

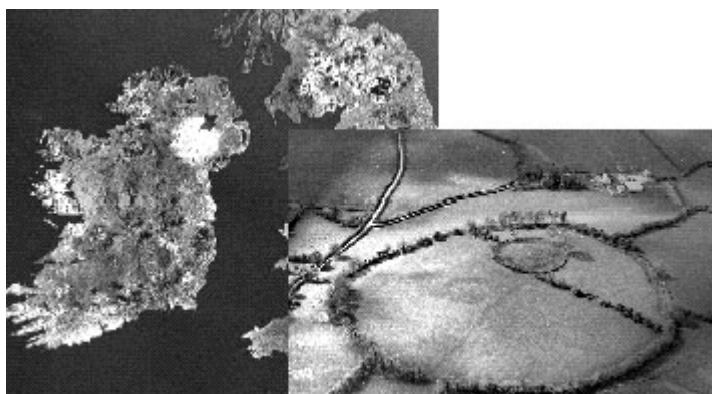
# Society for American Archaeology 15(1)



January 1997

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**"The use of new geophysical instruments and recently developed computer software programs will, in the near future, revolutionize the way archaeologists structure their survey and excavation work."**



*Click on the image to go to the article*

**We argue that this application of new equipment, however, must go beyond simply being "new" or "neat" techniques generating better "descriptions" for archaeologists. The ultimate contribution of these improved technologies will be in our ability to advance cultural evolutionary theory."**

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## TABLE OF CONTENTS

[Editor's Corner](#)

[News from the Public Education Committee](#)

[Letters to the Editor](#)

[Archaeopolitics](#)

[Briefings](#)

[Report from the Executive Board: Fall 1996](#)

[SAA Mission Statement](#)

[Cost-Effective Email Utilization and Internet Access](#)

[A Portrait of the Southwestern Archaeology Web Site](#)

[Interface--New Developments in Geophysical Prospecting and Archaeological Research](#)

[Tennessee Music, Culture, and Archaeological Treasures, or, "Don't Go Stir Crazy in the Meeting Rooms"](#)

[Insights--Changing Directions: A Roundtable Discussions](#)

[Exchanges--Archaeological Investigation and Conservation in Honduras](#)

[Working Together--Painting a "New" Face on CRM: Integrating Traditional Culture and Archaeology](#)

[Bureau of Land Management Celebrates its Golden Anniversary](#)

[Student Affairs](#)

[News and Notes](#)

[Positions Open](#)

[Calendar](#)

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## Editor's Corner

One of the most enjoyable aspects of editing *SAA Bulletin* has been the development of new columns, and one of my favorites is Insights, which reports on technological advances applied to archaeological problems. I recently had the pleasure of hearing a paper at the Institute of Andean Studies meeting at Berkeley by John Rick, who has contributed two columns to the series, one on laser transits and the other on laser leveling and measuring devices. John's theme at the meeting was the use of these technologies at the spectacular Andean site of Chavín de Huantar to better understand how the site was constructed and how it has been changed through time. While his graphics were stunning, he reminded the audience that his goal was to be able to "bring Chavín home" through the use of these technologies; he could literally recreate the site in a number of highly innovative, and above all, *useful* ways. That is, he has been able to create a research tool, not simply a series of pretty pictures.



The Insights column in this issue by Dan Larson and Elizabeth Ambos is another example of how technological tools have the potential to revolutionize archaeological research. Their emphasis on the integration of theory, method, and research expectations parallels John Rick's desire to create an integrated research tool, and the outcome of the application of the methods are the same: the creation of a body of useful empirical data that can be used to explore questions of both culture history and theory in new and unexpected ways.

Technology all too often gets in the way of solving problems, but I think that in both examples, these technologies point the way to exciting research futures our discipline has only dimly begun to perceive. We hope to provide similar examples in future Insights, and we welcome your opinions.

## News from the Public Education Committee

**Archaeology Education at the Nashville Meeting.** Archaeology education is one of the highlights of the many events at the annual meeting in Nashville, Tennessee. For those planning ahead, the following is a brief preview of some of the sessions that you will want to include in your schedule. Many of these are sponsored by the Public Education Committee. More details are available in the preliminary program mailed in late December.

**Seventh Annual Public Session--"Interesting PASTimes: Exploring Caves, Building Temple Mounds, Discovering New Cultures."** Three experts will discuss the lives and times of prehistoric inhabitants of the southeastern U.S. on Saturday, April 5, 1-5 p.m. Speakers include Patty Jo Watson ("Cave Archaeology in Eastern North America"), Bruce D. Smith ("The Temple Mound Builders of Eastern North American"), and Charles Hudson ("Hernando de Soto and the Protohistoric Southeast"). For more information, contact organizer Carol Griffith at (602) 542-7141 or email [cgriffith@pr.state.az.us](mailto:cgriffith@pr.state.az.us).

**State Archaeology Week/Month Poster Exhibition and Contest.** The public session will also feature a display of State Archaeology Week/Month Posters, part of a contest sponsored by the committee and the Council of Affiliated Societies. The posters will be on exhibit during the entire SAA meeting and in the public session, where prizes will be presented. The deadline for poster submissions is March 3, 1997. For information on the contest and having your state's poster displayed, contact Ann Valdo Howard at (602) 542-7138 or email [ahoward@pr.state.az.us](mailto:ahoward@pr.state.az.us).

**Public Involvement Poster Session.** A poster symposium titled "Public Money/Public Heritage: Delivering the Past to the Present" will feature 10 posters highlighting successful heritage education and public involvement programs. Presented on Thursday, April 3, 8 a.m.-12 p.m., and organized by Johna Hutira of Northland Research, the posters describe programs by Native American communities, public utility companies, and private consulting firms. The emphasis will be on heritage education, public benefits, and delivering the results of archaeological research to a diverse public audience. Contact Johna Hutira at (602) 894-0020 for details.

**Successful Outreach Program Development.** A forum, "Pathways to Successful Outreach," will feature six speakers who have successfully brought diverse archaeology programs to the public. They will share their experiences in setting goals, initial planning, the steps required to establish the program, and challenges encountered along the way on Thursday, April 3, 8-11 a.m. The forum will begin with a description of each program and questions on specific issues, but most of the session will be open discussion on the challenges and rewards of establishing outreach programs. Some of the programs presented include the Bureau of Land Management's Intrigue of the Past (Shelley Smith), the Mississippi Valley Archaeology Center's Archaeology Education Program (Bonnie Christensen), Crow Canyon Archaeological Center (Ricky Lightfoot), the Washington High School Archaeology Institute in partnership with the University of West Florida (Glenda Marshman, Mike Davis, and Judith Bense), the Texas Archaeological Society (Patricia Wheat), and the Florida Museum of Natural History (William Marquardt). Representatives from other programs are encouraged to come and share their perspectives. Attend this session for practical advice on starting your own archaeology education program or joining efforts in your state. For information, contact cochairs Jeanne M. Moe, (801) 539-4060, email [jmoe@ut.blm.gov](mailto:jmoe@ut.blm.gov); or Dorothy Schlotthauer Krass, email [dorothy\\_krass@saa.org](mailto:dorothy_krass@saa.org).

**Boy Scout Archaeology Merit Badge Workshop.** S. Alan Skinner and Patricia Wheat will focus on "Implementing the Archaeology Merit Badge in Your Community." With the recent introduction of the Archaeology Merit Badge by the Boy Scouts of America, many archaeologists will be called upon to serve as merit badge counselors and to work with Scout troops. Scouts participating in this program will be directed to participate in field and laboratory projects under the direction of qualified archaeologists. This workshop is designed to explain the requirements, determine your role in the merit badge process, and explore the

responsibilities, opportunities, and challenges of implementing this new venue in public outreach. The workshop will take place on Friday, April 4, 8-10 a.m. Contact S. Alan Skinner at (214) 368-0478 or email [arcdigs@aol.com](mailto:arcdigs@aol.com).

For more information on Public Education Committee activities, contact Edward Friedman, Bureau of Reclamation, P.O. Box 25007, D-5300, Denver, CO 80225, (303) 236-1061 ext. 239, email [efriedman@do.usbr.gov](mailto:efriedman@do.usbr.gov).

*Compiled by Teresa L. Hoffman, Archaeological Consulting Services, Tempe, Ariz.; with contributions from Dorothy Krass, SAA, and Johna Hutira, Northland Research.*

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**LAST PAGE**

**TABLE OF CONTENTS**

**NEXT PAGE**

---

## Letters to the Editor



Not directly addressed by G. A. Clark in his [letter to the editor](#) in the November 1966 *SAA Bulletin* is another disheartening aspect of the "demon-haunted" world of which NAGPRA is both a creature and transmitter. This is the willingness of many archaeologists to aid and abet dilution of the intellectual integrity of their own discipline. Almost as depressing is its silent witnessing by colleagues in other fields, numbers of whom take the attitude "it is really no concern of ours."

Nativists notwithstanding, the philosophy and history of science testify to the quite different attributes of science compared to the recitation of stories derived from "traditional knowledge." Archaeology, however primitive its present developmental status, is ensconced in the former realm that G. G. Simpson and others have labeled "historical science." I am loathe to see that status jeopardized. And so it is. Anyone who has observed or has participated in meetings directly or indirectly concerned with NAGPRA, relations between Native American/First Nations peoples and archaeologists, or professional ethics knows how difficult it is to protect the intellectual integrity of the discipline against extrinsic demands that are at odds with its epistemological underpinnings. There are always some vocal ideologues impervious to logical reasoning; but more usually it is well-meaning advocates of "repressed voices," "other stories," "resistance," "different realities," or "traditional knowledge" who unintentionally represent a corrosion of epistemological rigor with their call for the incorporation into archaeology of "other ways of knowing," of "traditional knowledge." Invariably committed to the support of NAGPRA as an instrument of justice, they find support in the political arena for reasons that Clark explains. But crucial support is also forthcoming from within archaeology itself in the form of public silence. I am sure I am not alone in having received words of support in hallways after tense exchanges in meeting rooms where those endorsements would have been more useful.

Next to balkanizing history into discrete NO TRESPASSING properties, perhaps the most debilitating demand--or "recommendation" in the demon-haunted world's more polite forums--is to grant co-equal status to myths, folktales, spiritual insights, and other "traditional knowledge" along with archaeological (scientific) knowledge in searching out and making sense of the past. Admonishments to "respect" and "acknowledge" the "validity of oral history and traditional knowledge"--something apart from the respect due persons, I would stipulate--are commonplace in the discipline today. They are quite seriously advocated by professional archaeologists in innumerable papers, exchanges, and guidelines for professional behavior as desirably integral to the pursuit of archaeological investigations.

