenous occupants utilizing the Colorado Front Range Mountains. This project also emphasized public involvement, education, and outreach, and included volunteer involvement in surveys, professional and public presentations, and the use of social media platforms to reach more diverse audiences.

Whittington, Stephen

[343] *A Burden to Others? Burial 39-C from Iximche', Guatemala*

An adult female from the elite part of the Late Postclassic Highland Maya site of Iximche', Guatemala, had a jade pendant buried with her and was near another person buried with a gold necklace. She had extensive osteoporosis, a collapsed thoracic vertebra, a healed periosteal reaction, osteoarthritis throughout her body, and septic arthritis of her elbow, scapula, and hip. Her dentition featured caries, an abscess, heavy calculus deposits, alveolar resorption, and tooth trauma. Other potentially significant aspects include that her cranium was artificially modified, she had congenital absence of a tooth, and some of her bones had been exposed to fire. It is unlikely that this elite woman could have survived to her estimated age of 45–59 years old without significant intervention and care by others. *****This presentation will include images of human remains.**

Wholey, Heather (West Chester University)

[99] *Curriculum Matters: Climate, Next Generation Science, and Classroom Engagement*

Often when we envision the future of archaeology, particularly archaeology education, factoring in and keeping up with new and advanced field and lab technologies spring to mind. At the same time, traditional archaeology education (e.g., material culture, chronology, spatial analysis) must continue to address general education standards such as logic, critical thinking, and communication, while also delivering foundational approaches for investigating the past through the archaeological record. Additionally, students today need to be equipped to make connections between formal learning and real-world applications to current pressing topics—the climate crisis and equity and justice issues for example. The teacher scholar model has long been at the center of engaged learning by emphasizing evidence-based teaching and collaborative and reflexive practice. This presentation will discuss strategies for bringing climate into archaeology education for learners at all levels by engaging next generation science standards through the teacher-scholar framework and real-world case studies.

Wichlacz, Caitlin, and Brandi MacDonald (Archaeometry Laboratory, University of Missouri Research Reactor)

[171] *Slips and Lasers: Characterizing White Slip Clays on Salado Polychrome Ceramics from the Phoenix Basin of Arizona Using LA-ICP-MS*

Salado polychrome pottery (Roosevelt Red Ware) was produced in numerous locations across the American Southwest between ca. 1300 and 1450 CE. In this study, we use laser ablation–inductively coupled plasma–mass spectrometry (LA-ICP-MS) of white slip clays on Salado polychrome pottery from the Phoenix Basin of Arizona, paired with the results of recent neutron activation analysis (NAA) of body clays from the same vessels, to explore the possibility that multiple networks of interaction may be reflected in the materials used in their production. White slips are essential in Salado polychrome production, but only certain clays afford the necessary material characteristics to successfully create these wares. NAA results indicate local production of Salado polychromes within the Phoenix Basin, but white clays are not common in the local geology and were not among the materials used by the region’s Hohokam/Ancestral O’odham inhabitants in their pottery making prior to ca. 1300 CE when Salado polychromes first appeared in the area. Our examination of these specialized raw materials adds new depth to understandings of the social and material dimensions of Salado polychrome production and the nature of the Salado phenomenon as it was realized in different regions of the US Southwest.

Widdecke, Cheyenne [346] see Pitblado, Bonnie

Widga, Chris (Penn State University)

[280] *The Dead Elephant’s Guide to Pleistocene North America*

The last few decades in the Quaternary sciences have seen impressive leaps in the development of novel tools and techniques, as well as excellent examples of interdisciplinary research in pursuit of archaeological objectives. From ancient DNA found in skeletons and sediments to an almost dizzying variety of stable isotope systems that tell us about diet, seasonality, and mobility of individual animals over decades of life. These methods have the potential to offer new insights into old problems. Proboscideans (mammoths, mastodons, and gomphotheres) are among the most widespread and common members of the Pleistocene megafauna. They also represent the most unambiguous associations between megafauna and humans. As such, they provide a unique perspective on late Pleistocene ecosystems, including those occupied by human groups. This review will explore the implications of this new synthesis of proboscidean taxonomy and paleoecology for models of Paleoindian subsistence and megafaunal extinctions.

Widga, Chris [88] see Barker, Kristin

Wieckowski, Wieslaw, Milosz Giersz (University of Warsaw), and Patrycja Prządka-Giersz (University of Warsaw)

[333] *Care and Power: Craftsmanship and Wari Elites Dynamics: A Case from Castillo de Huarmey, Peru*

The recent discovery of the tomb of the Master Basketmaker within the Gallery of Elite Craftsmen, located in the nearest vicinity of the imperial Wari tomb at the site of Castillo de Huarmey, Peru, presents an exceptional opportunity to analyze the interplay between different tiers of elites, particularly in the context of the presence of disabled members. Due to the significant physical limitations, the Basketmaker was unable to exist independently and thus had to rely on the assistance of others. Simultaneously, the assisting party leveraged the artisan’s skills, affording him the status of a member of the elite or circles closely associated with the elites of the Wari Empire. This discovery possibly exemplifies the comprehensive care extended to members of society in exchange for their craftsmanship skills essential to the Wari Empire’s highest elites. This issue will be addressed on a broader scale, incorporating more contexts from the site. *****This presentation will include images of human remains.**

Wiewel, Adam, and Steven De Vore (National Park Service [Retired])

[225] *A Brief History and Future Prospects of the National Park Service’s Annual Archeological Prospection Workshop*
Since 1991, the National Park Service has offered a week-long series of lectures and field exercises aimed at promoting the use of ground-based geophysical, aerial, and other remote sensing methods within

archaeology. The workshop was originally created to address the lack of formal training opportunities in archaeological remote sensing. Over time, the workshop has evolved as the expertise of its instructors has grown and remote sensing methods have developed, making it more suitable to meet the changing needs of participants. The workshop's longevity is largely due to its reliance on experienced practitioners, equipment manufacturers, and software developers, who volunteer time, equipment, and software to offer the invaluable training. Over 1,000 participants from diverse backgrounds, including avocational archaeologists, undergraduate and graduate students, university professors, cultural resource management professionals, tribal representatives, and others, have attended the workshop, leading to a sizable community of users and supporters of remote sensing technologies in archaeology. Besides covering the workshop's history, we will share our thoughts regarding its strengths and shortcomings, relying on feedback from participants, and discuss what we see as its prospects for continued relevance in the future.

Wigen, Rebecca [240] see Letham, Bryn

Wigley, Sarah (CAR-UTSA), Raymond Mauldin (CAR-UTSA), Leonard Kemp (CAR-UTSA), and Jason Perez (CAR-UTSA)

[300] *XRF Analysis of Residue from a Late Early Archaic Thermal Feature at Lyndon B. Johnson National Historical Park in Gillespie County, Texas*

From 2021 through 2023, the Center for Archaeological Research at the University of Texas at San Antonio (CAR-UTSA) in consultation with the Intermountain Regional Archaeology Program of the National Park Service (NPS) conducted survey and subsequent testing at the Lyndon B Johnson National Historical Park in Gillespie County, Texas. One of the sites tested during the project was 41GL317, a site that contained an abundance of burned rock features, several of which dated to the end of the Early Archaic and the beginning of the Middle Archaic periods. The subject of this poster is Feature 16, a thermal feature that returned a median radiocarbon date of 6716 cal BP. This feature was distinguishable from the other burned rock features excavated in several ways, including the presence of an unusual, multicolored powdery residue on the individual rocks. CAR collaborated with UTSA's Department of Earth and Planetary Sciences to conduct X-ray fluorescence analysis of these residues. This poster presents the results of that analysis along with comparison to other features. We then explore the implications of these analyses for the potential function of Feature 16 and associated activities that may have been carried out by the inhabitants of the Park.

Wilkie, Laurie [343] see Kinkopf, Katherine

Wilkin, Shevan, and Jennifer Miller (Southern University of Science and Technology)

[69] *Proteomics of Symbolic Objects*

Proteomic analysis applied to ancient materials presents a novel method for investigations into past human-animal-plant interactions and can shed light on both the taxonomy and tissues of recovered proteins from archaeological residues. We analyzed 85 samples from residues from symbolic objects from South Africa, Kenya, and Malawi, highlighting differences in biomolecule preservation across varied environments while recovering human, animal, and plant proteins. Here we share our results from historic and archaeological residues (OES beads, pigment stained marine shells) in order to determine the types of organic materials used during the everyday lives of past people, including those from plants and animals, as well as those from the humans wearing or otherwise in contact with the artifacts. Our results provide information about megafaunal interactions, the introduction of domesticated ruminant herds, and everyday human activities that would be challenging, if not impossible, to discover with traditional archaeological methods.

Wilkinson, Keith [82] see Gill, Jayson

Wilks, Stefania (University of Utah), and Lisbeth Louderback (Natural History Museum of Utah, University of Utah)

[126] *Geophytes, Starch Granule Analysis, and Human Behavior in the Northern Great Basin, North America*

Geophytes have been a crucial, energy-rich food source for Indigenous peoples in the northern Great Basin, playing a vital role in their diet, culture, economy, and environmental management practices. Beyond mere

sustenance, geophytes hold profound cultural significance and reflect sophisticated ecological knowledge and adaptive strategies. In southern Oregon's Fort Rock Basin, evidence suggests the use of geophytes became widespread during the late Holocene, marked by large village sites with numerous ground stone tools. This shift is thought to have resulted from increased population density and heightened aridity, driving communities to higher elevations to utilize a broader range of plants, including geophytes. Evidence of geophyte use in early Holocene sites is limited to indirect signs like site distribution and flaked tool types; taxonomic evidence remains nonexistent. Starch granule analysis offers a more precise method for identifying specific plants processed and consumed by ancient peoples. This project tested the spatial and temporal breadth of geophyte exploitation by analyzing starch residues on 109 ground stone tools from 10 early, middle, and late Holocene archaeological sites in both upland and lowland areas. These data will clarify the role the geophytes play in human settlement and foraging patterns in the northern Great Basin over the last ~13,000 years.

Willerslev, Eske (University of Copenhagen)

[339] *The Ancient Environmental Genomics Initiative for Sustainability (AEGIS)*

During this talk I will introduce the Ancient Environmental Genomics Initiative for Sustainability (AEGIS) aimed at accelerating and delivering new strategies for developing resilient crops and agricultural systems and hence mitigate the risk of a human food crisis in the face of climate changes. This ambitious goal will be accomplished by combining fundamental research with applied plant and cropping sciences. Through studies across a timespan of millions of years and across the globe, in which climates have changed repeatedly, AEGIS will uncover how organisms have responded to these changes both at the species level, via natural selection, and at the ecosystem level, through organismal interactions and rearrangements. Each climatic cycle involved novel genetic and organismal configurations not seen since. The talk will cover the rationale behind AEGIS, introduce the Environmental DNA and Ancient DNA that constitute the methodological backbone of AEGIS, and showcase how we can use the vast record of organismal and ecosystem responses to climate changes to provide targeted solutions for the agricultural industry.

William da Cruz, Francisco [121] see Chim, Eliane

Williams, Emily [99] see Dongoske, Kurt

Williams, Katharine (University of New Mexico)

[375] *Revisiting Dendro Data at Betatakin and Keet Seel, Navajo National Monument*

Tree-ring data have traditionally been used to study past climates and to establish detailed site construction sequences, particularly when paired with architectural analyses aimed at understanding wall bond-and-abutment patterns. In addition to climatological and temporal information, however, tree-ring data often indicate choices that builders make during construction. Tree species, beam preparation practices, and even the orientation of beams upon installation all reflect the way that builders conceive of roofs as elements in the production of architecture. Building on the work of Dr. Jeffrey Dean, this contribution focuses on understanding how roof construction reflects builder choices at the Kayenta communities of Betatakin and Keet Seel, located in present-day northeastern Arizona. Specifically, I examine roof construction practices between and within households in order to help understand the organization of architectural labor during the Tsegi Phase (AD 1250–1300) occupation of the alcoves.

Williams, Katharine [55] see Coffey, Grant

Williams, Katharine [55] see Ryan, Susan

Williams, Mark [50] see Thompson, Victor

Williams, Nancy (University of Tulsa), Miriam Belmaker (University of Tulsa), Flavia Strani (University of Zaragoza), and Briggs Buchanan (University of Tulsa)

[190] *Paleoecology of 'Ubeidiya: Deer Dental Microwear Patterns and Implications for Out of Africa I*

Re-creating past environments is a useful tool in understanding the adaptation and behaviors of human

ancestors. To reconstruct the paleo-environment of 'Ubeidiya, a site for migrating hominins during out of Africa I, environmental proxies were examined. Specifically, the vegetation of the site was reconstructed using the dental remains of ungulates and compared to additional paleo-environmental proxies of the region. Findings were then interpreted using behavioral analysis and Risk Theory.

Williams, Reylinne (Gila River Indian Community)

[43] *Tribal Engagement Best Practices: Lessons from Arizona and New Mexico*

Tribal consultation is more than just a check box; it is about engaging through government-to-government relationships with Native American Tribes. Engaging with Tribes involves communication, collaboration, and coordination that will build and strengthen your relationships. Tribal consultation is going beyond the government-to-government interactions with Native American Tribes to include private entities and organizations. Bridging the gap between federal government, state government, private entities, and organizations through tribal engagement may vary from state to state and tribal nation to tribal nation. Identifying the process for tribal engagement is key to manifesting how you can deepen your relationships with Native American Tribes. Before you check that tribal-consultation box, ask yourself these questions: How is my organization engaging with Native American tribes? What can I do to improve tribal engagement within my organization? How you answer these questions should come from within your tribal consultation policy. The amount of effort put into tribal engagement will lead to either a successful or unsuccessful tribal consultation results. This presentation will share examples of successes and challenges through tribal consultation and the importance of tribal engagement. The presentation will also outline the current trends of tribal consultation policies and how to create space for tribal engagement.