"Traditional knowledge" has produced flat earths, geocentrism, mice spontaneously generated out of piles of rubbish, women arising from men's ribs, talking ravens, polygenesis, the superiority or inferiority of this group or that, and the historically latest "first people" of the Black Hills upwelling from holes in the ground. Science, by its very nature, must challenge, not "respect" or "acknowledge as valid," such folk renditions of the past. I do wonder if the same calls for accommodation of oral history, "traditional knowledge," and "other ways of knowing" would be considered as equally appropriate and binding on the archaeological community if their proponents were not themselves (or others speaking for) Native American or First Nations people but were, for example, Anglo-Saxon Christian fundamentalists pushing their own knowledge claims.

Common decency requires respect for people holding a pre-scientific metaphysics. But it does not require compromising the systematic and interdependent axioms, postulates, corollaries, and methodologies that hard-won experience has demonstrated as most responsible for whatever advancement of knowledge archaeology can

boast. NAGPRA is the law of the land and its true intellectual costs are yet to be computed. More costly yet will be acquiescence in the re-mystification of the past.

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[LAST PAGE](#)

[TABLE OF CONTENTS](#)

[NEXT PAGE](#)

---

# Archaeopolitics

## *Donald Forsyth Craib*

Several issues concerning the Native American Graves Protection and Repatriation Act (NAGPRA) dominated SAA's government affairs fall agenda.

**Bill to Amend NAGPRA Introduced.** On July 23, 1996, Sen. Daniel Inouye (D-Hawaii) introduced S. 1983, a bill to amend the act. The bill was marked up a few days later by the Senate Committee on Indian Affairs, and it passed the Senate in early September. A companion bill was introduced in the House by Rep. Neil Abercrombie (D-Hawaii) on September 17.



The proposed amendment would add an additional requirement in instances where Native American human remains are intentionally excavated or removed for purposes of study by requiring written consent from lineal descendants, if already known or ascertainable, or each appropriate tribe or Native Hawaiian organization. The amendment would also require notification to Indian tribes and Native Hawaiian organizations when human remains are inadvertently discovered on federal land.

In a letter to Senate Committee on Indian Affairs Chairman John McCain (R-Ariz.), Bill Lipe wrote, "SAA believes that the proposed amendment to NAGPRA may have unforeseen consequences for federal agency compliance with the National Historic Preservation Act and may result in substantial delay or cancellation of federally funded, permitted, or assisted projects." Lipe stated further that "the implications of the proposed amendment should be further understood before it is presented to Congress" and suggested that the committee convene a hearing to take testimony from all interested parties.

SAA coordinated a lobbying effort with industry during the last few days of the Congress to stall the bill until Congress could take a closer look at its ramifications.

**NAGPRA Draft Recommendations.** In October, SAA submitted the following comment letter from William D. Lipe, SAA president, and William A. Lovis, chair, SAA Committee on Repatriation, to the NAGPRA Review Committee concerning the committee's draft recommendations on the disposition of culturally unidentifiable remains:

The Society for American Archaeology would like to take this opportunity to thank the NAGPRA Review Committee for its efforts to grapple with this difficult issue. SAA appreciates the committee's consideration of earlier SAA comments as it developed the most recent "Draft Recommendations Regarding the Disposition of Unidentifiable Remains." The following comments reflect a substantial analysis and discussion of the current draft by members of the SAA Executive Board and the Committee on Repatriation and incorporate suggestions offered by some of our 6,000 members.

There are three primary components to the most recent draft that we would like to address: the concept of shared group identity as it relates to the disposition of culturally unidentifiable remains; the proposal to amend NAGPRA in order to include non-federally recognized tribes in the repatriation process; and the proposal to amend NAGPRA to provide for the disposition of culturally unidentifiable associated funerary objects.

1. The Review Committee's solution to the disposition of culturally unidentifiable human remains is to establish in regulation a definition of shared group identity as "a relationship between a present-day Indian tribe or tribes



and an earlier group based on: (1) direct historical links and/or (2) a combination of geographical, temporal, and cultural links." This change effectively extends the definition of cultural affiliation that appears in the act by substituting the quite general term "relationship" for the statute's much more restrictive "identity." Shared group identity was intended by the Congress to be a relatively restrictive criterion; the earlier group should have essentially the same identity as the modern tribal group; they should not merely be "related" on the basis of vagaries of location extended backward or on generalized cultural links. SAA believes that this definition is contrary to the intent of Congress and that the proposed change would, in fact, make the implementation of NAGPRA even more difficult. Under the revised definition of shared group identity, an earlier group would frequently have cultural affiliation with two or more contemporary and culturally distinct Indian groups that could not reasonably be viewed as having shared identity.

While we understand that the revised definition is designed to resolve the problems caused by the lack of cultural affiliation, we fear that the proposed resolution may create more serious problems than it appears to resolve. For example, the new definition of shared group identity would frequently create joint cultural affiliations in cases where there is already a clear-cut affiliation with a single modern group, based on the current legislative and regulatory language. Under the proposed definition, many claims of cultural affiliation that are evidently very much weaker would have to be accepted with equal legitimacy. It is our opinion that such an outcome is not a workable solution to the problem and will further complicate an already difficult repatriation process.

2. From the time that NAGPRA was being drafted, the Society for American Archaeology has supported the principle of more inclusiveness in the repatriation process. While a proposal to amend NAGPRA to include "legitimate" non-federally recognized Native American groups is consistent with our position, it is precisely the specific determination of legitimacy that has always been the problem. Thus we feel that it is incumbent on the NAGPRA Review Committee to specify how such legitimacy can be established.

3. The proposal to amend the law to provide for repatriation of culturally unidentifiable associated funerary items appears to be a different aspect of the first addressed above. As we understand the proposal, no amendment would be required if the proposed definition of shared group identity were adopted. The funerary objects would no longer be "unaffiliated," but through the convolutions of the proposed redefinition would become "affiliated." Until the problem of unaffiliated human remains can be better resolved, SAA feels that this amendment would not be helpful.

In sum, the Society for American Archaeology does not believe the draft as currently written provides a workable solution for the disposition of unaffiliated human remains. We believe that it would foster additional contradictions of interpretation and, in fact, make compliance with NAGPRA, including repatriation, more difficult for tribes, institutions, and agencies. Further, we believe the proposed redefinition of shared group identity is contrary to the congressional intent in NAGPRA.

The approach taken by the NAGPRA Review Committee assumes that in the legislation's charge to "[recommend] specific actions for developing a process for the disposition of [unidentifiable] remains," "disposition" is equivalent to "repatriation." The record clearly shows that Congress recognized other forms of disposition for affiliated and unaffiliated remains. Repatriation is only one potential disposition outcome. Perhaps the Review Committee should recognize that there is a substantial class of human remains that are truly "culturally unidentifiable."

Clearly, it will be very difficult to develop a process for determining the disposition of unidentifiable remains upon which all constituencies can agree. Nonetheless, it is essential that a solution to this problem not create additional problems of implementation for aspects of NAGPRA that are currently working. In its future engagement of this issue, we believe it is essential that the committee take a broad view of the possible dispositions of unidentifiable remains, rather than pursuing a narrow view focusing on repatriation as the sole option--an alternative that Congress itself intentionally avoided in drafting NAGPRA.

Despite our criticisms, the Society for American Archaeology appreciates the careful consideration and work that went into these draft recommendations, and we hope that these comments will help advance the discussion.

However, as SAA has recommended to the NAGPRA Review Committee on at least two prior occasions, insufficient effort has been expended in taking advantage of our collective experiences in repatriating culturally affiliated remains, as well as in analyzing and reporting unidentifiable remains. It is our opinion that it is this experience that will allow the Review Committee to more effectively address the problem of culturally unidentifiable remains.

The Society for American Archaeology thanks the committee for this opportunity to comment on the draft recommendations. If we may be of further assistance in the continued formulation and review of this document, please do not hesitate to contact us at 900 Second St. NE #12, Washington, DC 20002.

*Donald Forsyth Craib is manager of government affairs and counsel of SAA.*

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[LAST PAGE](#)

[TABLE OF CONTENTS](#)

[NEXT PAGE](#)

---

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## Briefings

*Tobi Brimsek*

A new year is unfolding, and SAA activities are growing and building toward what we believe will be the second largest annual meeting in our history. Join us April 2-6, 1997, at Opryland Hotel in Nashville, Tennessee. Preliminary programs were dropped in the mail in late December; open them to discover the richness of this year's program. From papers to excursions, the meeting holds the promise to be most memorable. For a peek at some of the logistics of the meeting, drop by our web site, <http://www.saa.org>. Don't miss the great deals from Opryland International Travel to get to the meeting, and be sure to reserve your rooms at the Opryland Hotel well in advance. I look forward to meeting many of you in Nashville!

As we begin this new year, I would like to reflect for a moment on my first nine months working with the society. In brief summary, they have been action-packed, challenging, and exciting. SAA continues to grow and play a vital role in key arenas. You could not ask for more. As a regular feature of my column, I would like to share some brief notes from the perspective of the staff.

**Helping Hands and Minds.** SAA staff has had the good fortune to work with three interns this fall. Each has focused in a different area of society operations. A graduate student from George Washington University is working with Dorothy Krass in public education, an undergraduate from American University is working with Carol Hawk in marketing, and an undergraduate from George Washington is rotating through the society office gleaning experience from each of the program managers.

**Public Education Launches New Project.** With the help of a grant from the Bureau of Reclamation, the Public Education Committee and the Public Education program will initiate a project to update and annotate the resource guide, *Classroom Sources in Archaeology*. Any inquiries may be directed to Dorothy Krass, manager, Public Education, SAA, 900 Second St. NE #12, Washington, DC 20002.

**Student Recruitment.** The poster campaign is on! Looking to increase student participation in SAA, we have mailed recruitment posters to over 150 colleges and universities throughout the western hemisphere. The response cards are already coming back to the office. And speaking of recruiting, have you had the opportunity to recruit a new member lately?

**Going, Going, Gone.** Due to its overwhelming popularity, *Archaeology and You*, written by SAA members George Stuart and Frank McManamon, is currently out of stock. This publication is a joint effort of the United States Department of the Interior, in particular the National Park Service and the Bureau of Reclamation; the National Geographic Society; and the Society for American Archaeology. Since May 1996, 15,000 copies have been distributed by SAA, above and beyond those mailed to SAA members.

**Catching up.** You can look forward to receiving your journal of choice more regularly beginning this year. Scheduling is back on track for both *American Antiquity* and *Latin American Antiquity*, and we anticipate mailing each issue by the end of the month on the cover.