Williams, Sloan [288] see Witt, Kelsey

Willis, Hannah [333] see DeGaglia, Cassandra

Willis, Mark (Flinders University), David Michael Rachal (Tierra Vieja Consulting), and Robert Dello-Russo (University of New Mexico)

[53] *How Did the Seeds Get There? Ruppia cirrhosa Ecology, Depositional Context, and Accurate Radiocarbon Dating at White Sands*

The stratigraphic and geomorphic contexts, and ultimately the chronometric determinations, at White Sands Locality-2 (WHS-2) are topics of controversy that stem from conflicting interpretations of the processes that deposited the *Ruppia* seeds within the paleo-Lake Otero footprint site. Some studies have characterized the eastern shoreline as a stable lake margin where *Ruppia* plants grew in situ in shallow water. In contrast, our interpretation depicts the shoreline as an unstable, dynamic lake margin to which *Ruppia* seeds, impacted by the hard water effect, were transported from deep-water, offshore growth beds during storm events and deposited on the lake shore in seed balls. These unusual aggregates, known to mix seeds of wide-ranging ages, were gradually broken apart by several cycles of wave action and erosion and redeposited in layers. At WHS-2, other researchers have claimed to focus their radiocarbon dating solely on seeds from layers and not from seed balls, ostensibly to avoid mixing issues. Yet, how do they know that the seeds they dated did not come from disaggregated seed balls? In this presentation, we will delve into both the ecology and the depositional context of *Ruppia* and discuss why the seeds at paleo-Lake Otero are problematic materials for radiocarbon dating.

Willis, Mark [291] see Loendorf, Lawrence

Willis, Mark [92] see Stowe, Michael

Willison, Megan (National Park Service)

[202] *Fremont Archaeology in Dinosaur National Monument*

Dinosaur National Monument, situated in northeastern Utah and northwestern Colorado, is home to over 1,000 documented archaeological sites and has been the source of archaeological survey and excavation efforts for the past 80 years. Many sites within the monument date to the Fremont era (300–1300 CE) and include rock art, habitation, and special use sites. This presentation will provide an overview of archaeological

research related to the Uinta Basin Fremont within the monument boundaries and provide data on the distribution and types of sites that have been recorded thus far.

Willmes, Malte [207] see Eubanks, Jill

Wills, Chip [320] see Hamilton, Marian

Wilson, David [183] see Puckett, Neil

Wilson, Gregory (University of California), Dana Bardolph (Northern Illinois University), and Amber VanDerwarker (University of California, Santa Barbara)

[102] *Big Bangs, Cosmic Connections, and Other Pauketatian Perspectives on Illinois Valley Archaeology*

Over the course of his career, Timothy R. Pauketat has made many groundbreaking contributions to precolonial North American archaeology. In this paper, we explore the implications of three of his most prominent contributions for understanding the Mississippian occupation of the Illinois River Valley in west-central Illinois, highlighting how his theoretical approaches have informed our work in the region. We begin with a focus on Pauketat's early political economic research, which defined the regional parameters of Cahokia's rapid consolidation around AD 1050 (famously dubbed the "Big Bang"). We then explore the themes of agency, identity, and tradition that Pauketat later showcased in his research on migration. We end by considering his most recent research on the archaeology of religion. Together, these Pauketatian perspectives have offered us rich, nuanced frameworks for reconceptualizing the Mississippian occupation in the Illinois Valley, and beyond.

Wilson, Kathleen (University at Buffalo)

[390] *Reconstructing Sites: Exploring Christianization of Early Medieval Scotland through Agent-Based Modeling*
[WITHDRAWN]

Wilson, Melissa [339] see Stone, Anne

Wilson, Nathan [344] see Ossa, Alanna

Wilson, Stuart [322] see Petras, Elysia

Wilson Norwood, Beth (University of New Mexico)

[180] *The Use and Function of Narrative Ceramics in West Mexican Visual Traditions during the Late Formative-Early Classic Periods*

Evidence of visual communication in West Mexico during the Late Formative and Early Classic periods (ca. 300 BCE–500 CE) is predominantly found in smaller solid figurines, larger semi-hollow or hollow figures, and multi-figure tableaus. My research shows that this ceramic tradition depicts a limited number of themes or narratives important to West Mexican cultures. Like other forms of visual communication in the Americas, this ceramic tradition was likely activated through performance. This study seeks to understand this phenomenon. Determining how figurines, figures, and multi-figure tableaus functioned requires an analysis of the contexts in which different types of ceramic artifacts were found. Unfortunately, most West Mexican figures were looted and lack this information, with looters often claiming to have taken ceramic sculptures from shaft tombs. As a result, discussions of the West Mexican ceramics have focused on their use in mortuary ritual. Archaeological excavations have unearthed ceramic figurines and multi-figure sculptures in other contexts such as ballcourts, on and in guachimontones, and in residences. This presentation features an analysis of the locations in which West Mexican figurines were found as a means to understand the ways this ceramic tradition functioned.

Windes, Thomas (University of New Mexico), and Carla Van West (Retired)

[375] *Tree-Rings beyond Chronology: Puebloan Silviculture, Wood Procurement, and Wood Placement*

Mindful identification and description of wood used in building construction suggests Ancestral and Historic

Puebloans were discriminating consumers of arboreal resources. Using data gathered from Chacoan great houses and historic Pueblo buildings, we present evidence that indicates meaningful selection of wood species, pre-planned procurement and preparation of roof beams and lintels, and contrasting styles of wood use are observable in the archaeological and historical record. We argue these data are potentially interpretable and add fascinating detail on human behavior embedded within structural timber.

Windle, Morgan, William Taylor (CU Museum of Natural History), Julia Clark (Nomad Science), and Henny Piezonka (Free University Berlin)

[54] *Exploring Modern Reindeer Herding Systems in Northeast Asia: Tracing Multispecies and Domestication Processes*

Across northern Eurasia reindeer have helped shape the complex sociocultural fabrics of hunter-fisher societies. Descendant communities co-create entwined multispecies lifeways through symbiotic relationships with the subarctic boreal ecosystem. Within this system, an intimate partnership exists between domestic reindeer that retains aspects of mutualism and symbiosis and lacks certain common interventional and control features of animal domestication. Despite being a keystone species in the Eurasian north, however, their domestication lacks secure archaeological chronologies and time-depth. As techniques of investigation improve along with new narrative potentials, other animate beings that co-construct domestic animal systems should be considered, beyond bilateral relation dynamics. Through collaboration with modern reindeer herding communities in West Siberia and Northwest Mongolia, we explore a range of dynamics and tools for understanding reindeer domestication: how synanthropic insects can impact reindeer herding lifeways and how many of these multispecies practices can be traced through reindeer diets using stable isotope analysis. We demonstrate how expanded multispecies considerations, biomolecular tools, and conceptual parameters have important implications for shaping the unique niche construction activities essential to herding reindeer, and by extension their domestication in Northeast Asia.

Wingfield, Laura (Kennesaw State University)

[315] *Digging Armadillos: Exploring Burier Effigies of Costa Rica and Panama*

The Bribri of eastern Costa Rica believe shamans, pregnant women, and buriers hold the power to open the portal between the earthly realm and the land of the spirits. The last of these, buriers or “morticians” in contemporary lingo, are often associated with scavenging animals such as the armadillo, known as a digger. Ancient art, most often in clay, from southwestern Nicaragua through northwestern Costa Rica down to southern Costa Rica and into Panama, attests that humans, seemingly male and often appearing as a hybrid armadillo-human, have held such a role for millennia. That these effigies were most often crafted from rich volcanic clay dug out from the ground, home to the spirits of the deceased and the First Mother/Grandmother, suggests their makers intended for the medium to be a key component of the message: with the help of a digging specialist one’s spirit may return to the earth upon death. The round vessel forms of most of these ceramics further push the message of the cycle of life. The variety of such images suggests shared understanding of this key character across the centuries in this Isthmian expanse.

Winnicki, Liv

[220] *Mermaid Figurines on a 1950s Diné Homestead*

This paper presents a thought experiment relating to the numerous mermaid figurines found on a 1950s Diné homestead in Crownpoint, New Mexico, employing methodologies traditionally used in the study of Venus figurines from the Upper Paleolithic period. By juxtaposing these mermaid figurines with Venus figurines, prehistoric with modern contexts, I work to explore classic archaeological hypotheses on the symbolic, cultural, and social dimensions of figurines. The 1950s provide a crucial lens through which to view the complexities of these artifacts. This period is defined by cultural revival, political activism, economic challenges, and the impact of federal policies. The presence of mermaid figurines, seemingly anachronistic within traditional Diné culture, invites a reexamination of our assumptions about figurine objects in prehistory. This analysis reveals how recent historical contexts can complicate and enrich our understanding of the past.

Wintch, Kenny [362] see Duwe, Samuel

Winter, Margaret (University of Notre Dame), Alyssa Miulli (University of Notre Dame), Edward Stech (University of Notre Dame), and Donna Glowacki (University of Notre Dame)

[188] *Preliminary Findings: The Coyote Village Pottery Project, Mesa Verde National Park*

Coyote Village (5MV820) is a 35-room pueblo with five kivas, one tower, and an enclosed plaza that is part of the Far View Community (750–1250 CE) on the Mesa Verde Cuesta in the Northern San Juan region. In 1968 and 1969, CU-Boulder field schools directed by Robert Lister completely excavated all structures and also seven test trenches on the south and east sides of the pueblo. However, the analysis of the pottery recovered from this site has never been reported. The Coyote Village Pottery Project (CVPP) is a long-term effort to analyze the complete assemblage obtained during these excavations. This poster introduces the CVPP and presents preliminary analysis of pottery from the northwest portion of Coyote Village including several rooms and one kiva (Kiva D). Results reveal patterning in the distributions of vessel types, form, and design, as well as information about pottery production and acquisition through compositional analyses that inform on social changes within the pueblo.

Winzenz, Karon (University of Wisconsin, Green Bay)

[295] *Bundles and the Maize God*

My master's thesis focused on sacred bundles and rituals depicted on Maya ceramics of the classic period. I am indebted to Justin Kerr and his Maya Vase Database. I studied bundles in both sacred and quotidian contexts. Today I discuss mythological scenes in which bundles are associated with the Maize God and his sons, the Hero Twins.

Wisher, Isobel [156] see Schwendler, Rebecca

Wisner, Meredith (Salt Lake Community College), Cerisa Reynolds (Aims Community College), Chris Merritt (Utah State Historic Preservation Office), and Elizabeth Hora

[87] *Chew, Chew: The Zooarchaeology of a Twentieth-Century Railroad Depot in Ogden, Utah*

In 1979 and 1980, archaeologists at Weber State University conducted excavations at the historic site of Fort Buenaventura in Ogden, Utah. Beyond a few posts, the excavations yielded few pieces of Fort Buenaventura's history but did uncover a rich archaeological legacy related to the adjacent Union Pacific railroad depot from the 1880s to 1940s. Since the 1860s, Ogden has been a hub for railroad traffic and operations, and artifacts uncovered over 40 years ago tell a story of the decadent life of railroad dining as evidenced by serving ware, food and beverage bottles, and thousands of animal remains. Now scholars from the State Historic Preservation Office, Salt Lake Community College, and Aims Community College are turning their attention to the faunal assemblage and historical records to better understand what types of meat were on the railroad's menu in the early twentieth century. Zooarchaeological analyses of species identification and butchery practices have unveiled details about meat transport, processing, consumption, and disposal, demonstrating the value of reexamining curated collections.

Witmore, Christopher (Texas Tech University)

[168] *One Square Mile of Rural Ruin*

What becomes of rural countryside in the aftermath of common agrarianism varies greatly across the southeastern United States. The new cities that take shape in those economically favored zones of urban development bear little resemblance to the contemporary rural that emerges in areas far removed through their geographical distance. The sense of loss and diminished opportunity that besets the ruined rural takes on different contours when that countryside surrounds one's childhood home. Addressing matters of entropy, change, memory, and time, this paper explores one square mile of erstwhile farmland in Scotland County, North Carolina, from both a personal and archaeological perspective. Contemplating those casualties of ongoing acceleration that has left these lands behind, it provides an archaeological snapshot of contemporary rurality and home beset by ruin and oblivion.

Witt, David (GeoVisions)

[108] *Dams, Turbines, and Solar Panels (Oh My!): The Push for Green Energy and Its Impact on Cultural Landscapes*
Industrial-scale solar, wind, and water power-generation projects often have an oversized impact on cultural

resources. These projects, which may stretch over thousands of acres, can damage or destroy entire cultural landscapes, and existing regulations and policy do not adequately address these impacts. This inadequacy is twofold. (1) These projects are landscape in scale, rather than site based. As such, these projects should be addressed at such a landscape scale, rather than piecemeal, and by using landscape theory. To do so otherwise risks destroying the interrelationships inherent within cultural landscapes. (2) The discussion of cultural landscapes requires the respectful and active inclusion of multiple worldviews beyond mere lip service. These multiple ontologies are not necessarily exclusionary; by definition the process of colonization witnessed the interplay and mutual transmutations of Indigenous and settler relationships with the land. Neither of these statements are groundbreaking; we have discussed these topics for decades now. However, archaeology continues to fail when confronted with these issues. This paper will discuss examples where archaeology, when conducted according to the “standard” CRM regulatory model, has resulted in harm to sites and Indigenous communities, and conversely, examples of cooperation that have served to protect both resource and community.