*Tobi Brimsek is executive director of the Society for American Archaeology.*

[To Top of Page](#)

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# Report from the Executive Board: Fall 1996

*Keith W. Kintigh*

The SAA Executive Committee met October 3-6 in San Diego, and the full Executive Board held its fall meeting November 1-3 in Tempe, Ariz. This article reports only on the major issues considered and actions taken at the fall board meeting.

**SAA Mission Statement.** The board approved a final version of the SAA Mission Statement printed on page 7. This statement reflects the board's sense of the mission and goals that will guide SAA activities.

**Publications.** The SAA journals will both be on schedule for the 1997 volumes. The board is extremely grateful to *American Antiquity* editor Lynne Goldstein, *Latin American Antiquity* coeditors Gary Feinman and Linda Manzanilla, and managing editor Janet Walker for their fine work in editing the journals, for their efficient processing of manuscripts, and for getting the journals back on schedule. Through an additional allocation of funds to *American Antiquity*, 60 additional pages of articles were published in the 1996 volume, reducing the backlog of unpublished articles and allowing prompt publication of accepted manuscripts. This allocation also allowed SAA to hire additional editorial assistance that permitted both *American Antiquity* and *Latin American Antiquity* to get back on schedule.

Henceforth, journal editors are asked to provide written reports for each board meeting. These reports will include standard statistics that will allow the board to assess the progress of manuscripts through the editorial office. The board's goal is to have an informational basis for quickly identifying and correcting problems that have occurred in the past in the operation of the editorial offices (but that are certainly *not* evident now).

The board decided that no issue of the *SAA Bulletin* would be put up on SAAWeb until the following issue has been received by members. This preserves an important member benefit and protects advertisers. Making the current issue of *SAA Bulletin* available on the web will be reconsidered when member-only access to portions of SAAWeb becomes available.

**Government Affairs.** The extensive activities of the government affairs program led by Government Affairs Committee chair Judy Bense and Government Affairs manager Donald Craib are reported in an article on page 4. The Committee on Repatriation submitted comments on the NAGPRA Review Committee's Draft Recommendations Regarding the Disposition of Culturally Unidentifiable Human Remains and Associated Funerary Objects and recommended the SAA position on the proposed amendments to NAGPRA that were introduced, but not passed, late in the 104th Congress.

**Meetings.** The program chair reports that although we will not break the record set last year in New Orleans, more presentations have been submitted for the Nashville meeting than for the very successful 1995 meeting in Minneapolis. Following the recommendations of the Task Force on Meetings Development, the board decided that starting at the 1998 meeting in Seattle, all papers presented at the annual meeting will be limited to 15 minutes. The board felt that the advantages of this proposal, mainly creating substantially more room on the program, greatly outweighed the disadvantages of shorter papers.

**SAA Board and Committees.** As the activities of SAA have expanded, the Executive Board has been unable to keep up with the growing agenda. Generally, the board is moving to reduce its active involvement in the operations of the society so it can better focus on policy issues and strategic planning. Operational issues are increasingly dealt with by the Executive Office in Washington and by the Executive Committee of the board

(consisting of the officers, officers-elect, and the executive director). In light of this change, the Executive Committee developed proposals regarding governance and committees. After considering these proposals, the board took several actions designed to increase the effectiveness of its own work and to better address the needs of SAA committees.

Henceforth, the editors of *American Antiquity*, *Latin American Antiquity*, and the *SAA Bulletin* will typically not serve *ex officio* on the board. (However, until a bylaws change is approved by the membership, the *American Antiquity* editor remains *ex officio*.) Editors will continue to be fully consulted on publications issues that come before the board and will meet separately with the board at the annual meeting. This reflects the ongoing changes in the board's role, rather than any change in the importance of the editors' work or of publications to SAA. Among other things, this change permits the editors to spend more time at the annual meeting "taking the pulse of the society" by attending sessions and interacting with members, including prospective authors.

From now on, committees will be asked to report only once a year. In the spring, each committee will report on its activities during the past year and propose programs and a budget for the coming year. This will remove the necessity for a report in the early fall, at a time when many committees are just beginning work on their programs. Board liaisons will play a more active role in communicating between the committees and the board during the year. Each committee will have a chance to meet at the annual meeting, and the committee chairs will meet as a group with the board at its Saturday session for a discussion of general issues that affect SAA committees. At the annual meeting, the board will address committee reports and budget requests and will report back to the committees soon afterward.

Over the last year, the board has worked to formalize the committee appointments process. As a part of this effort, the board delegated to the president the responsibility of appointing members to committees. This will speed up the many member appointments that need to be made each year. Our objective is to have in place, by the annual meeting, replacements for all committee chairs and members whose terms expire at the meeting. Thus, the committees can meet with both the outgoing and incoming committee members present at the meeting.

The Task Force on Consulting Archaeology was converted to a continuing advisory committee and charged with assisting the Executive Board in determining how the needs of consulting archaeologists can be better met by SAA. Similarly, appointment of the Committee on Government Archaeology was authorized. This committee will assist the board in determining how archaeologists working for federal, state, and local government agencies can be better served by SAA.

The board decided to move toward a merger of the Publications Committee and the Task Force on Information Technology because their missions increasingly overlap. The committee chairs are directed to formulate plans for a smooth transition and for a possible subcommittee structure.

A Committee on Awards to be chaired by the Coordinator of Awards Committees was established to review the overall content, structure, and scheduling of the awards program. The Task Force on Meetings Development was changed into a permanent advisory committee. The Committee on the Status of Women in Archaeology and the Native American Scholarships Committee were converted from ad hoc to permanent advisory committees. The Geoarchaeology Interest Group was formed; it will sponsor an informal meeting at the Interest Group Reception in Nashville.

The board established the Fund-raising Subcommittee of the board. The committee is charged with recommending policy and procedures with respect to soliciting grants from foundations and agencies and gifts and bequests from members.

At the October Executive Committee meeting, the President and Executive Committee performed the required six-month review of Executive Director Tobi Brimsek. She received a very favorable review and has the gratitude of the board for her excellent work on behalf of SAA.

**Budget.** SAA ran a substantial deficit for FY 96 (which ended June 30), and SAA's reserves have dropped below the level with which the board is comfortable. Executive Director Brimsek has implemented an

aggressive program of cost-cutting, and the board has revised the FY 97 budget accordingly. She proposed, and the board has approved, a four-year program to rebuild the reserves. During this period, SAA will not be in a position to pursue new programs that entail substantial costs. The board expressed its gratitude to Brimsek for turning around our financial situation without a serious impact on SAA's key functions.

**SAA/SHA Joint Task Force on Inter-Societal Cooperation.** The board accepted the report of the task force and endorsed a number of recommendations concerning publications and jointly sponsored sessions at the annual meetings that are designed to enhance cooperation between historic and prehistoric archaeologists and between SAA and SHA.

**Native American Scholarships.** The board received the committee's recommendations for funding and awarding field school scholarships for Native Americans and encouraged the committee to move ahead to develop an implementation plan.

**Public Education.** The Public Education Committee reported to the board on its extensive activities.

**Register of Professional Archaeologists.** SAA action on the ROPA proposal awaits the SOPA vote. If the vote of the SOPA membership is positive, SAA and SHA will have membership votes on the proposal.

*Keith Kintigh is the secretary of the Society for American Archaeology.*

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[LAST PAGE](#)

[TABLE OF CONTENTS](#)

[NEXT PAGE](#)

---

# SAA Mission Statement

*Keith Kintigh*

In the fall of 1994 the SAA Executive Board began a strategic planning effort. A strategic plan, by definition, focuses on the basic nature (the mission) and the direction (strategy) of the organization. As such, the central result of this effort was a mission statement for the Society for American Archaeology. A set of specific goals (strategy) was developed out of the mission statement. Each of these longer term goals was further elaborated with a brief abstract and an extensive list of ideas or operational plans for implementation. At its November 1996 meeting, the board formally adopted the mission statement and goals and asked that they be published in the *SAA Bulletin*. The mission statement and goals will be used by the board and the staff in planning and in evaluating existing, new, and proposed SAA programs. They will also be used to convey a sense of the society to those outside the profession and to potential members. The mission statement elaborates, rather than replaces, the objectives of SAA contained in the bylaws.

The board solicits member comment on the mission statement and goals so they can be further refined as the strategic planning process moves forward. Comments would be most helpful if received before the annual meeting (April 2-6, 1997). They may be sent to [kintigh@asu.edu](mailto:kintigh@asu.edu) or to Keith Kintigh, Department of Anthropology, Arizona State University, Tempe AZ 85287-2402.

## **Society for American Archaeology Mission Statement**

The mission of the Society for American Archaeology is to increase understanding and appreciation of humanity's past as achieved through systematic investigation of the archaeological record. The society promotes research, stewardship of archaeological resources, public and professional education, and the dissemination of knowledge. To serve the public interest, SAA leads the diverse archaeological community by:

- advocating the highest standards of scientific and humanistic investigation and reporting
- encouraging respect for traditional cultural interests in the archaeological record
- opposing all looting of sites and the purchase and sale of looted archaeological materials
- participating in the development and implementation of public policy that furthers the society's mission
- facilitating public involvement in archaeology
- fostering communication through publications and meetings.

SAA seeks the widest possible engagement with all segments of society, including governments, educators, and indigenous peoples, in advancing knowledge and enhancing awareness of the past.

### Goals

1. SAA seeks to disseminate essential research and professional information to the archaeological community and public.
2. SAA seeks to improve and expand professional and financial services to its members.

3. SAA seeks to provide archaeologists with training and information through courses, workshops, and appropriately sited topical conferences.
4. SAA will commit itself to the widest possible arena for the dissemination of information from archaeological research, especially to the interested public and to kindergarten through 12th-grade educational programs.
5. SAA will be an effective advocate for archaeology in the legislative and public policy arenas.
6. SAA is committed to promoting ethical behavior within the archaeological community.
7. SAA seeks to serve the interests of the diverse constituencies that comprise its membership.
8. SAA will operate and manage its affairs in an effective, efficient, and businesslike manner to support its stated goals.
9. SAA actively promotes a close coordination between academic and CRM archaeology.
10. SAA seeks positive and equitable relations with indigenous populations through meaningful communication, consultation, and coordination on issues of mutual interest.

Approved by the SAA Executive Board, November 3, 1996.