Witt, Kelsey (Clemson University), Susan Monge (University of Illinois, Chicago), Katherine Brunson (Wesleyan University), Sloan Williams (University of Illinois, Chicago), and Lisa Janz (University of Toronto, Scarborough)

[288] *Ancient DNA Analyses of Mongolian Aurochs Shows Connections to Ancient East Asian Cattle*

Taurine cattle were domesticated in the Fertile Crescent and introduced to East Asia over 5,000 years ago. Wild aurochs, the ancestor of domesticated cattle, were also present in East Asia during the introduction of domesticated cattle. It has been suggested that East Asian aurochs show some evidence of human management and may have interbred with taurine cattle, but genome-wide data from East Asian aurochs has thus far been limited. Here, we sequence low-coverage genomes of 23 ancient Mongolian bovines to assess whether wild aurochs admixed with ancient taurine cattle and determine whether ancestry from Mongolian aurochs can be found today in living cattle. Mongolian individuals postdating the arrival of taurine cattle to East Asia show evidence of admixture, with taurine cattle mitochondrial genomes. We also observe genetic relatedness between Mongolian aurochs and early domesticated cattle from China. However, there is very little East Asian aurochs ancestry in modern East Asian cattle, suggesting that this ancestry was lost over time. Future work in additional cattle populations in Mongolia and elsewhere in East Asia will further clarify the demographic history of East Asian cattle.

Witt, Rachel

[343] *The Intersection of Ritual Violence and Disability in the Chimú Empire: A Bioarchaeological Study of Human Sacrifices in the Moche Valley on the North Coast of Peru*

Scholarly interest in disability and care within bioarchaeology has grown significantly in recent decades. The application of theoretical frameworks and cutting-edge techniques has enabled scholars to shed light on how individuals with physical differences were perceived and treated across ancient societies in the Americas, Europe, and beyond. This research investigates the complex relationship between disability and state-sanctioned ritual violence (sacrifice) during the reign of the Chimú Empire (AD 1000/1100–1450/1470) in the Moche Valley on the north coast of Peru. Previous research indicates that sacrificial victims were generally in good health at the time of death. Several victims discovered at the sacrificial site of El Pollo in the Moche Valley, however, show congenital conditions. While these conditions may have affected the victims' mobility and autonomy, their bodily differences did not prevent their inclusion in this significant ritual performance. The context in which these individuals were found challenges modern cultural assumptions about disability, thereby requiring us to address the nuances of disability in ancient Andean societies. Ultimately, this research contributes to a growing body of literature that aims to explore the lived experiences of individuals who are often misunderstood and overlooked in bioarchaeological discourse. *****This presentation will include images of human remains.**

Woehlke, Stefan (University of Maryland), and Justin Mohammadi

[340] *Getting Out of the Hole and Off the Ground: Starting a Collaborative Community Heritage Project from Scratch as Outsiders*

The North Brentwood Community Heritage Project developed out of a conversation in December 2019

between one of the authors and a town councilmember. Work on the project finally began with digital documentation work in October 2021, after a long COVID delay. The first excavation began in the summer of 2022. Additional digital documentation of historic properties, collaborative interpretation classes, and community meetings fill out the accomplishments completed so far. After this five-year history, we finally feel like we can say the collaborative heritage project has started. This paper will provide a brief history of the project and its components. Then we explain why it is only in the summer of 2024 that we feel a true collaborative project can now be claimed. We discuss the strategies we have employed to balance supporting the community's heritage efforts, respecting the privacy of its members, and conducting academic research.

Wolf, Sibylle [279] see Conard, Nicholas

Wolfe, Allison [317] see Nielsen, Casey

Wolff, Christopher (University at Albany), Donald Holly Jr. (Eastern Illinois University), Augustus Lovett, and Kayla Farley (University at Albany)

[284] *More Than Axes to Grind: Ground Stone Tool Production and Use by the Maritime Archaic of Newfoundland*

The Maritime Archaic people of Newfoundland were a coastal culture whose primary economic activity was focused on sea mammals, fish, and seabirds in nearshore environments and offshore islands. It is assumed that they had seaworthy watercraft that allowed them to travel efficiently along the coast and to smaller islands in Newfoundland's many fjords and bays off its rocky shores. This is based primarily from indirect evidence of settlement locations, scant faunal remains, and ground stone tools affiliated with woodworking, including the manufacture of dugout canoes. While many such tools have been recovered on the island, the majority have been from spot finds or mortuary contexts. However, recent research by the authors on Inspector Island, an island in a bay of Newfoundland's north coast, reveals a rare domestic site that has significant evidence of a ground stone tool workshop that is likely associated with the production of watercraft. This paper will discuss evidence from all stages of ground stone tool production and compare it with the broader lithic assemblage recovered at the site. It will also examine the implications it has for mobility, human-environment interaction, and settlement by the Archaic in the eastern Canada.

Wolffhagen, Jesse (Harvard University)

[54] *Domestication and Its Discontents*

How we study domestication often gets in the way of conceptualizing what we're actually interested in studying. Vere Gordon Childe's *Man Makes Himself* offers few details about the process of plant and animal domestication, noting that people "began to . . . cultivate" certain plant species and "succeeded in taming . . . certain species of animals in return for . . . fodder . . . protection . . . [and] forethought" (Childe 1936:59). While the particulars of our domestication narratives have shifted since then, teleological traps continue to plague domestication research and push us to overinterpret past variation in human/environmental relationships. In this talk, I will overview some of the ways this adaptationist impulse limits our imagination about past human/environmental dynamics and hampers our ability to interpret archaeological patterns. These issues include a focus on animal status, an emphasis on dyadic relationships, and the primacy of reproductive control. Further, this teleological focus separates the modern-day from the "drama" of the past—presenting domestication as a process, yes, but one that was completed long before today. Moving past these roadblocks can give us a more dynamic research field, one that is more receptive to middle range research and can incorporate insights from varied ways people interact with our environments today.

Wolffhagen, Jesse [196] see Welker, Martin

Wolin, Daniela (Skidmore College), Batdalai Byambatseren (National University of Mongolia), Uuriintuya Munkhtur (National University of Mongolia), and Chunag Amartuvshin (National University of Mongolia)

[79] *Bioarchaeology of the Mongol Empire*

The Mongol Empire of the thirteenth to fourteenth centuries was a time of great interconnectedness, characterized by the widespread movement of people, goods, technologies, and practices across Eurasia. Our

knowledge of this period comes from a variety of sources, including texts, a rich array of material culture, and archaeological investigations of settlements and cemeteries. While popular interest in finding the tomb of Chinggis Khan has garnered significant attention, it is the systematic excavation and analysis of mortuary contexts and the individuals interred within over the past several decades that has provided a pathway for reconstructing the diverse experiences of people living within the Mongol Empire. In this presentation, we will outline the questions that are guiding current bioarchaeological research in Mongolia and, drawing on examples from recent excavations, detail the contributions of this approach to our understanding of this important period. *****This presentation will include images of human remains.**

Womack, Andrew (Furman University), Yitzchak Jaffe (University of Haifa), and Anke Hein (University of Oxford)

[99] *Bridging Disciplines: A Collaborative Approach to Human-Environment Interactions in China's Past*

Over the last two decades East Asian archaeology has seen an increasing move toward the use of archaeometric analyses to gain deeper insights into past human realities, especially the relationship between climatic and cultural change. However, a lack of collaboration between scholars in the fields of archaeology and climate science has led to research and publication that has not been critically analyzed within the relevant wider archaeological or paleoenvironmental context of the region. In order to better understand research trends and promote increased collaboration between fields we have undertaken bibliometric research and also convened what we hope is the first of several workshops bringing together climate scientists and archaeologists to learn from each other and establish relationships that will lead to future collaborative projects. While there are still many misunderstandings between fields, our experience points to direct collaboration as an important means of producing the most robust research on the intersection of ancient climate and society.

Wong, Gillian (University of Texas, El Paso)

[373] *Teaching Ethics in the Zooarchaeology Classroom*

As archaeological ethics are at the forefront of modern discussions in archaeology, from the recent update to NAGPRA regulations to the increase in publications that document sexual harassment in the field, it is essential that ethics be incorporated into our undergraduate courses. In building my own undergraduate archaeology courses, I have found it challenging to find resources and texts that cover the diversity of topics needed to address ethics in zooarchaeological contexts. In zooarchaeology courses, we must touch on both ethics that apply to all subfields of archaeology and those specific to working with animal remains, such as wildlife import regulations, understanding endangered species regulations and conservation, and handling biological materials. In this talk, I will discuss activities and resources I have used to teach ethics in zooarchaeology, touching on what have been some of the more successful (and less successful) approaches. Additionally, I will highlight topics in zooarchaeological ethics I have found challenging to teach and resources I have been unable to find but that would benefit my students as they learn these topics. This talk will incorporate information and suggestions I have received from colleagues in other disciplines, such as museums and biology.

Wong, Steven [223] see Sakai, Sachiko

Wood, Richard [123] see Wandsnider, LuAnn

Woodard, Buck [291] see Moretti-Langholtz, Danielle

Woodfill, Brent (Winthrop University)

[42] *Investigating Traditional Maya Salt Production in the Past and Present*

Salt is a universally necessary nutrient that is only found in limited contexts, making it in some ways an ideal commodity for archaeological investigation into ancient economies. Unfortunately, sodium chloride is also a highly volatile compound that is rarely found in archaeological contexts; as a result, its production, exchange, and consumption is largely impossible to study directly. In order to understand the ancient salt economy at Salinas de los Nueve Cerros in central Guatemala, then, ethnographic research with contemporary Maya

saltmakers has become one of the primary tools for interpreting the archaeological record—how salt was produced and marketed, the rationales behind different additives and forms, and the larger religious, political, and social contexts of salt production. While initially this work began as ethnoarchaeology, it has become an end in itself and the subject of a long-term field project to understand how traditional Maya salt producers have adapted to and continue to adapt to radical social upheavals, from the rise and fall of Classic Maya civilization to the Spanish conquest, Latin American independence, globalization, and even the COVID pandemic.

Woodhead, Genevieve (University of New Mexico), and Katherine Peck

[66] *Using Computer Vision and Digital Image Processing to Define Ceramic Fabric Groups*

Image thresholding algorithms can help extract useful data, such as particle counts, from ceramic petrographic slide images. These metrics can assist archaeologists in identifying ceramic fabric groups, which in turn helps answer broad questions about pottery provenance, exchange networks, potter decision-making, and communities of practice. Computer vision models like Segment Anything (SAM) can segment ceramic petrographic slides with results comparable to widely used image thresholding algorithms. In this poster, we implement and evaluate a Python workflow that uses computer vision and digital image processing to extract ceramic fabric data from petrographic slide images. SAM first segments each slide image into discrete objects, and the resulting mask is vectorized. Segmented objects are then divided into particles and voids based on color thresholding, and individual particles are analyzed for their size and sphericity. Finally, we perform a cluster analysis on a set of derived metrics (% particle area; % void area; particle size, sortedness, and sphericity; and void size and sphericity) to determine fabric groups. We compare these fabric group results to groupings assigned by a ceramic petrographer to determine if these metrics alone can be used to define valid groups.

Woodward, Hayley (Auburn University)

[172] *Etching the Earth: Emplacing Aztec-Style Living Rock Carvings*

Across Postclassic central Mexico and beyond, sculptors etched Aztec-style imagery and writing into the faces of living rock. Such images, ranging from scenes of deity veneration and cosmogonic genesis to symbolic representations of conquest, spark inquiry into the hegemonic nature of the Aztec Empire. Etching, literally branding, the landscape could be interpreted as an imperial placemaking strategy, one attesting to the expansionist goals of the Culhua-Mexica rulers of Tenochtitlan. However, this paper directs focus to the material quality, environmental specificity, and ontological framing of these living rock carvings in order to postulate why sculptors selected these surfaces and sites for marking. While considering how visual styles and subject matters were mobilized to traverse across vast distances, this paper argues that the emplacement of such visual programs within an animate landscape activates these images, and therefore their meanings, in ways that are external to visual description of style or iconographic translation. Thinking through the relationality of surface, material, context, image, and maker demonstrates that, while these living rock carvings texture the concept of Aztec hegemony outside Tenochtitlan, their meaning was instrumental to local placemaking practices as much as it was to forging bonds between the center and periphery of empire.

Workman, Vanessa (University of Pennsylvania Museum of Archaeology and Anthropology)

[49] *Early Iron Metallurgy in the Eastern Mediterranean and Beyond*

The appearance of iron in southwest Asia in the late second to early first millennium BCE is currently understood as a complex social phenomenon, and yet pinpointing even broad details of a technological emergence that led to a full-fledged Iron Age has proven to be a major challenge. Since the work commemorated in the volume *The Coming of the Age of Iron* (1980), archaeometallurgical scholarship has slowly improved a soft focus on how various societies came to adopt iron into their metallurgical repertoire. This paper will highlight developments in the field over the past 50 years, celebrating the innovative contributions of Vince Pigott and his colleagues and the work that grew from their seminal research. To conclude, new research on early iron in the eastern Mediterranean will be discussed, emphasizing bidirectional influences of bronze and iron from technological, social, and economic perspectives.

Worley, Fay [207] see Cooper, Anwen

Worman, F. Scott [216] see Sobel, Elizabeth

Worthey, Kayla (Harvard University), Emily Hallett (Loyola University Chicago), Teresa Steele (University of California, Davis), Aïcha Oujaa (Institut National des Sciences de l'Archéologie et du Patrimoine), and Mohamed Abdeljalil El Hajraoui (Institut National des Sciences de l'Archéologie et du Patrimoine)

[281] *Paleoclimate Proxy Data and the Human Scale: Late Pleistocene Climate Variability and Forager Subsistence at La Grotte des Contrebandiers, Morocco*

Understanding the climatic context of the human occupations of coastal landscapes in the Middle Stone Ages of North and South Africa is a necessary first step toward contextualizing early proliferations in these two regions of symbolic and functional technologies commonly associated with modern human behavior. Assessing the degree to which paleoclimate proxy data translate to environmental variables important to humans, however, is a persistent challenge. The archaeological site of La Grotte des Contrebandiers presents an opportunity to investigate Late Pleistocene climate variability in the Atlantic coastal region of Morocco, and its actual impact on the subsistence of human groups. Stable oxygen isotopes from large herbivore tooth enamel ($\delta^{18}\text{O}_{\text{enamel}}$ values) coupled with data on mollusk and vertebrate fauna abundances are used to explore shifts in precipitation regimes, plant water deficit, and variation in the use of coastal and terrestrial animal resources during Marine Isotope Stages 5 and 2. While climate variability was detected, results suggest that human diets were affected most strongly by physical modification of coastal geography than by other climate factors, and that the vegetation and animal communities of the Moroccan littoral generally had sufficient ecological flexibility to cope with local climate fluctuations in the Late Pleistocene.

Wragg Sykes, Rebecca [185] see Hassett, Brenna

Wright, Aaron (Archaeology Southwest), and Phillip Leckman

[341] *The Ties that Bind: Integrating Archaeological, Ethnographic, and Computational Models of Movement across the Great Bend of the Gila in Southern Arizona*

[WITHDRAWN]

Wright, Carson [189] see Nolan, Kevin

Wright, Ian (State Historic Preservation Office), and Lexi Little (Utah State Historic Preservation Office)

[340] *Cultural Site Stewardship Programs: Why Public Involvement Is Critical to the Long-Term Preservation of Heritage*

The Utah Cultural Site Stewardship Program (UCSS) will discuss the state of Utah's effort to develop a united front when it comes to the safeguarding of cultural resources statewide. The UCSS Program was legislated into state code in 2020 and has rapidly become the largest public cultural site stewardship program in the nation, with over 400 volunteer site stewards and 145 individual land managing partners/stakeholders. The objectives of this program are public involvement in safeguarding Utah's cultural heritage; correcting and preventing inappropriate behaviors on cultural sites; public education through training, events, and projects; and land manager support. The UCSS program provides the public with a positive and effective way to take action. Individuals and groups can help safeguard their own heritage, through monitoring tangible archaeological and cultural sites as well as helping to steward the intangible history of Utah and its people through special heritage projects. In this session, UCSs will discuss the positive impacts that this program is having statewide, and why public involvement is critical to the long-term preservation of heritage.

Wright, Sterling (Penn State University), Franceska Stirbu (Vasile Pârvan Institute of Archaeology, Romanian Academy, University of Bucharest), Sorin Ailincăi (Gavrilă Simion Eco-Museum Research Institute, Tulcea, Romania), Alexandra Tarlea (University of Bucharest, Romania), and Laura Weyrich (Penn State University)

[215] *Oral Microbiome Shifts Associated with the Expansion of the Roman Empire along the Lower Danube*
Under Emperor Trajan, the Roman Empire encompassed five million km² across Europe, Asia, and Africa. The

empire's vast territory was interconnected by an extensive network of roads and military conquests, yet it was also characterized by a rich diversity of cultures, languages, and populations. Despite centuries of study, many questions remain about the extent to which Roman influence impacted population health and demographics across its provinces. Ancient DNA in dental calculus offers new evidence into these debates. Here, we reconstructed the oral microbiomes of 74 individuals who lived along the Lower Danube during the Neolithic (ca. 7000 BCE–4500 BCE), Early Iron Age (1100 BCE–800 BCE), Roman era (40 CE–600 CE), and Middle Ages (1400 CE–1600 CE). Our analysis revealed that while the oral microbiome remained relatively stable from the Neolithic to the Iron Age, it underwent significant changes with the onset of the Roman era. Notably, the oral microbiomes from the Roman period and Middle Ages were similar, indicating that these changes persisted long after the collapse of the empire. These findings prompt a reevaluation of the depth and duration of Roman influence on provincial populations. ***This presentation will include images of human remains.

Wriston, Teresa (Desert Research Institute), Jd Lancaster (Desert Research Institute), Jillian Maloney (San Diego State University), Loren Davis (Oregon State University), and James Futtly Jr. (SDSU/SIO/UCSD)

[183] *Geoarchaeological Research within Six USACE-Managed Reservoirs of the Willamette Drainage Basin, Oregon*
Although understanding subsurface deposits is complex, it is necessary for agencies tasked with managing cultural resources that are often buried. Seasonal inundation of reservoirs introduces additional depositional, erosional, and transport considerations and logistical challenges. For the US Army Corps of Engineers (USACE) Willamette Valley Project, our interdisciplinary team tackled these challenges using a combination of geophysical sub-bottom profiling, coring, augering, and geomorphic mapping to characterize the deposits and landforms in six project areas centered on seasonally drawn down reservoirs. Core analysis helps delineate where buried soils and any associated cultural material are most likely and age controls of selected core and auger samples constrain the age and depth of those deposits. The resulting geoarchaeological data is summarized as landform-based management recommendations. Considering that many buried archaeological sites have little to no surface exposure, we encourage agencies to consider geoarchaeological projects such as ours to provide the information required to better manage and protect buried archaeological sites.

Wrobel, Gabriel (Michigan State University)

[283] *Bioarchaeology of the Coastal Maya*
This paper reviews previously published skeletal studies from coastal sites in Mexico and Belize, focusing on diet, health, population structure, and preliminary genetic data. Bioarchaeological research in these regions has provided unique insights into the biocultural adaptations of the Maya to coastal environments. It has also allowed for the reevaluation of existing models of Classic period social hierarchies and the nature of the Postclassic transition. The strategic access to marine resources and involvement in long-distance trade brought wealth to these comparatively small communities and may have granted them a degree of independence from the tumultuous dynastic politics of inland urban centers. Proximity to the ocean and flexible economic strategies appear to have bolstered the resilience of many coastal communities, allowing them to thrive during the Postclassic period. While much of the current understanding of coastal Maya biology is based on the small Classic period site of Xcambó—which offers a relatively large number of skeletons and a diverse range of analyses—research from other coastal sites expands our knowledge of the biocultural adaptations among ancient Maya groups. ***This presentation will include images of human remains.

Wrobel, Gabriel [64] see Franklin, Sasha

Wrobel, Gabriel [283] see Graham, Elizabeth

Wrobel, Gabriel [321] see Teja, Melissa

Wu, Nikki (UC Davis), Derek Anderson (Mississippi State University), Christyann Darwent (University of California, Davis), Jelmer Eerkens (University of California, Davis), and Yvonne Narganes Storde (Universidad de Puerto Rico)

[99] *Sea Turtle Remains as Markers of Climatic and Ecological Change: Insights from the Aklis Site, St. Croix, US Virgin Islands*

Applied zooarchaeology, using multiple facets of scientific research, can address modern problems related to

climate change. As six out of seven sea turtle species are currently listed as endangered or vulnerable on the International Union for Conservation of Nature Red List, one way to address climate change is to expand our knowledge of life history patterns and paleoecology by utilizing the archaeological record. Using my current research, I will present the following case study linking archaeology and climate change conservation: sea turtles are a keystone species and serve as a critical link between humans and their environments in the Caribbean Islands. This research focuses on the historical ecology of sea turtles and their relationship to environmental and climate change on St. Croix Island. The Aklis site spans the Late Saladoid–Ostionoid transition, a period when the archaeological record suggests a major social reorganization. This paper explores the relationship between humans, sea turtles, and climate change using traditional zooarchaeological methods and stable isotope analysis. $\delta^{15}\text{N}$ and $\delta^{13}\text{C}$ stable isotope ratios of sea turtle bones from the Aklis site, provide insight into dietary patterns from modern and precolumbian contexts and provide foundational insights that may guide more sustainable conservation of these keystone species.

Wu, Ying-Li (University of Western Australia), Jo McDonald, Janet Hergt (University of Melbourne), Tanzhuo Liu (Columbia University), and John Fairweather (University of Western Australia)

[174] *Alternative Methods for Dating Rock Varnish at Murujuga, Western Australia*

Placing robust age constraints on the production of rock art is difficult because of the lack of suitable material for sampling. This is especially true in the case of petroglyphs where “paints” are unavailable. The ARC-funded project “Dating Murujuga’s Dreaming” faces this challenge by trying to identify a chronology for rock varnish that is abundant in the landscape. Many petroglyphs have been carved or pecked into the dark varnish, occasionally varnish has grown back onto the motifs, bracketing the time of production for the rock art, therefore dating the varnish could provide a minimum and maximum age. Along investigating the microbiome on rock surfaces associated with varnish formation, we are exploring the potential of uranium-series and radiocarbon for direct dating. The porous nature of the varnish raises questions regarding the “closed-system” of these coatings, crucial for radiometric dating. While varnish can be 200 μm thick, it presents technical challenges for radiometric dating as the thin layers are irregular and contaminants likely within. Organic carbon is another avenue being pursued. Indirect dating approaches include reconstructing the paleoclimate records to match varnish laminations. Rock varnish on dated meteorites in the Pilbara could provide suitable age calibration for the varnish on rock art at Murujuga.

Wunderlich, Shelly (Burns & McDonnell), and Brandy Harris (Burns & McDonnell)

[94] *The Forgotten: An Unanticipated Discovery of a Mexican Tenant Farmer Cemetery in Texas*

In the first half of the twentieth century, families of Mexican and Mexican American farmers lived, worked, and died on a tenant plantation in Milam County, Texas. Over the next 100 years their community was forgotten until construction of a solar farm unearthed their cemetery in 2023. Archaeologists and historians at Burns & McDonnell Engineering Company Inc. sought to recover and reinter their remains and tell their story despite the paucity of available information about this underrepresented population in the archival record.

Wurst, LouAnn (Michigan Technological University)

[342] *“Archaeology Is a Weak Weapon for Political Action”? Reflecting on Marxism, Dialectics, and Praxis*

One of Randy McGuire’s greatest contributions has been his clear articulation of a Marxist dialectical approach to archaeological research. The dialectic integrates theory and method; the parts and the whole; past, present, and future; and the discipline of archaeology and larger society into a single totality. Praxis based on the dialectic of knowledge, critique, and action aims to forge a space for archaeology to participate in the collective project of creating a different life, one that subverts and transforms capitalist inequalities and oppression and strives for social justice and dignity for all humans. And while Randy centers his research on this concept of praxis he has repeatedly argued that archaeology is a weak weapon to wield in creating a just world. In this paper, I summarize the implications of a Marxist philosophy of internal relations, explore these seemingly contradictory ideas of praxis, and reflect on the potential for archaeologists to use our craft to contribute to the larger Marxist project of creating a world without capitalism and its exploitation.

Wurst, LouAnn [70] see Iwanicki, Josef

Wurtz Penton, Michelle (Versar Inc.), Amanda Maldonado (Versar Inc.), and Kathy Couturier (Avon Park Air Force Range)

[92] *Look Again, 40 Years of Archaeology at Avon Park Air Force Range*

Avon Park Air Force Range (APAFR), located in central Florida, was established in 1942 as a gunnery and bombing range, encompassing over 100,000 acres within the Kissimmee River watershed. Archaeological surveys at APAFR began in the early 1980s, but it wasn't until the early 2000s that these surveys were conducted according to state standards with standardized shovel test intervals. Over the years, various survey methods were employed, such as judgmental walkovers and shovel test surveys with inconsistent intervals, leading to variability in methodology across different survey areas. This poster presents several case studies comparing areas surveyed before and after the implementation of these standardized methods. The findings have enabled APAFR to identify numerous previously undocumented Archaic sites, which would likely have been overlooked in earlier surveys. Discovering these sites is crucial for understanding how the Archaic populations in the region navigated and utilized their environment. These results underscore the importance of evaluating previous survey methods to ensure they meet current standards. In cases where earlier methods may not align with current practices, resurveying areas with up-to-date standards or probability models is essential for thorough documentation of cultural resources.

Wurz, Sarah

[281] *The Earliest Phases of Occupation at Klasies River Main Site, Southern Cape Coast, South Africa*

Klasies River main, a well-known site in South African Middle Stone Age research, contributed significantly to paleoanthropological evidence on early humans, and to knowledge of early human behavior and paleoenvironments. The earliest layers in Cave I at Klasies River is known as the MSA I period and is represented in the Witness Baulk by the Light Brown Sand (LBS) and Silty Black Sands (SBLs) members. Recent dating on the overlying MSA II layers of the Witness Baulk revealed that the MSA I must be older than 110,000 years ago. One hypothesis is that the MSA I may relate to the earliest part of MIS 5 into MIS 6. There is renewed interest into this period at the coastal sites in South Africa, as it has become evident that coastal occupation on both the west and south coast may be earlier than previously thought. The MSA I archaeological evidence at Klasies River consists of well-preserved bone, especially in the LBS member, ashes of intact and dumped hearths, ochre and shellfish, and lithics. In this presentation changing paleoenvironments and subsistence behaviors, and evidence for complexity and innovation in domestic and technological practices in the MSA I will be discussed. ***This presentation will include images of human remains.