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[LAST PAGE](#)

[TABLE OF CONTENTS](#)

[NEXT PAGE](#)

---



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# Cost-Effective Email Utilization and Internet Access

*Brian Kenny and Matthias Giessler*

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## Table of Contents:

- [Introduction](#)
  - [Get A Computer](#)
  - [Email](#)
  - [Freenets](#)
  - [Toward Useful and Ethical Internet Archaeology](#)
  - [Additional Help is "Just around the Corner"](#)
- 

## Introduction

By now, many archaeologists have read stacks of newspaper and magazine articles, newsletter commentaries, and junk mail about the Internet and World Wide Web. The information can be complex and overwhelming. As developers of the Southwestern Archaeology (SWA) web site, we regularly ponder the following questions:

- How can we get free or inexpensive and reliable email service and Internet access?
- Are there new Internet-related products and resources available?
- Which products are most useful to the historic preservation community?
- Which products best deliver information to a wide audience of professional and avocational archaeologists and the public?

We have been asking these questions as we interact electronically with a diverse base of colleagues. Presented below is some of the best advice to be found on the SWA web pages at <http://seamonkey.ed.asu.edu/swa>.

## Get a Computer

You do not need to buy the latest, fastest computer to get on the Internet. In addition to the latest available equipment, one of the authors also continues to experiment with low-cost Internet access techniques using an old 286-based PC system connected via a 2,400-baud modem and a shareware dial-up program. Email and text-only Internet access is achieved by connecting through a local telecomputing freenet (see below). Since this form of access does not accommodate graphics, access time is quite fast and the system is reliable. The PC cost \$120 used nearly two years ago.

The *Wall Street Journal* (June 10, 1996, p. B1) described the market for used PCs and provided average used-computer prices (a used 386/33 with 4-megabyte [mb] RAM and a 130-mb hard drive listed for \$350). *Forbes* magazine (Vol. 158, No. 10, October 21, 1996) quoted \$400 for a 486/66 PC, approximately \$450 for a 486DX2/50 with 8 mb of RAM and a 200-mb hard drive, \$350 to \$600 for monochrome notebook computers, and \$795 for a 486/50 color notebook with a 9,600-baud modem.

The article in *Forbes* suggested trying to avoid the technology-for-technology's-sake approach to computers. The article is a good introductory primer for archaeologists who must determine how to keep employees and colleagues productive and competitive while, at the same time, managing costs to supply appropriately priced computer power scaled to the specific tasks of individual employees. *Forbes* affirmed the selection of older model computers as an appropriate choice for certain activities and functions within a business. In other cases, the article recommended that older technology is a mistake. Only you can decide.

If you are willing to search for it, reliable used equipment is readily available. The Orion Blue Book of prices for used computers contains about 700 pages of pricing information on used computers and peripherals. The Blue Book (available in hard copy, on CD-ROM, and floppy disk) is one of the most comprehensive computer equipment lists available. It is found as a reference source in libraries, and computer dealers, corporations, and the Internal Revenue Service uses it to estimate depreciation and the value of used computer equipment. If shopping for a used computer, the book will help you establish fair market pricing. Used equipment distributors and individuals often place advertisements in the newspapers, and many firms will guarantee their products. Your local yellow pages should also provide a number of companies selling used computer equipment and providing warranted service. The *Forbes* article recommended the following pre-owned computer dealers: Computer Renaissance at (800) 433-2540, Computer Exchange at <http://www.compexch.com> or (800) 304-4639, and Boston Computer Exchange at (617) 542-4414. Also, review the magazine *Computer Shopper*, which lists hundreds of vendors of new and used computers. However, before you buy, check with the local Better Business Bureau, since return and maintenance policies are highly variable.

Field schools, students, and avocational groups should take advantage of used computer equipment whenever possible. If there is a telephone pole near your archaeological site, get a phone line installed in your tent, tool shed, or storage space and hook up your old computer. Don't worry too much about the dust and dirt. That old computer will serve you well, and you will not have lost much if it dies.

You are lucky if you have free computer access at work or school. If you aren't so fortunate, consider a visit to your local public library, many of which provide computer terminals and access to telecomputing freenets. Avocational archaeologists, students, persons with limited financial resources, and individuals with special needs may find inexpensive connectivity using a public access computer and a library's freenet access.

Remember, you do not need the latest equipment with all the bells and whistles to make the Internet work for you. Reliable older equipment used in a remote field setting will help you resupply, summon medical help, transmit data, gather information, and keep abreast of events. The bottom line is that connectivity can save you money in the long run.

## **Email**

Next to a Marshalltown trowel, electronic mail is one of the most useful tools an archaeologist can acquire. No professor, student, dirt archaeologist, field school, avocational archaeologist, or archaeological society should be without electronic connectivity and email. This means you should find and maintain access whether at home or school, on school break, on a dig near town, or out in the most remote portion of the country. There are a number of for-profit Internet Service Providers (ISP), as well as not-for-profit, community-based freenets. Each of these provide electronic mail.

If you already have an Internet connection, try <http://www.thelist.com> to get a list of ISPs. (If you don't have a connection, ask someone to print the information for you.) These commercial services connect you to the high-speed backbone of the Internet. Some ISPs are nationwide firms providing dial-in access numbers within the communities they serve. In addition to local phone access, many ISPs provide 1-800 number dial-in services. If you live in a rural area with a limited selection of ISPs, you do not necessarily need to pick the closest ISP; you will likely be able to select an ISP from anywhere in the United States as long as access to a 1-800 number accrues no additional charges to your account.

Unlimited email and web access costs about \$15-\$25 per month. For this price, ISPs often provide individual users with 5 mb of disk space on their server for data storage or personal web page development. Be sure to ask providers about their ratio of modems to users. You do not want to select an ISP with poor access and constant busy signals during peak hours.

A nationwide ISP, Juno, offers free email connections. At present, it is wholly supported by advertising revenue. Juno may be accessed from nearly anywhere in the continental United States. At a minimum, you will need a 386 PC to run the Juno software (available at [800] 654-5866 or <http://www.juno.com>). The Juno software interface is elegant and intuitive, and the service is extremely reliable. With Juno, there is no access to the World Wide Web, nor can you receive from or send information to some listservs (computer-based discussion groups). However, by signing up and providing a "user profile," you get an extremely reliable free email service. Juno occasionally sends a commercial-product banner advertisement, which you see when you open your mail, but you can adapt the user profile to suit your needs and target personally appropriate advertisements.

*[To Top of Page](#)*

## **Freenets**

Freenets are community-based Internets that generally provide users with an email address and text-based access to the World Wide Web. Most freenets have local content pages (community information and referral services), but they also allow access to other communities and their local content data. Some freenets charge a small membership fee to join, but many provide community access at no charge. Many have volunteer organizations to support their activities within the local community.

As an example, if you live in Arizona, you can get free access to email and text-only World Wide Web by joining the AzTeC freenet. Using the Windows Terminal program or a similar modem dial-up program, you can send and receive email and view web pages. In some ways, this system is more reliable than an ISP connection that accommodates Internet software displaying both text and graphics. Since AzTeC is text based and nongraphical, it has few problems with access speed when connecting to web pages. AzTeC allows you to sign on one hour at a time, with no limit to the number of times you sign on in a day. Like most freenets, you can remotely connect to the AzTeC system if you have a telnet client installed on your computer. Thus, you can access your email and the Internet while you travel. Arizonians can obtain more AzTeC information from <http://aztec.asu.edu> or by emailing Joe Askins at [askins@aztec.asu.edu](mailto:askins@aztec.asu.edu).

More information about community freenets is available at <http://duke.usask.ca/~scottp/free.html> or <http://knidos.cc.metu.edu.tr:8002/fre/fre000>. Archaeologists interested in community networks nationwide may wish to subscribe to the Communet mailing list (email to [listproc@list.uvm.edu](mailto:listproc@list.uvm.edu) with the following request: "subscribe COMMUNET") to learn more about freenets.

## **Free Web Pages and Free Assistance**

Web surfing and email services are useful and fun, but sooner than later you will decide that you need to get your message to others via the World Wide Web. Planet Tripod (<http://www.tripod.com/planet>) is an example of one service that allows you to post your web page to its server free of charge. Tripod even has tools to help you build your web page. The Southwestern Archaeology web site provides a similar service at <http://seamonkey.ed.asu.edu/swa/brochure.html>. SWA's focus is on the American Southwest, so those working outside the region may want to look for a similar provider.

Associations, avocational groups, and individual researchers can get their web pages on servers free-of-charge the old fashioned way--by asking politely. If your work is not-for-profit and not too voluminous, many webmasters will place your web page on their server free of charge. They especially appreciate high-quality sites that attract Internet traffic. Check with universities and other institutions that align naturally with the disciplines of history, anthropology, and archaeology, and you may find allies ready to assist you.

## **Toward Useful and Ethical Internet Archaeology**

David Givens and Timothy Jablonski surveyed anthropology departments on the World Wide Web and reported their results in the American Anthropological Association's *AAA Guide 1996-1997*. They supplemented this work and reported additional results in a recent article in AAA's *Anthropology Newsletter* (Vol. 37 No. 7, October 1996). Sixty-six percent of their survey respondents thought the web would become a significant tool in connecting anthropologists regionally, nationally, internationally, and in the field. Eighty-eight percent of the survey respondents thought the Internet would be a useful departmental tool in the future. For example, course listings, syllabi, and materials on the web promote student recruitment and reduce administrative costs. According to Givens and Jablonski, the AAA Department of Academic Relations offers confidential Internet planning assistance to anthropology departments. Contact them via email at [dave@aaa.mhs.compuserve.com](mailto:dave@aaa.mhs.compuserve.com).

In the same October 1996 issue of *Anthropology Newsletter*, Ari Nave points out the ethical dilemmas of electronic publishing and copyright for anthropologists. Nave reports that new technologies such as document reproduction using Adobe's Portable Document Format (PDF) technology have altered the status of the "fair use" copyright doctrine. Nave believes that universities will try to discourage individual scholars from placing PDF files on the web if their copyrights have been forfeited or assigned elsewhere. He recommends that academics include clauses in their copyright releases retaining rights to publish in noncommercial, personal web sites. Nave also suggests that organizations such as AAA retain rights to traditional and web publications but allow scholars to distribute offprints electronically via email. His web page (<http://www.sscnet.ucla.edu/anthro/nave>) provides licensing and copyright agreement templates that may be downloaded and modified for personal use. Don't forget, though, that copy right law and intellectual property, as it pertains to the Internet, is highly dynamic. Keep track of changes at the web site of the Electronic Frontier Foundation (<http://www.eft.org>).

Again, in the same issue of *Anthropology Newsletter*, Meredith Bruns describes how the World Wide Web can be used by anthropologists to reach both the public and media. Anyone interested in making their web site attractive, content rich, and useful should read the technical points made in this article or visit Bruns's web site, Center for Anthropology and Science Communication, at <http://www.pobox.com/~casc>.