Wyatt, Andrew (Middle Tennessee State University), and Clelie Cottle Peacock (New South Associates)

[178] *The Bass Street Community Archaeology Project: Digging Deeper into African American Heritage in Nashville*
 Since 2017, the Bass Street Community Archaeology Project has been conducting excavations at the site of one of the earliest African American neighborhoods in post-emancipation Nashville. The Bass Street Community was located on the north side of Saint Cloud Hill, the site of Fort Negley, a Civil War-era fort constructed by the Union forces in Nashville. Formerly enslaved persons who joined with Union forces were pressed into service to construct the fort, forming settlements on the slopes of Saint Cloud Hill that developed into permanent neighborhoods following the end of the Civil War. The neighborhood at Bass Street was a thriving yet marginalized community up until the 1960s when it was demolished and the people relocated for the construction of the interstate system. Despite the political and social marginalization, the residents of Bass Street maintained their collective identity within the Jim Crow Era South and through the Civil Rights era. This presentation we will provide an update regarding the more extensive fieldwork funded through our National Endowment for the Humanities Grant, and we will also present our preliminary findings from the lab work and artifact analysis.

Wyllie, Cherra (AMNH)

[295] *An Investigation into Possible Veracruz Origins for the Laud and Fejérváry-Mayer Codices*

In October 1519, the Santa María de la Concepción arrived in the southern Spanish port of Sanlúcar de

Barrameda from Veracruz carrying a letter to the crown from Hernán Cortés, along with an inestimable treasure of gold, silver, and featherwork. The cargo included a retinue of Totonac elites and indigenous interpreters as well as “two books which the Indians have.” Scholars have speculated about the origins of these manuscripts, attributing them to Maya or Mexica scribes. Gordon Brotherston, H. B. Nicholson, and Patricia Anawalt are among those who propose that Veracruz artists painted the Codex Laud and Fejérváry-Mayer, two pictorial screenfold books that form part of the Borgia Group. In their noninvasive pigment analyses, Italian researchers from MoLab reveal that the color composition in these two books is distinct from other preconquest Mexican codices. In this presentation I examine the Laud and Fejérváry-Mayer codices in light of material properties, ethnohistory, and comparable Gulf Coast iconography, epigraphy, calendrics, and symbolism to strengthen the proposition that the books sent from Veracruz are ancient Veracruz books, and in all probability the Codex Laud and Codex Fejérváry-Mayer.

Wysocka, Joanna [316] see Airola, Danielle

Xia, Yin [392] see Li, Xiuzhen

Xiao, Hui (University of South Florida)

[223] *Ceramic Analysis of Woodland through Mississippian Occupation at Pierce Mounds, Northwest Florida*
 Located at the Apalachicola River mouth in northwest Florida, the Pierce Mounds site (8Fr14) is the largest ceremonial center in the region and a hub for human activity from the Early Woodland to Mississippian periods (ca. 500 BC–AD 1500). Previous research identified interesting but confusing settlement patterns, including a possible oval plaza formed by Woodland and Mississippian mounds and two distinct Mississippian strata separated by a flood deposit. The absence of Late Woodland evidence raises questions about continuous occupation at Pierce. This study uses a portable X-ray fluorescence (pXRF) spectrometer to analyze the chemical compositions of ceramics, combining these findings with ceramic typology and radiocarbon dates. Significant differences in clay sources between Woodland and Mississippian ceramics from various contexts imply different area preferences: Woodland people favored the western side, while Mississippian people preferred the east. Additionally, ceramics from contexts lacking diagnostic artifacts share similar clay sources with typical Mississippian types, indicating a potential transitional Late Woodland period. The results suggest intentional site maintenance by later Mississippian people who avoided earlier Woodland areas, implying continuity of knowledge and repeated occupation. In summary, this study integrates quantitative and qualitative ceramic analysis to uncover occupation patterns and refine the site’s chronology.

Xie, Liye (University of Toronto)

[115] *Collective Actions in Neolithic China: Various Forms of Social Complexity*

This paper examines the role of collective action in the emergence of social complexity in Neolithic China. By analyzing archaeological and ethnographic evidence, the study explores how communal activities such as public works, feasting, and resource management both shaped and were influenced by evolving social structures. The research highlights the dynamic interplay between cooperation, leadership strategies, and political economy, offering new perspectives on how collective efforts contributed to the diverse paths of social development in early China. This study aims to enrich broader discussions on the origins and variations of complex societies.

Xie, Xinyi

[185] *Female Workers’ Role in Representing the Past in Museums*

Museums perform as a window that exhibits the archaeological materials from the past to the public and are often considered neutral “authorities” showing the “truth.” However, recent research doubts the authority of museums, arguing that the materials are interpreted and represented subjectively and selectively. One branch of these critiques, feminist museology, explores museums’ role in constructing the real-world gender pattern. This research intends to explore how women workers in museums can make a difference in interpreting and representing archaeological materials. This research will review the engendered process of interpreting and representing the past and explore the influence of female museum workers in challenging gender construction through the case study, the Imperial War Museum, Britain. In this case study, it is

evident that the gender identity of museum workers provides their curation a perspective that is significantly distinguished from social gender norms, but the intersectionality with race, class, and other identities makes other exclusive effects emerge. This research suggests building diverse and inclusive professional teams in exploring this past, in order to build up and disseminate a full image of the past in an inclusive perspective.

X^wməθk^wəy^əm (Musqueam Indian Band) [288] see Hilsden, Jay

Yaeger, Jason (UTSA), M. Kathryn Brown (UTSA), Bernadette Cap (San Antonio College), Rachel Horowitz (Washington State University), and Juan Fernandez Diaz (University of Houston)

[199] *A Tale of Two Surveys: Comparing the Results of 2013 and 2022 Lidar Surveys in Western Belize*
Lidar survey was undertaken in the Mopan Valley of Western Belize by the National Center for Airborne Laser Mapping in 2013 using the Gemini lidar sensor and again in 2022 using the newer Titan sensor. A total of 138 km² were surveyed both times. A comparison of the data in the resurveyed area shows that the Titan sensor provided data with a higher resolution and fidelity. In this paper, we examine the differences between the data produced by the two surveys, particularly in terms of the visibility of settlement traces that have small footprints and are very low in height, including low mounds, causeways, agricultural terraces, quarries, and chultuns. We then discuss the implications the new data has for enhancing our understanding of ancient Maya settlement patterns, sacred landscapes, economic systems, and agricultural systems.

Yaeger, Jason [182] see Klaput, Jan

Yaeger, Jason [349] see Maas, Dakota

Yalcin, Tugce (University of Georgia)

[86] *Pest Management in Western Anatolia in the Bronze Age: Rodent Infestations and the Role of Cats and Dogs in Protecting Food Stores*

This study examines the pest control strategies at the largest citadel in western Anatolia in the Bronze Age, the citadel of Kaymakçı, by analyzing rodent, cat, and dog faunal remains. Rodents such as *Mus musculus* (house mouse) and *Rattus rattus* (black rat), which thrive in human settlements by consuming stored agricultural products, were identified among the 45 rodent specimens found. These rodents are known to cause significant damage to food stores, suggesting that their presence in the settlement posed a challenge to food security. In response, non-food domesticates like cats and dogs were likely kept in specific areas to protect storage facilities from infestations. By exploring the relationship between rodents and humans, this research provides insight into how ancient Anatolian communities managed pests and safeguarded their food supplies. The findings contribute to broader discussions on the role of domestic animals in pest control and their importance in maintaining agricultural stability in Anatolian Bronze Age societies.

Yam, Brandon (Hamilton College)

[124] *Archaeotecture: Building the Great House, the Great Life at Albert Porter Pueblo (5MT123)*

Architecture made up an important part of the built environment of Albert Porter Pueblo (5MT123), an ancestral village in southwestern Colorado most intensively occupied during Pueblo II–Pueblo III (950–1300 CE). In my study, I conduct spatial-syntax analyses of collective belongings and individual belongings, or proxies for past activities in architectural room blocks, to contrast with public architecture. My analyses indicate how different household members might have experienced different social realities in the same room blocks over time—before and after the construction of the great house (1060–1280 CE). Examining architecture as material culture, my study asks how Indigenous peoples made their built environment meaningful and made meaning from their built environment, the Woods Canyon community, and more broadly, the Mesa Verde region.

Yamamoto, Atsushi (Yamagata University), Oscar Arias Espinoza (Universidad Nacional Mayor de San Marcos), and Ryan Clasby (Spencer Museum of Art, University of Kansas)

[282] *Pacopampa and the Development of Social Complexity in the Jaén Region*

Recent research in the Jaén region of the eastern Andean slopes of northern Peru indicates that this zone

was closely linked to cultural developments occurring in the Central Andean Highlands during the Formative period. Indeed, investigations have documented cultural traits and patterns that indicate that Jaén region sites maintained a strong local identity while also establishing interregional relationships with prominent highland Andean centers such as Pacopampa. These patterns are especially evident at the ceremonial center of Inगतambo along the Huancabamba River, which was first occupied during the Initial Formative period before experiencing major growth during the Middle and Late Formative. By the Pomahuaca phase (1200–800 BC), Inगतambo had adopted both a mound-like structure characteristic of Jaén region sites and a platform structure similar to those found at major ceremonial centers in the northern highlands of Peru. The platform architecture would eventually show strong Pacopampa influence as evident in both the material culture and construction activities. Through a detailed analysis of excavation results from Inगतambo as well as other Formative sites in the Jaén region, this presentation will focus on the relationship that developed between Pacopampa and the Jaén region and the influence that these interactions had on local sociopolitical developments.

Yang, Dongya [288] see Conlan, Christine

Yang, Dongya [288] see Procter, Ellery

Yang, Dongya [316] see Tran, Cathy

Yang, Fei [156] see Starkovich, Britt

Yang, Ying (Institute of Archaeology, UCL), Dorian Fuller (University College London), Andrew Bevan, and Xiuzhen Li (UCL Institute of Archaeology; University of Oxford)

[392] *Building the Mausoleum of the First Qin Emperor: Preliminary Patterns from Building Elements in Four Ancillary Pits*

The First Qin Emperor's Mausoleum is invaluable for understanding the very first dynasty of Imperial China—the Qin Empire. Except for the well-known Terracotta Army pits, over 180 ancillary pits containing different objects with unique meanings have been discovered within the mausoleum. Excavations revealed many ancillary pits were burnt, transforming timbers into charcoal, yet this has not been systematically studied. In this study, we examined 681 charred wooden building elements from the Terracotta Army pits 1 and 2, the Stone Armour Pit (K9801), and the Acrobat Pit (K9901), including crossbeams, pillars, square timbers, floor panels, side planks, sills, etc. The building structures were exclusively constructed by coniferous wood, especially subalpine conifers, but no further correlations between the taxon composition and element type were found. However, the taxon composition for different pits shifts from Cupressaceae growing at lower elevations to subalpine conifers, which indicates a construction sequence progressing from K9801 to K9901 and then to the Terracotta Army pits. The results imply a significant anthropogenic impact on the timber source(s) even before the construction of these pits and also suggest timber supply from a relatively distant mountainous region rather than adjacent Mount Li, indicating sophisticated logistical planning and resource mobilization.

Yaquinto, Jessica (Living Heritage Anthropology), and Octavius Seowtewa (Zuni Pueblo)

[362] *Pueblo of Zuni Connections to the Greater Bears Ears Cultural Landscape*

Living Heritage Anthropology LLC and the Pueblo of Zuni have conducted ethnographic fieldwork for two recent ethnographic studies funded by the Bureau of Land Management, Bears Ears Partnership, and World Monuments Fund, looking at cultural connections, public interpretation, and culturally appropriate management at sites across and adjacent to Bears Ears National Monument. Through these fieldwork visits the Pueblo of Zuni's Zuni Cultural Resource Advisory Team (ZCRAT) members have identified themes they want the general public to understand about their migrations north through the area as well as their ancestral lifeways. This presentation will review some key findings identified by the ZCRAT from these studies, especially regarding the interpretation of archaeological sites and ethnographic landscapes and cultural transmission to future generations.

Yaworsky, Peter [126] see Byers, David

Yépez, Alden (Pontifical Catholic University of Ecuador)

[105] *Teluric Deity and Intermittent Volcanic Debris River in the Upper Amazon, Ecuador: The Ancient Valley of the Upper Upano*

Many authors who have studied the upper Upano region of the Ecuadorian Amazon have suggested that a significant shift occurred between AD 300 and 600, followed by a hiatus of 200 years until AD 800, which is attributed to a supposed catastrophic eruption of the Sangay volcano. This hypothesis raises doubts about the influence of the volcano in earlier times. However, detailed documentation of volcanic eruptions during the colonization period, as well as petrographic evidence and dating of precolonial eruptions in the region, invite us to reconsider this perspective. Instead of seeing Sangay exclusively as a destructive geothermal phenomenon, it is plausible to interpret it as an agent that promoted human interaction and played a significant role in the symbolic sphere. Based on this reinterpretation, we propose a new and unprecedented working hypothesis: the geothermal interaction between Sangay volcano and the Upano River operated intermittently as a facilitator of human interaction in the remote past. The cyclical and powerful eruptions of Sangay would not only have favored contact and exchange between communities on both sides of the river but could also explain the sacred character of the volcano, reflected in a rich and varied iconography.