*American Antiquity* (61:451-452) published "Ethics in Archaeology: Society for American Archaeology Principles of Archaeological Ethics," which focuses on issues of stewardship, accountability, discouragement of commercialization, public education and outreach, intellectual property, public reporting and publication, records and preservation, and training and resources. When read with Internet applications in mind, a clear message emerges regarding stewardship, the responsible use of research records and reports, and the appropriate sharing of data through publication and by other means. SAA suggests that "documents and materials on which publication and other forms of public reporting are based should be deposited in a suitable place for permanent safekeeping." Eventually, this may come to mean that electronic documents and web pages should be curated alongside other archaeological records and materials.

## **Additional Help is "Just around the Corner"**

Written technical help is always available at the magazine racks of the computer stores. Remember, many of these magazines tend to assume that you are young and computer savvy. If you at first feel a bit chronologically challenged by the approach, try not to feel intimidated by the patois of the computer magazines. Most of this computer stuff is quite simple and can be learned rapidly with a little application.

SWA is conducting a survey to find out more about individual archaeologists on the Internet. Our survey form is located at <http://seamonkey.ed.asu.edu/swa/survey.html>. When you finish reading this article, get on-line and fill out our survey. If you build your own web pages, be sure to drop us a line detailing the personal survey data that

you have included. SWA plans to report the results on its web site in spring 1997. Documenting web page development by a wide variety of archaeologists provides great encouragement for all.

[To Top of Page](#)

*Brian W. Kenny is environmental program manager and anthropologist with the Maricopa County Department of Transportation, Phoenix, Ariz. Matthias Giessler is director of Internet Services, College of Education, Technology-Based Learning and Research, Arizona State University, Tempe.*

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[LAST PAGE](#)

[TABLE OF CONTENTS](#)

[NEXT PAGE](#)

---

---

## A Portrait of the Southwestern Archaeology Web Site

*Brian Kenney and Matthias Giessler*

The Southwestern Archaeology (SWA) World Wide Web site was first conceived of in February 1995 by the present writers. We initially met over the Internet exchanging email about a common interest in southwestern archaeology. Out of this correspondence grew the idea for a web site that might serve as an information resource for professional and avocational archaeologists, anthropologists, and historians studying the varied cultures and landscapes of the American Southwest.

Although we try hard to make the information on SWA as accessible and informative as possible, our own sense of organization may not be entirely transparent to the casual visitor. On SWA's opening page, we briefly state the scope of our interests and provide a series of links that lead to more detailed information. The following provides a brief tour of our site.

At the top of the opening screen, we link to a page of health and safety tips for archaeologists and anthropologists working in the Southwest. In addition to links to other web sites, this page features Portable Document Format (PDF) files on the Hantavirus, tick-borne diseases, bats and public health, and trench safety, for example.

Another page explains at some length the goals of the SWA site. In general, we try to provide relevant information to and connect people interested in the archaeology, anthropology, and history of the region. To make the site as accessible and informative as possible, we solicit input, submissions, data, and criticisms from visitors to our site. To that end, we publish a page that shows the many ways in which one can contribute. We encourage you to use this page; contributions help to widen the site's scope. Because the webmasters both live in Arizona, in many instances the SWA site is Arizona-centric, despite the fact that we have every intention to serve the entire region.

We also offer extensive information on the Annual Pecos Conference. We publish Pecos Conference papers and talks and house the Pecos T-shirt designs archive. Recently, we put up conference and registration information for the 1996 Pecos Conference held in the Coconino National Forest north of Flagstaff, Ariz. We hope to provide 1997 Pecos Conference details as soon as they are available.

SWA also mirrors the Southwestern Archaeology Special Interest Group (SASIG) on AzTeC, which is a free, community-based, text-only Internet access provider serving Phoenix, Tucson, and other communities in Arizona. SASIG is an electronic bulletin board of messages, including those sent via the SWA mailing list. Members of the community, students of prehistory, and avocational and professional archaeologists are encouraged to post appropriate questions, messages, and information about southwestern archaeology, prehistory, and history. Over the past year, we have posted more than 600 messages to the SASIG. Currently, the SWA mailing list includes over 275 members and is growing steadily. Many of our members tell us that they redistribute select SWA messages to colleagues within their organizations and agencies. In this way, SWA effectively reaches many more people than just those signed up to receive the SASIG email.

Since one of our main goals is to serve as a nexus for professional and avocational archaeologists, we try to make information available that allows people in the field to find and contact one another on the Internet. Apart from our SWA mailing list, which publishes the members' names, professions, and email addresses, we provide addresses for archaeological consultants with Arizona State Museum permits, the Arizona Archaeology Advisory Commission membership, archaeological societies and newsletters, and regional legislators.

At present, SWA also provides links to more than 1,000 other web sites, most of them relevant to southwestern archaeology and some dealing with broader archaeological topics. We have subdivided SWA information according to geographic and political regions: Utah, Colorado, Arizona, New Mexico, Lower Colorado River, Trans-Pecos, and Mexico. Pages for each region list a great number of resources, including both primary data residing on our server and relevant off-site links. Among the primary data we provide for these regions are:

- conference and symposium information
- information on archaeological societies
- tourist information
- federal archaeology laws and regulations
- archaeology newsletters, brochures, and catalogs
- southwestern archaeology reading list
- selected articles
- archaeological site vandalism information
- annotated bibliographies
- book reviews

We think the Internet will be a useful medium for communication and information exchange among professional and avocational archaeologists. We always welcome substantive contributions of information that can be shared with the public.

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[To Top of Page](#)

---

[LAST PAGE](#)

[TABLE OF CONTENTS](#)

[NEXT PAGE](#)

---

## Interface--



# New Developments in Geophysical Prospecting and Archaeological Research: An Example from the Navan Complex, County Armagh, Northern Ireland

## Archaeology and Technology

*Daniel O. Larson and Elizabeth L. Ambos*

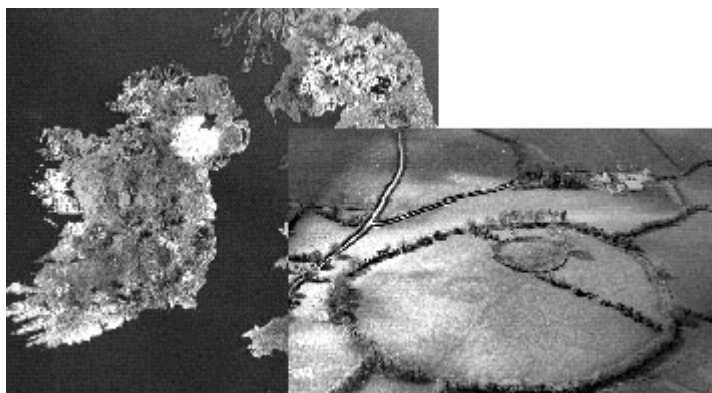
### Table of Contents:

- [Introduction](#)
- [Principles of Geophysical and Photographic Image Research](#)
- [Navan Complex Research](#)
- [Research Framework](#)
- [Aerial Photographic Inventory](#)
  - [Results of Aerial Photograph Enhancements](#)
- [Geophysical Survey Background Information](#)
  - [Magnetometer Surveys](#)
  - [Results of the Cesium Vapor Magnetometer Survey](#)
  - [Ground Penetrating Radar Method](#)
- [Summary Discussion and Future Work](#)

## Introduction

In this article, we review recent advancements in the application of geophysical prospecting techniques to archaeological field research. We specifically discuss the results of cesium magnetometer, ground penetrating radar, and aerial photographic enhancement studies of the Navan Archaeological Complex, County Armagh, Northern Ireland (Figure 1). The use of new geophysical instruments and recently developed computer software programs will, in the near future, revolutionize the way archaeologists structure their survey and excavation work. We argue that the application of this new equipment, however, must go beyond simply being "new" or "neat" techniques generating better "descriptions" for archaeologists. The ultimate contribution of these improved technologies will be in our ability to advance cultural evolutionary theory. Our objective here is to describe the research context that we have developed for geophysical exploration and how it can be applied to the study of culture change in archaeology.





**Figure 1**

The history of science contains numerous examples of innovations in methods that have led to great discoveries and the advancement of theory. Theory is of primary importance to archaeology because it functions to generate hypotheses, or models of the empirical world that can be falsified by comparing the models with descriptions of phenomena. Philosophers of science and critical archaeologists argue that the development of archaeological theory is repressed throughout much of the world because of inadequate empirical data against which specific hypotheses and theories can be evaluated. It is difficult to oppose this position because even within the American Southwest, where generations of archaeologists have applied their trade at hundreds of sites, we are still groping with the empirical quest and the linkage of data with theory (D. O. Larson, H. Neff, D. Graybill, J. Michaelsen, and E. Ambos, 1996, Risk, Climatic Variability, and the Study of Southwestern Prehistory: An Evolutionary Perspective. *American Antiquity* 61:217-242).

Is theory repressed because of limitations of our data, or is it because of our inability to collect data in an efficient manner? We suggest here that more often than not, it is due to the latter. We believe that recent developments in remote sensing methods, aerial photographic image enhancements, and geophysical prospecting, coupled with strategically designed archaeological field surveys and test excavation programs, can dramatically advance the development of archaeology as a science.

The scientific equipment we operate in the field and the computer hardware and software used in our studies represent the latest advances in geophysical prospecting and photographic enhancement methods. The quality and quantity of data collected and processed using these tools is impressive, and the Navan Archaeological Complex is an excellent natural laboratory for demonstrating the utility of geophysical and archaeological research (D. O. Larson, E. L. Ambos, and M. Conway, 1996, A Strategy for Archaeological Remote Sensing Investigations. *Emania*, in press).

## **Principles of Geophysical and Photographic Image Research**

The value and application of geophysical and aerial photographic methods in archaeology have been amply discussed by several eminent scholars (e.g., J. W. Weymouth and R. Huggins, 1985, Geophysical Surveying of Archaeological Sites, in *Archaeological Geology*, edited by G. Rapp and J. A. Gifford, pp. 191-235, Yale University Press: New Haven). European archaeologists and geophysicists have developed and pioneered many of the scientific applications discussed here. We neither endeavor to review this volume of literature nor present details about the history and use of the equipment and methods we employed. Rather, our purpose in this short presentation is to discuss our specific approach, project, and results.