Yerkes, Richard (OSU)

[184] *Warfare and Early Agriculture in SE Europe and Midwestern North America: Comparing Neolithic / Early Copper Age and Late Prehistoric Fortifications and Bell-Shaped Pits*

SE Europe during the Neolithic and Early Copper Age (5500–4000 cal BCE) and eastern North America during the Late Prehistoric period (1000–1650 ACE) are marked by similar socioeconomic changes in tribal societies. There is evidence for new food production and exchange patterns but also for increased conflict. Larger settlements with fortifications and bell-shaped food storage pits are viewed as correlates for elevated warfare and intensive agricultural practices in these regions. However, it is often assumed that the transition to agriculture is what led to more sedentary settlements, conflicts over farmland, and defensive fortifications. Fortifications have distinctive archaeological attributes not found in other enclosures. There is indisputable evidence for trauma and violent deaths in agricultural groups who fortified their settlements. However, there is little evidence that these fortifications were a deterrent to warfare. Bell-shaped pits also appeared during the transition, and the need for concealed food storage, and seasonal mobility must also be considered in interpretations of fortifications and defense in Neolithic, Early Copper Age, and Late Prehistoric settlements. Archaeological evidence from SE Europe and the Middle Ohio Valley of North America are compared, and ethnohistoric accounts of American Indian farming practices are examined in this study of warfare and agriculture.

Yeshurun, Reuven, and Ma'ayan Lev (University of Haifa)

[54] *Toward Exploring Synanthropy and Domesticoidity in Lizards and Snakes*

Squamates (lizards and snakes) appear sporadically in most Pleistocene archaeological sites but attain a much greater significance in the archaeofaunal record of the first sedentary communities in southwest Asia. Robust evidence now exists from Natufian (late Epipaleolithic) camps for capture and consumption of some large-bodied species, and similar evidence is present in later farmer or forager/farmer societies worldwide. In this talk, we discuss the potential role of these often-overlooked species in the domestication process. Some of these taxa may have been drawn to the growing human communities because of the increased supply of food (refuse and rodents), creating more opportunities for encounter and exploitation by humans. An additional option for encounter may have been the patches of wild cereal stands that were harvested around these hamlets, at precisely the season when many snakes are the most active. This discussion is needed, first to establish a theoretical basis for approaching squamate/human interactions in prehistory, and second, for finding better frameworks of references to identify these processes empirically. Zooarchaeology is ideal for examining how species alter their range and abundances as a consequence of entering the human niche; we believe it is the time to integrate reptiles in the discussion.

Yin, Jianjie (Nagoya University), and Seiji Kadowaki

[191] *Analysis of Projectile Use-Wear, Adhesive Remains, and Archery Experiment on Epipaleolithic Microliths from Tor Hamar, Southern Jordan*

Epipaleolithic assemblages in the Levant are characterized by frequent occurrences of microliths, and their techno-morphological and chronological studies have clarified detailed cultural history and regional variations in the Levant. While functional studies of microliths recently increased, the relationship between microlith functions and their spatiotemporal patterns remains unclear. Our study examines possible projectile uses and hafting methods of microliths from Early and Middle Epipaleolithic assemblages from Tor Hamar, southern Jordan. For this purpose, we observed projectile use-wear, including diagnostic impact fractures (DIFs) and microscopic linear impact traces (MLIT) and the distribution of adhesive remains. We also conducted some archery experiments to verify our inferences about the projectile use and hafting methods of the microliths. Our poster presents the types of DIFs, MLITs, and the distribution patterns of adhesive remains observed on some microliths, including arch backed bladelets, from Tor Hamar. Based on these observations, we show our inferences on the projectile use and hafting methods of the microliths, such as oblique tips and barbs. In addition, we discuss regional variations on the frequency of DIFs in the southern Levant and their possible relationship with the microlith types and their hafting for projectile weapons.

Yin, Ruixue, Fengshi Luan, and Luc Doyon (CNRS UMR5199 PACEA, Bordeaux University)

[348] *Changes and Consistencies in Bone Technologies as a Sign of Cultural Transition about 4,000 Years Ago in Eastern China: Insights from the Dinggong Site, Shandong, China*

Changes in ceramics and prestige goods played an important role in defining historical chronologies retracing the emergence of complex societies in Ancient China. However, it remains unclear whether, and if so, to what extent, these cultural changes also affected other aspects of material culture. Here, we present the analysis of bone tools found in Longshan and Yueshi contexts at Dinggong, Shandong Province. We identify a continuum in the techniques used to manufacture bone tools during the Longshan and Yueshi eras. From a typological standpoint, both tool types and intra-typological diversity increase during the Yueshi compared to Longshan. Longshan tools are generally more standardized than Yueshi tools; the latter often show evidence suggesting they were expediently manufactured. We argue this pattern reflects the preservation of a common know-how among the human groups occupying Dinggong throughout the Longshan to Yueshi eras. The typological diversification and decrease standardization observed during the Yueshi era are coherent with social groups adopting flexible technological behaviors to cope with deteriorating environmental conditions.

Yingpei, Zhu (Shaanxi Academy of Archaeology)

[44] *The Excavation and Research of the Royal Tomb Keepers' Cemetery of the Western Han, China (202 BC–AD 8)*

The recent excavation at Dapuzi Cemetery in Xi'an, China, revealed that the cemetery belonged to the residents of Chang Ling Yi. Chang Ling Yi was constructed to guard the mausoleum of Emperor Gaozu of Han (reigned from 202 BCE to 195 BCE) and Empress Lü. North II M68, one of the tombs within this cemetery, features a well-preserved structure with a main burial chamber and three niches. The study indicates the deceased was an adult man aged between 25 and 32 years. Over 300 funerary objects were unearthed, including bronze vessels, pottery, jade objects, and color-painted terracotta figures. Hundreds of terracotta figures buried in the southern niche symbolize a major performance from that period. Archaeobotanical analysis revealed that the grains found in the pottery barns were rice and millet, while the pottery jugs were used to store alcohol. These findings offer insights into the artistic and cultural life and the diet of the Han residents. In summary, the discovery of M68 has advanced our knowledge of the Western Han Dynasty's historical, cultural, and social aspects. It enriches our comprehension into ancient Chinese civilization and establishes a connection to the past through its preserved artifacts and burial practices.

Yoder, David [245] see Davidson, Jaron

Yost, Chad (Indiana State University), and Jenna Hinkle (Indiana State University)

[337] *The Effects of Nixtamalization on Maize (*Zea mays* spp. *mays*) Phytoliths in Controlled Cooking Experiments*

An important maize kernel processing method is nixtamalization, which involves boiling kernels in alkaline water to soften the kernels and remove the hulls. Researchers investigating maize processing, cooking, and consumption often look for microscopic plant remains called phytoliths. Because phytoliths are susceptible to being damaged or dissolved when exposed to alkaline solutions, we hypothesized that nixtamalization may be detrimental to maize phytolith preservation. To investigate potential phytolith damage, we nixtamalized

kernels from a variety of white dent maize sourced from Oaxaca, Mexico and grown at the ISU Community Garden. For the nixtamalization experiment, maize kernels were boiled in a calcium hydroxide solution using three different boiling times, followed by phytolith extraction from the kernel glumes. Maize phytoliths were examined at 400x with a transmitted light microscope (LM) and ~10,000x using a scanning electron microscope (SEM). Phytolith damage was initially assessed qualitatively. There was no phytolith alteration observed with the LM; however, there was submicron-scale alteration observed with the SEM, particularly for the phytoliths subjected to the longest boiling times. The high lignin content of maize glumes may provide protection from alkaline cooking solutions. Energy dispersive X-ray spectroscopy (SEM/EDX) is ongoing to identify a potential phytolith elemental signature for nixtamalization.

Yost, Chad [160] see Alekseitseva, Valentina

Young, Caitlyn

[322] *Using GIS and Lidar to Support Community Archaeology Workshops in Surprise Valley, CA*

This poster highlights a community archaeology project in Surprise Valley, CA. The June 2023 workshop involved the Northern Paiute Gidutikad Band, the Kosealekte Band of the Pit River Tribe, and local residents. Activities included plant counts and collection, lithic reduction, traditional burn practices and drone photography, while emphasizing Indigenous Traditional Ecological Knowledge (ITEK). Over the following year, an interactive map was created to document important sites and plant harvesting areas. This project showcases the connections between people and place, promoting community engagement, and enhancing the understanding of cultural memory through applied anthropology.

Young, D Craig (Far Western Anthropological Research Group), and Daron Duke (Far Western Anthropological Research Group)

[183] *How to Tell a Footprint from a Hole in the Ground: Ichnofacies of the Great Salt Lake Desert, Utah, USA*

The basins of paleolakes in the Desert West preserve an amazing archaeological record. Under certain conditions this archaeological record includes the contemporaneous trackways of humans and animals, these compelling, tactile features connecting people to landscapes across time. The discovery and study of trackways on the Old River Bed delta in the Bonneville basin of western Utah is a geoarchaeological story long in the making. It benefits from decades of CRM-driven survey, excavation, and mapping of a vast archaeological record and deltaic landforms on lands managed by Hill Air Force Base and Dugway Proving Grounds. It benefits further from our being wrong, occasionally, rearranging our interpretations, learning from others, and going back to study the same localities repeatedly. We present the geoarchaeological setting—stratigraphic, taphonomic, and chronologic—of a late Younger Dryas ichnofacies on the Old River Bed delta as people made use of an expanding deltaic wetland while watching a huge lake disappear.

Young, D Craig [223] see Freund, Kyle

Young, Michelle

[172] *Translocal and Imagined Communities of the Chavín Phenomenon, Peru*

Contact period documents indicate that many highland Andean groups claimed descent from other-than-human entities within the landscape. From mighty mountain lords (*apu*) to high-altitude lagoons (*cocha*), Andean peoples' origins, and their identities as broadly constructed, have been understood as tied to ancestral places. But was local topography and placemaking the only source of indigenous Andean identity? Archaeological excavations in the Huancavelica region of Peru offer an opportunity to examine the role of mobility and relationality in the construction of community identities. I argue that the patterns of ritual architecture and ceramics of the first millennium BCE that archaeologists refer to as the "Chavín Phenomenon" was produced through *translocality*; that is, interactions that produce communities unbounded by space (Womack 2024; see also Anderson 1983; Appadurai 1995; Furholt 2017; Gaspar et al. 2022; Goldstein 2000; Isbell 2000). Through this lens, the act of emplacement transcends discrete physical locations and can be understood as rooted in shared traditions, sacred values, and world views. This exploration of ancient identities reaffirms the complex, intersectional, and multifaceted nature of human identity construction in the past and present.

Young, Olivia (University College London)

[241] *Pressing Ancient Artifacts into a Modern Solution: The Reincorporation of Ancient Pestarola by a Contemporary Tuscan Winemaker*

Wine as an anthropological object is a tool, allowing us to study winemaking communities across time. The regional culture and economy of Tuscany has been shaped by the historical agricultural and production methods of winemaking. With the growing popularity of global wine brands, a local wine maker has started to explore production methods that are unique to a landscape which has technical expertise spanning millennia. This presentation summarizes the significance of ancient winemaking practices, such as the use of a *pestarola*, to the contemporary winemakers of the Amiata valley. By examining a case study of a winemaker producing *pestarola* wine in the Seggiano basin in the shadow of Monte Amiata, we can understand how the modern use of these volcanic wine stones builds on the critical historical connections that contributed to the prestige Tuscan wine holds, as well as influencing the taste of the wine. The consumption of *pestarola* wine invites a distinctive experience that this local winemaker is able to provide to global wine connoisseurs, tourists, and local residents alike. This discussion will highlight how local contemporary Tuscan winemakers are revisiting ancient winemaking methods to promote their renowned wine culture of tradition and quality.

Zaidner, Yossi (Hebrew University, Jerusalem), and Sharof Kurbanov (National Academy of Sciences, Dushanbe, Tajikistan)

[332] *Paleolithic Fieldwork in the Upper Zeravshan Valley, Tajikistan: First Results and Perspectives*

The Zeravshan River, which drains the northwestern part of the Pamir and Tian-Shan Mountains, is a part of what was recently named the Inner Asian Mountain Corridor; the piedmont sandwiched between the desert and high mountains of Pamir, Tianshan, and Altai. This corridor provided a refugium for human populations during periods of climatic oscillations and served as the major migration route during the Paleolithic period. Currently, stratified Paleolithic sites in Central Asia are still rare, far apart, and technologically diverse. In 2022, we initiated a survey in the Upper Zeravshan Valley, Tajikistan. During the survey, two stratified Paleolithic sites were discovered, Obi Borik and Soii Havzak. The Soii Havzak site is a rockshelter that was excavated during the 2023 campaign. The site is varyingly dense in archaeological remains. The richest layers contain charcoals and ash, bones, and lithic artifacts. According to the preliminary study of the lithic assemblages, Soii Havzak rockshelter contains at least three phases of occupation, two Upper Paleolithic stages and an earlier, probably Middle Paleolithic phase. Obi Borik is an open-air site located high above Zeravshan valley. The surface assemblage shows a strong Levallois component, suggesting a Middle Paleolithic age.