The literature for geophysical applications in archaeology incorporates a number of differing opinions regarding proper applications of geophysical methods in archaeology. We argue that three principles should guide geophysical research in archaeology. First, it is prudent to apply multiple geophysical techniques in the field so that the particular strengths of each method are incorporated in the study. The use of magnetometers and ground penetrating radar are especially suitable in this regard. Second, the geophysical projects should be undertaken by archaeologists and geophysicists working in close coordination during the planning, implementation, and interpretive phase of the research program. Third, geophysical interpretations should be followed by field-testing

procedures to "ground truth" the discoveries and any geophysical anomalies. Whether in research or cultural resource preservation work, geophysical interpretation should not be the sole basis for informed decision making; the element of proof must be based on field excavations in archaeology.

Geophysical and aerial photographic surveys are often conducted for the purpose of archaeological description. This may be appropriate for some preservation projects; however, it is our position that researchers should continuously strive to go beyond the presentation of graphics and site reports. Our research approach is driven by a set of specific research questions concerning culture change during the Bronze and Iron ages.

## Navan Complex Research

The excellent investigative efforts of the Navan Research Group have made it increasingly clear that the legendary prehistoric capital of Ulster at Navan, in County Armagh, Northern Ireland, evidences a sizable archaeological complex (C. J. Lynn, 1992, *The Iron Age Mound in Navan Fort: A Physical Realization of Celtic Religious Beliefs? Emania* 10:33-57). Indeed, previous research has identified more than 40 archaeological sites that suggest that the Navan Complex is similar to other major ritual complexes in Ireland, such as Tara and Rathcroghan. Our specific research interest is focused on the Navan Complex during the Bronze and Iron ages. We are particularly curious about the economic and demographic change that occurred during the transition between these two periods, 400 B.C. and A.D. 200.

Within the Navan complex, the two prominent sites are Navan Fort and Haughey's Fort, Late Bronze and Iron Age hillforts. Both sites are more than 300 m across and contain multiple features and subsurface structures (Figure 2). They are situated 1 km apart and are a rarity on the prehistoric landscape of Northern Ireland. Recent excavations in the Navan region have been concentrated in the interior of the Navan enclosure and ceremonial structure, at Haughey's Fort, and at the King's Stables, and it is from this research that most of our cultural and chronological inferences can be drawn.

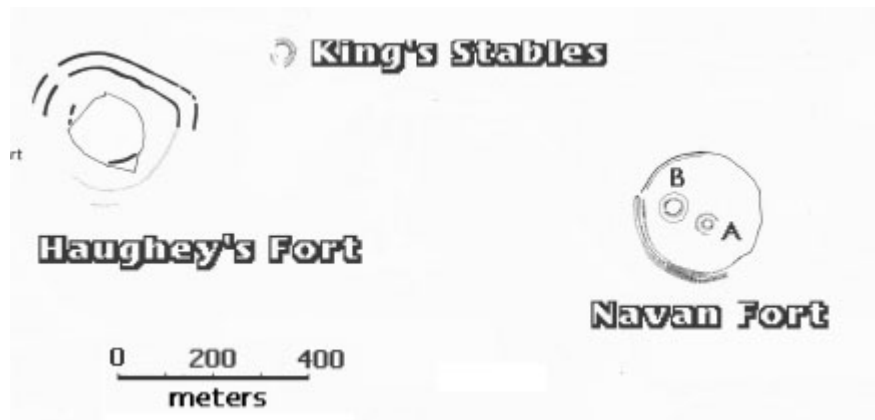


Figure 2

It is at the end of the Middle Bronze Age that we begin to see the Navan complex taking real shape. Extant archaeological evidence for the Navan complex shows that during the Bronze and Iron ages there is increased intensification of agricultural production, greater emphasis on livestock herding, community aggregation, stratified social systems, complex exchange networks, and construction of large ceremonial structures (40 m across) and large public works. One such significant feature is the Black Pig's Dyke, which is a double ditch more than 5 m deep that winds its way across the landscape for more than 40 km. The labor required to construct this feature was extraordinary indeed. Both Navan Fort and Haughey's Fort produced evidence for intensive occupation, with gold, bronze, and iron artifacts. The existence of exceptionally large dogs and cattle and rare exotic trade items (an ape skull from Northern Africa) all imply a high status for the occupants. Interestingly, the Black Pig's Dyke and the Navan Fort ceremonial structure have both been dated to 95 B.C. by means of dendrochronology (R. B. Warner, 1994, *The Navan Archaeological Complex: A Summary*, in *Ulidia: Proceedings of the First International Conference of the Ulster Cycle of Tales*, edited by J. P. Mallory and G. Stockman, pp. 165-170).

Several researchers have emphasized the need to examine diachronic and synchronic variation in human behavior during the Bronze and Iron ages. Toward this end, our collaborative research specifically seeks to answer the following questions:

- What is the nature of variation in the size and organization of prehistoric communities in the Navan region through time?
- What is the nature of the political and ceremonial evolutionary processes during the Bronze and Iron ages?
- What is the nature of economic specialization in the use of the environment in the study area?
- What is the nature of change in population levels and densities in the Navan region during the Bronze and Iron ages, particularly during the transition period?
- What is the nature of variation in the degree of specialization in the production and use of artifact assemblages in the Navan region? Specifically, what was the extent and magnitude of ceramic and metalwork production in the Navan area?

## Research Framework

To answer these questions, we and our colleagues from Northern Ireland have begun the process of structuring a long-term research program that incorporates several major geophysical and archaeological study components. The relationship of these components is graphically illustrated in Figure 3. Archaeological theory is the cornerstone of any research design because the way archaeologists study the past is always based on implicit or explicit theoretical constructs. We pose problems, we choose units of archaeological observation, we sample the archaeological record, and we structure our data collection strategies in a deliberate manner. A number of archaeologists have discussed the value of selectionist theory in archaeology (see R. C. Dunnell, 1996, Foreword. In *Evolutionary Archaeology: Theory and Application*, edited by M. J. O'Brien, pp. vii-xv. University of Utah Press, Salt Lake City.; M. B. Schiffer, 1996, Some Relationships between Behavioral and Evolutionary Archaeologies. *American Antiquity* 61:643-662). This theoretical focus requires that we collect data relevant to the study of variation in architectural and technological components of Bronze and Iron Age society. It is assumed that cultural evolution is a two-step process involving the generation of variation and its subsequent differential persistence. Clearly, geophysical prospecting and well-targeted excavations of units of empirical interest will greatly assist in the study of variation and evolution. The greatest advantage associated with geophysical prospecting is that the results can often be used to design archaeological data collection strategies in the field. Once they have been detected in geophysical surveys, sample data can be collected from specific features such as housefloors, hearths, metalwork areas, and ceremonial structures. Thus, the sample unit is the targeted features rather than some arbitrary notion of excavated space. As a result of this research process, the areas determined to be high-probability loci for archaeological material and environmental data are intensively investigated in the field using high-resolution geophysical methods and small incremental bore samples, column samples, and test excavations. All items collected can then be subjected to various material analyses that ultimately feed back into the research program design to explain the causal mechanisms of cultural evolutionary processes. In the following sections we discuss our specific approach, which uses aerial photographic images and geophysical prospecting methods, and our results.

Scientific Method	Research Components
<b>Framing the Study</b>	Theory Building
<b>Focusing</b>	Research Design Hypothesis Observable Expectations
<b>Methods</b>	Design of Targeted Data Collection Strategies
<b>Implementation</b>	
<b>Inter-site Studies</b>	Aerial Photographic Inventory Image Enhancement Studies Archaeological BLM Survey
<b>Intra-site Geophysical Studies</b>	Targeted Geophysical Geomorphology GPR Studies Buried Iron and Metal Analysis Blindfold Exercises
<b>Excavation Program</b>	Excavation, Test Pits, Revised Excavation Plans
<b>Material Analysis</b>	Excavation, Dendrochronology, Method Artifact Analysis, In situ Analysis, etc.
<b>Evaluation</b>	Quantitative Studies

**Figure 3**

[Return to top of page](#)

## Aerial Photographic Inventory

The aerial photographic inventory is specifically designed to generate data on diachronic and synchronic changes in settlement location, organization, and variation in settlement type. Three photographs produced in 1972, 1982, and 1992 were provided by the Environmental Service in Northern Ireland and scanned using high-resolution equipment at California State University at Long Beach. In addition, a variety of computer software programs residing on powerful Macintosh and mainframe computers at the university were used to filter and enhance these images. We examined in detail each image on high-resolution computer color monitors (maximum resolution 1152 x 870).

In Northern Ireland, archaeological features show up as positive or negative markings in many agricultural fields. Linear/circular features, ring forts, and mounds are sometimes visible on the raw aerial photographs, but with new enhancement techniques, exceptional detail in archaeological features can be achieved. In other cases, archaeological features that are completely invisible on raw aerial photographs become apparent after the image has been filtered and enhanced. We incorporated several exploratory steps of filtering, smoothing, and re-expression of aerial photographic image data. This type of photographic enhancement coupled with statistical and visual evaluation often produces unanticipated results. We found that by filtering photographic data, a number of subtle archaeological features, not previously identified, were present within the Navan enclosure and along the slope of Haughey's Fort. Interestingly, we found that certain types of filters and image-enhancement methods were successful for different kinds of archaeological anomalies. We also noted that although image quality varied from excellent to poor, each of the three photographs offered evidence of archaeological significance not found in the other two. Multiple factors, including moisture content of the soil, crop rotation, season, film type, exposure level, and time of day for the photograph, all contributed to these differences.

We have found that there is no one correct method of aerial photographic enhancement; the analyst achieves the best results through long hours of visual exploration using a variety of techniques. The greatest advantages a researcher possesses are knowledge of enhancement procedures, patience, creativity, and sometimes luck. The

power of modern computers and access to multiple software programs provide contemporary researchers with efficient means to perform mathematical and visual explorations that allow for the detection of previously unrecognized archaeological anomalies.

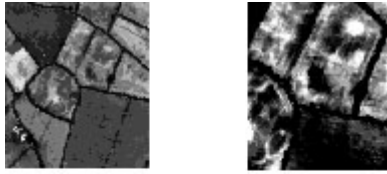
### ***Results of Aerial Photograph Enhancements***

Previous excavations at Navan Fort have revealed the existence of many subsurface archaeological features including Sites A and B (A. Selkirk and D. Waterman, 1970, Navan Fort, *Current Archaeology*, 22:304-308). Our careful reexamination of Navan Fort aerial photographs, including enhancements of three vertical images, documents the possible existence of the large ring feature between Sites A and B (Figure 4). The geophysical surveys (cesium magnetometer and ground penetrating radar) at this location, described in detail below, strongly support this conclusion. In addition, a linear feature detected west of Site B may be the prehistoric roadway into the Navan enclosure (Figure 4). It should be noted that Figure 4 is compromised by the reproduction limitations of this printed media.