Zalazar, Raquel [327] see RuizDiaz, Julio

Zambrano, Carlos [75] see Stackelbeck, Kary

Zamora, Joseph [282] see Tantaleán, Henry

Zandarski, Benjamin (Army)

[64] *Preliminary Results of Archaeological Site Monitoring in Response to Low-Level Military Flights in Colorado*

This poster outlines the methodology and preliminary progress of an archaeological monitoring project design to evaluate unforeseen effects of low-level military helicopter flights over cultural resources in southeastern Colorado. The study encompasses 12 sites, including segments of the Santa Fe Trail and a variety of prehistoric and historic site types. Utilizing a blend of traditional archaeological survey techniques, high-resolution laser scanning, accelerometers, and geospatial analyses like NDVI and SAVI, the project aims to establish baseline data and detect any changes in condition over time. This work is crucial for understanding how military activities intersect with preservation of these culturally significant sites, providing a model for similar monitoring efforts in other regions.

Zaragosa, Gabriella (University of Texas, San Antonio)

[367] *Religious Ideology and Indigenous Groups at Mission San Antonio de Valero*

With the establishment of Mission San Antonio de Valero at its current location in 1724, over 100 Indigenous

groups were converted to Catholicism. The assimilation resulted in the Indigenous people adapting to the Spanish worldview and a new religious ideology. The mission saw a steady increase in occupants during its first few decades. Based on archival research, missionaries expanded the Indigenous living quarters in order to accommodate the influx of occupants to the mission. In the mid-1700s, Comanche raids near the mission resulted in the fortification of the site. This likely also influenced groups to remain at the mission. After its initial boom, Mission San Antonio de Valero's progress declined, and the mission was secularized in 1793. Although the site was no longer a mission, the Indigenous groups continued to reside within the Indigenous quarters and practiced their new beliefs. In combination with the archaeological record, this paper will provide an ethnographic examination of how the Indigenous communities merged traditional beliefs with Catholicism, and how the Alamo still acts as a place of memory today.

Zavodny, Emily [308] see Caraballo-Santiago, Angelica

Zavodny, Emily [160] see Riebe, Danielle

Zazueta, Maria, Gloria Hernandez-Bolio (Cinvestav Unidad Mérida), Montserrat Soria (Cinvestav Unidad Mérida), Vera Tiesler (Universidad Autónoma de Yucatán), and Patricia Quintana (Cinvestav Unidad Mérida)

[36] *The Application of Fragranced Corpse Ointments and Pigments in Southern Lowland Maya Funerary Traditions during the Classic Period*

The ancient Maya used to prepare the body of their deceased family members for its proper cycling according to long-standing family traditions and more collective ideas, anchored in Indigenous beliefs of the sublime vivifying qualities of colors and fragrant matter in communicating with the ancumene of the divine. Such an entity was the *itz* sap, a sacred matter with viscous and additive properties, which was deemed the plant equivalent to blood. The incorporation of red pigments in such *itz*-fragranced ointments was deemed to transcend toward the sacred spheres both by way of visual and olfactory stimulation. To understand more about such potions, this presentation provides novel archaeometric information of the organic compositions of reddish covers that adhered to the skeletal remains of 13 mortuary deposits, previously sampled from sites in Guatemala's Petén. While XRF, SEM, GCMS, and histomorphology documents the forms of applications of cinnabar and/or hematite, additional organic components, such as terpenes of the abietane type, confirmed their blending with fragranced funeral ointments. We conclude that the combination of inorganic and organic identification with histomorphological scrutiny offers a new, nuanced panorama of one of the most intimate funerary traditions followed among the ancient Maya of the Guatemalan Petén. ***This presentation will include images of human remains.

Zeanah, David (California State University, Sacramento), Brian Coddling, and Robert Elston (University of Nevada, Reno)

[126] *A Model for the Technological Reorganization of the Division of Labor during the Pleistocene-Holocene Transition of the Great Basin*

Pleistocene–Holocene Transition (PHT) assemblages in the Great Basin featured stemmed bifaces and formed flake tools, often accompanied by concave base projectile points, crescents, eyed bone needles, and open-weave basketry. Middle Holocene assemblages contain notched projectile points, expedient flake tools, milling stones, and tightly woven basketry. This technological reorganization is sometimes interpreted as a transition from large game hunting to broad-spectrum foraging. However, faunal assemblages show that PHT foragers pursued both large and small prey, while paleobotanical remains prove they consumed seeds without the milling and basketry technologies necessary to process them efficiently. Among ethnographic foragers in western North America, milling equipment and seed baskets are significantly associated with societies where men dress skins and work leather, whereas sewn fur garments and hide house covers are significantly more common when women are the primary skin dressers and leather workers. We model this as a trade-off between time required to acquire and apply hide-working skills and time necessary to create and use technologies essential for reducing seed handling costs. We propose that division of labor was reorganized as the reliability of large game encounters declined and the emphasis of broad-spectrum foraging shifted to resources with higher handling costs during the Early Holocene.

Zedeño, María Nieves (University of Arizona), and François Lanoë (University of Arizona)**[280]** *Reflecting on Middle-Holocene Human Survivance across the Plains*

David Meltzer's discovery of a wellfield with over 60 wells at the Mustang Springs Site, Martin County, Texas, points to survivance strategies deployed by mobile hunter-gatherers to manage harsh drought conditions during the Holocene Thermal Maximum (HTM). These wells, which date approximately to 6800 BP, attest to enduring attachments developed between mobile populations and their landscape. Across the Plains to the northwest, bison hunters encountered disastrous conditions after the Mazama Ashfall ca. 7600 BP. Montana's Billy Big Spring site, a hunting camp occupied from deglaciation times until historic times, shows evidence of the ashfall. Decisions about abandonment were made by most, if not all hunters. Yet, the site was never forgotten. It was reoccupied as soon it became habitable, when people returned to stay at the onset of the HTM. Together, these sites demonstrate strategies precontact Plains people developed to remain connected to place in nearly inhospitable conditions.

Zeidler, James (Colorado State University)**[46]** *Don Lathrap in the Classroom: On Gregory Bateson's Concept of "Schismogenesis" and Its Application to Culture Contact in the Archaeological Record*

Anyone who has taken an academic course with Don Lathrap rarely forgets the experience, as his lectures were both brilliant in content and disciplined in delivery. It was also in these classroom contexts that he sometimes expounded on authors and ideas central to his thinking but that curiously never made it into his published work. Such is the case with anthropologist Gregory Bateson and his concept of *schismogenesis* (Bateson 1935, 1958, 1972), defined as "a process of differentiation in the norms of individual behavior resulting from cumulative interaction between individuals" and exhibiting two variations labeled symmetrical and complementary schismogenesis. Bateson provided multiple ethnographic examples and social contexts of these behaviors, but Lathrap was especially drawn to cases of rival moieties within a given community and with situations of culture contact such as long-distance trade and conquest warfare. Still, his lack of concrete archaeological examples may have been due to the absence of clear archaeological indicators for such behaviors. This paper explores Bateson's concept using an archaeological episode of long-distance culture contact in the Jama-Coaque culture of coastal Ecuador. Strengths and weaknesses of the approach are evaluated and then compared with a recent resurgence of the concept in anthropological literature.

Zejdlik, Katie (Ohio State University), Zsolt Nyárádi (Haáz Rezső Múzeum), and Jonathan Bethard**[215]** *Szekler-Hungarian Cultural and Biological Persistence in a Rural Transylvania, Romanian Village: A Case Study from the Papdomb Site (AD 1100–Present)*

Transylvania, Romania, is a historic region with a tumultuous history. Work at the Papdomb archaeological site (AD 1050–present), located in the small village of Văleni (Patakfalva in Hungarian), provides a micro-look at how Szekler-Hungarians have remained steadfast and relatively unchanged since their arrival in the Carpathian Basin (twelfth–thirteenth century). This paper has two goals. First, it pulls together disparate lines of inquiry to demonstrate Szekler persistence through archaeological, archival, and genetic evidence. It then places that evidence within the larger context of Transylvania and the Kingdom of Hungary, ending with a discussion of how the evidence supports the Szekler's contemporary efforts toward belonging in Transylvania amid the contentious, post–World War I sociopolitical context that moved control of Transylvania to Romania. The secondary goal of this paper is to demonstrate the power of rural narrative and experience. Rural communities can be overlooked for their assumed lack of interaction and impact to larger social change as well as their stagnancy related to geographic or chosen, social isolation. This paper will show that the Patakfalva Szeklers were often forced to participate in larger social changes and that their resistance was not due to ignorance but strategic choices that allowed for their survival and success.

Zekas, Sophia (University of Utah), Daniel Dalmas (University of Utah), Lawrence Todd (GRSLE Inc.), and Kayta Guillory (University of Utah)**[191]** *Obsidian Sourcing at Castle Creek, Washakie Wilderness Using pXRF*

Linking individual artifact distributions to models of past human population dynamics provides critical insights into precontact behaviors and guides future research. While high-elevation areas of the Greater Yellowstone

Ecosystem show evidence of continuous occupation throughout the Holocene, key aspects such as social structure, demography, and migration remain less understood. The extensive surface record, including temporally diagnostic projectile points, coupled with obsidian source analysis, offers a unique opportunity to bring light to these dynamics. Using the logistic sourcing model developed by Dalmás et al. (2024), we applied pXRF analysis to obsidian artifacts from the 2024 GRSLE field season in the Washakie Wilderness (Shoshone National Forest). This approach refines obsidian source distributions and helps identify potential movement patterns of past populations in these mountain environments. By integrating sourcing data with surface-documented artifacts, we trace connections between lithic procurement, landscape use, and temporal sequences, revealing insights into past mobility, trade, and decision-making processes. These findings not only enhance our understanding of past behaviors but also inform future archaeological inquiries, guiding targeted surveys and shaping broader regional studies focused on human adaptation and movement in high-altitude settings.

Zensen-Simoes, Maria Carolina (USC), and Eric Heller (University of Southern California)

[122] *From Excavation to Virtual Reality: Digitally Preserving La Milpa North*

The archaeological site of La Milpa North in Belize offers a unique opportunity for cutting-edge research in digital archaeology. Building on over a decade of excavation data (Heller 2018), this project focuses on creating an accurate digital reconstruction of the site as it appeared during the Maya Terminal Classic period (750–900 CE). Utilizing the software “Blender” and “Unity,” the reconstruction incorporates detailed archaeological data, including field notes, drawings, and photographs from Dr. Heller’s team. This model is further contextualized through comparative analysis with reconstructions of other Maya sites, such as Copan (Tokovinine 2013). This project also explores the potential of converting the 3D model into an immersive virtual reality (VR) experience using Apple Vision Pro goggles, aimed at enhancing public engagement and education. The VR application offers a unique opportunity to protect the site from the environmental and structural degradation associated with large-scale tourism while providing a dynamic educational tool. By visualizing La Milpa North in a fully interactive environment, this initiative promotes Maya cultural heritage and makes the site accessible to any audience, without the need of a flight to Belize. This approach underscores the potential of digital archaeology to preserve and share knowledge in innovative ways.

Zensen-Simoes, Maria Carolina [109] see Heller, Eric

Zhai, Linlin

[338] *A Study of the Quailing Culture at the Site of Suyang*

This presentation discusses the nature of archaeological remains associated with the Qujialing Culture recovered at the Neolithic site of Suyang in Henan, China.

Zhan, Xiaoya (Fudan University), Xiaoying Ren (Fudan University), Ruilin Mao (Gansu Antique Archaeology Institute), and Shaoqing Wen (Fudan University)

[79] *A Possible Case of Juvenile Leprosy in Ancient China (First Millennium BCE)*

Leprosy, caused by the bacteria *Mycobacterium leprae* and *M. lepromatosis*, is an ancient disease that has been reported across the world. As many studies have explored leprosy in Europe, leprosy in East Asia is less frequently reported in bioarchaeology. In China, there are only two reports of leprosy so far, one in the Han Dynasty and the other in the Tang Dynasty. In contrast, the written records of leprosy could be traced back to earlier times. The Mogou site is located in Gansu, China. Compromised by two cultures (Qijia and Siwa), the site was occupied from 1750 to 1100 BCE. The specimen of interest, coded as M684, was a juvenile (12 ± 2 years old) and exhibited lesions on the nasal, palate, zygoma, and postcranial elements, including hands and feet. It led to the conclusion of a possible juvenile leprosy. The previous ancient DNA research proposed that leprosy was introduced into China from the Eastern Mediterranean via the Silk Road. The finding of this possible juvenile leprosy case raises the question of the origin of leprosy in China and may provide new insight into the spreading route of leprosy in the past. *****This presentation will include images of human remains.**

Zhang, Chencheng [277] see Reynolds, Robert

Zhang, Hua [288] see Procter, Ellery
 Zhang, Hua [288] see Conlan, Christine
 Zhang, Hua [316] see Tran, Cathy

Zhang, Wei

[338] *A Preliminary Survey and Study of Neolithic Sites on the Northern Foothills of the Qinling Mountains in the Xi'an Region*

This project focuses on Neolithic cultural remains in the Xi'an region along the northern foothills of the Qinling Mountains, dating back approximately 9,000–4,000 years. The aim of the project is to better understand the chronology, scope, distribution characteristics, and cultural significance of Neolithic sites in this region through regional archaeological surveys, prospections, and selective key excavations. By adopting a multidisciplinary, multi-perspective, and multilayered approach, the project seeks to comprehensively study the origins, formation, and early development of civilization in this region. It also aims to explore the background, causes, developmental paths, and characteristics of this process, ultimately clarifying the role and significance of the Xi'an region in the origin of Chinese civilization.

Zhang, Yao, and Chunxue Wang (Jilin University)

[191] *New Discoveries and Research on Related Issues in the Paleolithic Investigation of Fuxin, Liaoning*

In 2023, an archaeological team from Jilin University and Liaoning Institute of Cultural Relics and Archaeology conducted a Paleolithic survey in Fuxin, Liaoning, yielding a series of important discoveries. A total of 19 Paleolithic sites were uncovered, with over 1,000 stone artifacts including cores, flakes, tools, and chunks. Key sites such as Tayingzi Nanshan and Jianguo Reservoir Beishan revealed rich lithic traditions, encompassing both the typical flake-based industry of North China and the region's Upper Paleolithic microblade industries. The analysis of these artifacts explores technological exchange, lithic production methods, and site functions. The primary materials used were agate and flint, reflecting preferences for high-quality local resources. Most sites employed hammer percussion techniques, and some displayed microblade cores, indicating advanced tool-making skills. Comparisons with nearby sites, such as Hongshan in Inner Mongolia and Fenglin in Jilin, suggest regional technological exchange through migration and resource trade. Most of the sites likely served as short-term camps or production sites, reflecting the mobility of ancient populations. The sites are dated to the Late Upper Paleolithic, with some potentially transitioning into the Neolithic. This study provides new evidence of technological development and cultural exchange in northeastern Asia.

Zhang, Yun (Institute of Archaeology), and Mark Pollard (University of Oxford)

[348] *The Archaeological and Scientific Analysis of Blue-Decorated Ceramics in the Tang and Song Dynasties (618–1279 CE)*

[WITHDRAWN]

Zhang, Zhe

[86] *The Incipient of Cattle Domestication in China: Zooarchaeological Evidence from Neolithic Aurochs*

Aurochs have generally been considered ancestors of modern domestic cattle. It is broadly accepted that aurochs have been regarded as extinct during the Pleistocene, and domestic cattle were first introduced from the Near East to China during the Middle Neolithic period. However, aurochs were found to be the dominant species at Houtaomuga, a Neolithic site in northeast China. Their large numbers suggest that they were a significant terrestrial meat resource. Genetic analyses of ancient DNA indicate that they were wild animals, but they had reduced body sizes. The stable isotope analysis showed a mixed C₃/ C₄ diet, and there was also a selective slaughtering pattern. These factors suggest that the G2 aurochs came from a population that may have been somewhere along the range between fully wild and fully domesticated animals.

Zhilich, Snezhana [160] see Alekseitseva, Valentina

Zhong, Zhaobing [44] see Chen, Xiaohe

Zhou, Carmen [174] see Levchenko, Vladimir

Zhou, Jianhong

[338] *A Study of the Display of Prehistoric Site Museums: Taking Banpo Museum as an Example*

Banpo Museum, built on the Neolithic site of Banpo in Xi'an, Shaanxi Province, is one of the oldest archaeological site museums in China. This presentation discusses the display of prehistoric site museums in China, using Banpo Museum as an example.

Zhumatayev, Rinat [167] see Kalodner, Jacob

Zhuniskhanov, Aidyn [332] see Dupuy, Paula

Ziani, Ismail, Abdeljalil Bouzouggar (National Institute of Archaeological Science and Heritage), and Steve Khune (University of Arizona)

[281] *North African Atlantic Coast: A Major Refuge during the Late Pleistocene*

North Africa holds a central position in the debate on the emergence and evolution of our species, thanks to numerous archaeological discoveries, especially the unearthing of the oldest known remains of *Homo sapiens* in Morocco, dated to 300 ka. Additionally, the discovery of various archaeological markers reveals the complexity and adaptability of early *Homo sapiens*, such as the production of sophisticated industries using raw materials other than stone. The emergence of symbolic capacities, like the use of marine shells and ochre, as well as the diversification of resources and environments, also highlights this adaptability. However, data on the local paleoenvironmental context surrounding the emergence and evolution of *Homo sapiens* groups in North Africa is scarce, often limited to global climatic data derived from marine and continental cores located far from the study area. In this regard, we present anthracological results from the analysis of charcoal from three Paleolithic sites, located along Morocco's Atlantic coast. The findings demonstrate that Morocco's Atlantic coast served as an ecological refuge, characterized by climatic stability throughout the Late Pleistocene. These paleoenvironmental data are key to addressing numerous cultural questions related to the intense occupation of Aterian groups on the Atlantic coast during the Middle Stone Age.

Zimmer-Dauphinee, James (Vanderbilt University), Yuankai Huo (Vanderbilt University), Jordan Nieuwsma (Vanderbilt University), Nathaniel VanValkenburgh (Brown University), and Steven Wernke (Vanderbilt University)

[189] *DeepAndesArch: Assessing Performance of an AI Model for Satellite Imagery Survey of the Andes*

Social and political networks in the Andes operated far beyond the scale that can be captured in any individual archaeological research project, while combining archaeological data from diverse projects presents challenges in data compatibility and unsystematic sampling. Satellite imagery and deep-learning computer vision models enable such trans-regional archaeological perspectives at scale. This poster presents the results of DeepAndesArch, a deep learning model for identifying archaeological structures in very high-resolution multispectral satellite imagery of the Andes. This model utilized cutting-edge vision transformers (ViT) and a diverse dataset of manually identified archaeological features to map the locations of several classes of archaeological features across about two million km² in Andean South America. We evaluate the model's performance by comparing the model's predictions to validation data collected by teams of archaeological professionals, showing both the quality of the model's results, and the strengths and weaknesses of the model when compared to manual imagery survey. We also discuss some of the many applications of this novel dataset and ongoing analyses.

Zimmerman, Larry (Indiana University Indianapolis)

[342] *"Chicken Strips" McGuire and the Development of Indigenous Archaeology*

Randy McGuire's career in archaeology overlapped several major shifts in the discipline. This paper examines his contributions to Indigenous Archaeology, which developed organically from a discipline unsettled by global cultural processes related to indigenization. By the late 1970s Indigenous demands for decolonization of archaeology, especially repatriation of Ancestors, became a focus for debates within the discipline. By the mid-1980s archaeology also became embroiled in an epistemological shift. Postprocessual archaeology

emerged from a critique of processual archaeology and recognized and openly acknowledged the subjectivity of archaeological interpretations centered on meaning, cultural memory, politics, and ethical practice. Conflation of postprocessual archaeology with an Indigenous critique appeared in the late 1980s as Indigenous Archaeology. Since then, McGuire has been a central figure in addressing Indigenous concerns by developing collaborative projects, by training Indigenous archaeologists, and by exploring necessary shifts in epistemology, ethical practice, activism, advocacy, and use of archaeology in social justice issues involving other marginalized people.

Zimmermann, Mario (Boise State University), Jayson Gill (Wesleyan University), Jacob Fruhlinger (Idaho National Guard), Tessa Amend (Idaho National Guard), and Samantha Beier (Boise State University)

[198] *Aligning Pedagogy, Compliance, and Research: A Year-One Assessment of Boise State's Semester-Based Field School*

The completion of an archaeological field school continues to be one of the main qualifying criteria for employment in the broader realm of cultural resource management. Yet costs associated with participation in either domestic or international programs keep increasing. Moreover, 4–6-week, full-time field schools pose additional challenges regarding accessibility and inclusivity at a time when qualified technicians are desperately needed. In this context, in 2024 the Department of Anthropology at Boise State University decided to switch its field school from a full-time summer program to a once-a-week, semester-long course. In this paper, we will discuss goals, challenges, and outcomes after Year One. More specifically, we will address the implications of said shift for prioritization in the areas of pedagogy, compliance, and research. This assessment of experiences and observations benefits from the fact that the program relies on the input and active participation of partners from academia, government agencies, and the private sector. Lastly, exit interviews with students who had previously partaken in other programs also inform the decisions guiding future iterations of our field school.

Zimmermann, Mario [192] see Portillo, Eduardo

Zoiss, Emma (University of Montana), Meradeth Snow (University of Montana), and Michael Mathiowetz (Getty Research Institute)

[297] *Mitochondrial DNA Diversity in West Mexico*

The world has always been connected through the movement of people, exchange of goods, and sharing of cultural traits; thus, evidence of such can be found within the genomes of individuals, as well as the archaeological sites they leave behind. Despite attempts at systematic research, we are still missing critical information about prehispanic populations in the Aztatlán region, one of the least studied regions of prehispanic Mesoamerica. The present research includes the collection and comparison of whole mitogenomes between recovered individuals from a variety of Aztatlán sites to investigate questions of gene flow, migration, genetic diversity/variation, kinship, etc. The presence of individuals from highland and coastal sites in the region, including Amapa and Peñitas in the Aztatlán core zone in Nayarit, and Tizapán el Alto in the Jalisco highlands, allows for additional investigation of site/individual relationships, as well as regional trade/migration routes.

Zonno, Sabina [227] see Dodd, Lynn

Zori, Colleen (Baylor University)

[374] *Metalworking on the Move in the South-Central Andes: Models for Metallurgical Technology Transfer in the Pre-Inka and Inka Periods*

Recent research on prehistoric Andean metal production highlights the variability in metalworking technologies found across western South America. Nonetheless, there exist clear similarities between these different regional metal production traditions, parallels that evidence complex histories of technology transfer and the movement of both people and knowledge. I begin with a look at the history of smelting and metal purification in the south-central Andes, tracing a tradition that relied primarily—but not exclusively—on wind-driven furnaces called *huayras*. I draw on ethnographic evidence from modern metallurgists using

traditional furnaces, as well as the experiences of archaeologists performing experimental reconstructions, to explore the bottom-up mechanisms by which furnace technologies may have been adopted, retooled, and deployed by different groups in the pre-Inka period. A distinct scenario is suggested by the systematic changes in smelting, purification techniques, metallurgical tools, and alloys that occurred throughout the south-central Andes as cultural groups were incorporated into the Inka Empire. Although this attests to the success of imperial efforts to redirect local labor and metallurgical skill toward the demands of the empire, it also fostered novel technological linkages and influence between geographically distant metallurgical traditions of the Andes that had had little prior contact.

Zuckerman, Molly (Mississippi State University; Cobb Institute of Archaeology; Smithsonian Institution National Museum of Natural History), Sierra Malis (Smithsonian Institution National Museum of Natural History), Jesse Weaver (Mississippi State University), D. Shane Miller (Mississippi State University), and Derek Anderson (Mississippi State University)

[343] *Reconstructing Social Identity, Impairment, and Potential Caregiving Relative to Treponematoses at the Pre-European Contact Aklis Site, St. Croix, USVI*

Despite extensive clinical documentation of the psychosocially and physically debilitating effects of treponematoses (e.g., yaws) and intensive investigations into the disease's ancient burden in the Americas, physical impairment as well as disability and health-related caregiving have not yet been substantially explored relative to treponematoses in the pre-European-contact Americas. Here, we consider impairment downstream to healing lesions diagnostic of treponematoses, and potential disability and caregiving, relative to the social identity of an adult individual exhumed during recent salvage excavations at the Aklis site. Aklis (12Vam1-42) is a pre-European-contact coastal cemetery, midden, and habitation site on St. Croix, USVI. St. Croix has been the focus of little anthropological work, yet Aklis is likely one of the Caribbean's largest ceramic-era cemeteries. Additionally, Aklis yields highly atypical variation in burial position—exemplified by the individual focused on—and high frequencies of midden and secondary burials; likely represents a community transitioning into the still poorly understood social complexity that European invaders fragmented; and, like St. Croix, lacks a known Indigenous descent community, largely due to colonial violence. Therefore, reconstructions of caregiving may grant otherwise inscrutable insights into biocultural adaptations to debilitating endemic disease relative to social identity and ethnogenesis in the immediate precontact Caribbean. *****This presentation will include images of human remains.**

Zuckerman, Molly [333] see DeGaglia, Cassandra

Zuckerman, Molly [237] see Diboyan, Larra

Zuckerman, Molly [88] see Weaver, Jesse

Zurek-Ost, Andrea (University of North Carolina, Chapel Hill)

[294] *Applications of Isotope Analysis to Conflict Archaeology: A Case Study from the Northern Iberian Peninsula*

Isotopic approaches to investigate geographic area of origin, mobility, and dietary practices have long been applied to archaeological and forensic contexts. Isotopic ratios from human bones and teeth can be used to derive information about cultural, geographic, and demographic group membership. This presentation leverages isotopic approaches in an effort to better understand large, commingled assemblages of human remains associated with past conflicts. Strontium, oxygen, carbon, and nitrogen isotopic ratios are examined from individuals buried in the Silo of Charlemagne cemetery (located in Orreaga/Roncesvalles in northern Navarre, Spain), a site that holds the remains of individuals associated with multiple military conflicts, including the War of the Pyrenees and the Peninsular War. Here we summarize the isotopic results from five years of archaeological investigations at the Silo of Charlemagne and identify patterns that can contribute, alongside archival and archaeological data, to identifying potential military affiliations as well as geographic areas of origin of the individuals interred in the cemetery. *****This presentation will include images of human remains.**

Zwyns, Nicolas [234] see Carlson, Meredith

Zwyns, Nicolas [320] see Goring, Daniel