**Figure 4**

At Haughey's Fort, two outer ditches have been previously identified by researchers using aerial photographs. Figure 5 is an enhanced image in which these features have been traced into portions of the field in which they had not previously been detected. Thus, the enhancement methods that we employed delineate the pattern of structures in a manner that goes well beyond simple visual examination of the photographs and offers archaeologists new and significant data on archaeological structures in the Navan region. Most importantly, the detection of these ditches provides a basis for the selection of specific areas for well-targeted cesium magnetometer surveys and later test excavations. The next objective of this project is to retrieve datable materials from several features so that their chronological context can be determined. This will be accomplished with relatively small-scale and well-targeted test excavations.



**Figure 5**

[Return to top of page](#)

## Geophysical Survey Background Information

In 1994 and 1995 we conducted cesium vapor and proton precession magnetometer and ground penetrating radar (GPR) surveys at Navan Fort and Haughey's Fort. Geophysical data were collected along transects within 20-x-20-m grids. The cesium vapor magnetometer data were collected in 20-m-long parallel transects spaced .5 m apart. Ground penetrating radar and proton precession magnetometer data were collected in 20-m-long parallel transects spaced 1 m apart.

Several archaeological items and features were expected to be revealed by the magnetometer surveys, including metal artifacts, hearths, ceramic and metal production areas, burnt timber posts from residential features, ceremonial buildings, and hill fort palisades. We know that burnt materials have a particularly high magnetism because of the acquisition of thermoremanent magnetization (see W. M. Telford, J. P. Geldart, and R. E. Sheriff, 1990, *Applied Geophysics*, 2nd ed. Cambridge University Press: London). Positive magnetization may also occur in organic-rich materials, such as midden deposits, as these conditions may cause authigenic magnetic mineral growth (see I. D. G. Graham and I. Scollar, 1976, Limitations on Magnetic Prospection in Archaeology Imposed by Soil Properties, *Archaeo-Physika*. 6:1-125). Thus, we can expect ditch fill, agricultural settlements, and perhaps burial areas to be marked by small amplitude magnetic anomalies.

Although GPR and magnetometer data are complementary, they are by no means completely interchangeable. Because each method is based on measurement variation of different physical properties, appreciable differences in response often occur. For example, rock walls or tree roots in the subsurface may generate strong electromagnetic wave reflections that are clearly observable in the GPR record. Such subsurface features, however, might not register with the magnetometer. Conversely, a buried iron artifact 6 cm in length, buried .5 m below the ground surface, may result in a high-amplitude magnetic anomaly measurable over several meters in diameter. Unless the GPR instrument directly passes over the iron artifact, however, very little evidence of the artifact would be recorded by that instrument. The research results reported here demonstrate the complementary nature of these instruments and the value of using multiple geophysical techniques.

It should be stressed that the geophysical data produced by the GPR and magnetometer surveys can also inform the researcher about postdepositional processes. Geophysical survey data can identify areas that have been significantly disturbed by erosion, agricultural activities, and other natural and cultural factors. In the absence of the geophysical survey data, these processes may not be visible and therefore not considered as a potential bias in the archaeological record.

## ***Magnetometer Surveys***

We employed the EG+G Geometrics 856 proton precession magnetometer in the 1994 study and the EG+G Geometrics 858 cesium vapor magnetometer in the 1995 study. Both magnetometers measure the rates of change of certain atomic structures in the presence of a superimposed magnetic field (see H. R. Burger, 1992, *Exploration Geophysics of the Shallow Subsurface*. Prentice-Hall: New York, for information concerning the operating principles of these instruments). The primary difference between the proton precession and cesium vapor magnetometers is in rates of data acquisition and measurement precision. Using the single stable proton precession magnetometer, each measurement takes several minutes to acquire, whereas the cesium vapor magnetometer generates 10 measurements every second. Measurement speed and other factors associated with the use of the cesium magnetometer (equipment set up, data logging, and reduced number of crew), allow for both a significantly greater number of magnetic measurements (over 8,100 measurements per 20-x-20-m unit with transect intervals of .5 m) and greater areal coverage per field day. Under exceptional conditions, a 20-x-20-m survey unit can be completed in just one hour.

The cesium vapor magnetometer was also engineered to achieve a considerably more precise measurement than the proton precession magnetometer. The total magnetic field can generally be measured by a cesium vapor magnetometer to a precision of .05 nT (nanoteslas or gammas), while the proton precession magnetometer measurements attain a precision of less than .5-1 nT. The greater precision of the cesium vapor magnetometer is highly desirable in the geophysical studies of archaeological sites. In short, the anomalies in the earth's magnetic field that evidence archaeological features are often subtle, with amplitudes on the order of 5 to 10 nT, or approximately .01% of the earth's field. (J. W. Weymouth, 1986, Archaeological Site Surveying Program at the University of Nebraska, *Geophysics*. 51:538-552). The high density of magnetometer readings and the sensitivity of the instrument allow research to identify many archaeological features that would have been missed by proton magnetometer surveys.

The EG+G Geometrics 858 system includes an electronic console, carrying belt and shoulder straps, and a hand-held counterbalance staff with a mounted sensor (Figure 6). The console contains electronics to acquire magnetic field data and a LCD screen that displays the magnetic data, position, and information mapped during field operations. The console also emanates audible tones indicating magnetic field changes and survey cadence (pace), allowing the operator to survey in a "head up" mode. Data are stored in non-volatile RAM (250,000 compressed magnetic readings and associated positions and times) for playback and editing in the field. When the field survey is complete, data are quickly downloaded to a processing computer for statistical assessment, exploratory data analysis, filtering, and visual processing. Positional information can be derived from a connected GPS with better than 1-m accuracy or from regularly spaced fiducial marks (grid system) preset by the operator. Included with the system is a comprehensive software package to download, perform diurnal corrections, edit, interpolate and convert magnetic data into 2D and 3D contour reading format. The actual statistical analyses, exploratory data analysis, and visual processing are all conducted using third-party software.

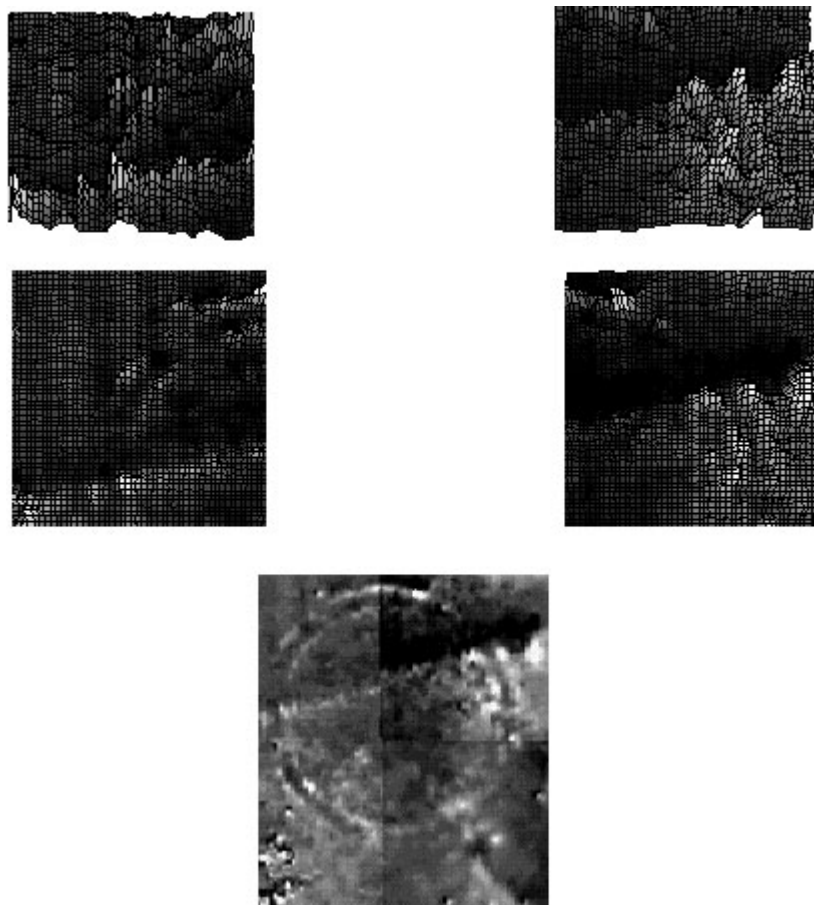


**Figure 6**

[Return to top of page](#)

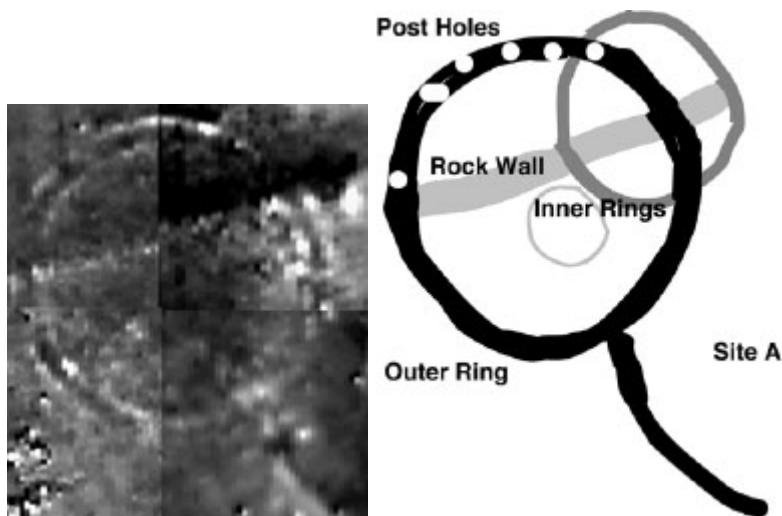
## ***Results of the Cesium Vapor Magnetometer Survey***

In this section, we limit our presentation to two geophysical survey areas: a 40-x-40-m section between Sites A and B at Navan Fort and the upper ditch identified in the aerial photographic survey at Haughey's Fort (Figures 4 and 5). A significant result of the cesium vapor magnetometer surveys was the production of a high-resolution image of a double-ring structure, approximately 30 m in diameter, centered between Sites A and B (Figure 7). The new double-ring structure was not previously identified from past excavation work, but it is visible in the aerial photograph enhancement reported above. The magnetic anomaly that cuts diagonally through the double-ring feature is a historic field boundary, and it is the only feature visible on the ground surface when one walks over the site ( K. Kvamme, 1996, A Proton Magnetometry Survey at Navan Fort, *Emania*, in press). The magnetic dipole features (paired positive and negative anomalies), or dark areas in Figure 7, may well reflect the position of structural timber. That is, the dipole structures appear as "bull's eyes" within the double ring with dimensions of less than 1 m (Figure 8). We suspect that this magnetic anomaly may evidence a burnt posthole (similar features were noted for the Waterman excavations). Targets like this are extremely important for obtaining dendrochronological and radiocarbon samples. We also detected a possible superimposed structure in the northwest corner of the double-ring structure in our enhanced computer screen image (Figure 8). Lastly, we found what appears to be several interior, circular features of some sort (Figures 7 and 8).



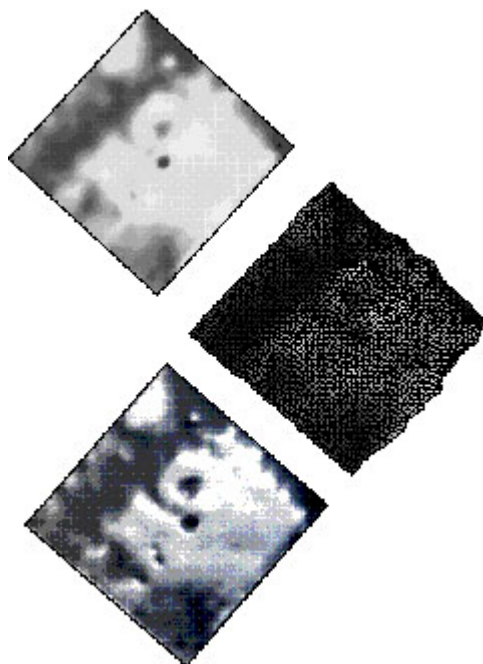
**Figure 7**





**Figure 8**

At Haughey's Fort, the precise location of the outer ditch was discovered. The location of the cesium magnetometer survey was determined on the basis of the enhanced aerial photographs, as discussed previously. A 20-x-20-m grid was surveyed with the geophysical equipment, and as a result, a deep linear structure approximately 15 m wide was detected (Figure 9). Irish scholars are particularly interested in the study of material derived from these features because of the extraordinary preservation of archaeological materials and environmental data in deep ditches (i.e., pollen, plants, insects, and dendrochronological specimens).



**Figure 9**

It should be emphasized that although the fieldwork for the Navan magnetic surveys was rapid (we completed thirty 20-x-20-m units in 12 days), the computer processing of data including exploratory data analysis and visual data analysis is time consuming (we estimated 5 days per 20-x-20-m unit). Accumulated data are assessed using a number of statistical and visual display programs. Our purpose then is to detect the patterns and outliers in the raw magnetic data and in the reexpressed magnetic data. In this process, various filters (e.g., gaussian, Fourier transform, low pass) are applied to data, and multiple images are closely examined on high-resolution computer screens for subtle anomalies that may shed light on interesting targets of past Bronze and Iron Age behavior.

Without question, traditional methods of archaeological fieldwork would have required decades to detect the complete ring feature and ditch described above. A significant advantage of cesium magnetometer work is that it

allows the archaeologist to place test excavation units directly over the archaeological features that interest them. Indeed, test excavations are presently being conducted by our Irish colleagues to "ground truth" these discoveries at Haughey's Fort. We can also retrieve artifacts from areas of known concentration such as along slots, ditches, or within structures and specific features. Cesium magnetometer studies may be particularly helpful in the retrieval of metal artifacts that were thrown into wet environments such as bogs, perhaps as symbolic sacrifice during the Bronze and Iron ages.

### ***Ground Penetrating Radar (GPR) Method***

The ground penetrating radar (GPR) method was used at the Navan Fort site in the summer of 1994. The GPR data corroborate the magnetometer evidence for the existence of the new ring between Sites A and B. Although the GPR data will be discussed in detail in an upcoming *Bulletin* article, we present here a brief overview of the instrument design, field operation, data analysis, and reduction procedures.

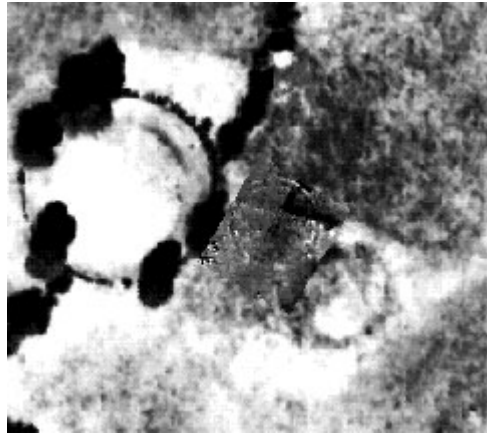
GPR involves the transmission of electromagnetic wave energy into the ground from a broad-band antenna source. The source is put in contact with the ground surface and then the source antenna is pulled along the 20-m profile. A single two-dimensional profiler record is obtained for each 20-m-long line. As the GPR energy penetrates subsurface materials, some of it will be absorbed and some will reflect back to the surface. Reflected energy can be recorded by a receiving antenna and their signals stored on tape media for later examination and processing. Reflections occur where abrupt changes in subsurface materials take place. Transitions from dry to wet soil, soil to bedrock, and soil to buried walls or floors often generate marked reflections events. In the Navan Fort region, prominent reflections may be expected between soil and limestone bedrock and between loose and packed soils that characterize the floors of ring structures.

We chose to use a GSSI SIR-10 GPR instrument for our data collection and the GSSI Radan and Fortner Research Spyglass software for processing. After GPR reflection data have been recorded on tape media, they are ready for processing. The steps we employed included filtering and data compression and then interpolation of the individual two-dimensional data profiles into a three-dimensional data volume.

## **Summary Discussion and Future Work**

According to Albert Spaulding, the "scientific method is concerned with the process to follow once the question has been asked." The research context that we have designed for Northern Ireland is fundamentally based on this premise. The application of geophysical methods is just one part of the scientific endeavor in archaeology--but we feel it can and should be an important part. In this report, we have discussed our approach to geophysical and archaeological research in the Navan Complex. Our research demonstrates that archaeologists can investigate intra- and intersite settlement patterns with a high degree of resolution, yet with a relatively small expenditure of time and labor when compared with traditional methods. Archaeologists and geophysicists, however, must be willing to invest a considerable effort to learn about each other's disciplines to successfully implement a collaborative program of this kind.

The most important point of our presentation is that this new technology offers scholars a unique opportunity to execute well-developed empirical studies designed to test and evaluate explicit theoretical frameworks. The level of efficiency for targeting archaeological features of particular interest is unprecedented in the history of archaeology (Figure 10). We believe that this coupling of research strategies (geophysical exploration and archaeological field excavations) will, in the not too distant future, significantly contribute to the advancement of archaeology as a science. This is a critical point because at present there are over 100 different general theories of cultural evolution advocated by archaeologists. Scholars argue that this condition exists because we are in the early developmental stages of our discipline. For archaeology to grow intellectually, we must begin the process of reducing the number of competing theories. We expect that part of this process will include the effective use of geophysical equipment in the design of excavation programs.



**Figure 10**

Training of future archaeologists in these advanced methods of geophysical exploration and aerial photographic enhancement techniques will be of tremendous value to the profession. Clearly, these technologies will continue to be developed by engineers at a tremendous pace, and those academic programs in archaeology that offer training in geophysical methods coupled with a strong commitment to develop and scientifically test and evaluate evolutionary theory will offer graduate students a competitive edge in an increasingly competitive field. Where possible, university-based archaeologists and geologists can develop joint proposals for purchasing geophysical equipment. In addition, courses can be cross-listed in each department, thereby increasing enrollment and linking courses for a focused curriculum. Our experience shows that university administrators are particularly receptive to this kind of approach.

Finally, our work with colleagues in Northern Ireland and Southern California shows that archaeologists and cultural resource managers can plan for the development of particular areas without extensive excavation, thereby preserving archaeological sites and cultural heritage values in perpetuity. This is an issue that is becoming increasingly important to cultural groups around the world who are interested in preserving their cultural heritage.

[\*Return to top of page\*](#)

## **Acknowledgments**

This research would not have been possible without the help and support of the following institutions and individuals in Northern Ireland: Ann Hamlin and Chris Lynn of Environmental Services; James Mallory and Michael Baillie of the Department of Paleoecology and Archaeology at Queen's University, Belfast; David Weir of English Heritage; Richard Warner of the Ulster Museum; Danny Sutherland, Anne Hart, James McKee, Jim Finnegan, Stephen Gilmore, Tommy McCreesh and many other wonderful individuals at the Navan Research Centre. We are especially grateful to Jim Mallory and Chris Lynn who have encouraged us and advised us at all points during this research. The British Council supported our first visit to Northern Ireland and we acknowledge the interest of Peter Lyner, director, and the unfailing support of Carmel McGill, cultural exchanges officer. At the California State University at Long Beach, we received support and strong encouragement from President Robert Maxson, Karl Anatol, Keith Polakoff, James Jensen, Stanley Finney, Toni Beron, and Gloria Carver, and were assisted by various archaeology students the fall of 1995 in processing the aerial photos. At the Jet Propulsion Laboratory, we received guidance in imaging data volumes and translating data formats from Michael Martin and his colleagues, and unwavering support from Fred Shair. Finally, we thank the students of California State University, Long Beach, for their support through the Instructionally Related Activities Program and Mark Aldenderfer and John Kantner for their help with this article.

*Daniel O. Larson is in the Department of Anthropology and Elizabeth L. Ambos is the Department of Geological Sciences at California State University, Long Beach.*

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## Tennessee Music, Culture, and Archaeological Treasures, or, "Don't Go Stir Crazy in the Meeting Rooms"

*Kevin E. Smith and David G. Anderson*

From a purely academic perspective, the 1997 SAA Annual Meeting in Nashville promises to be one of the largest and most exciting in our history. With almost 1,300 papers in dozens of sessions addressing archaeological topics from across the world, the challenge (as usual) will be to choose which sessions and papers just cannot be missed. At the same time, these annual gatherings include opportunities to experience local culture and visit some of the premier archaeological parks of the region.

The SAA Annual Meeting is set for the first time in the heart of the interior upland south. For millennia, the area has served as the crossroads of the eastern United States. Described as the "Eden of the West" during the 18th century A.D., the region has hosted an incredible array of peoples and cultures. Planned local excursions have been designed to touch on the current scenic beauty and cultural flavor of Nashville and to hit some of the chief archaeological sites from the distant prehistoric to the recent historic past.

For those interested in capturing an overview of Nashville as "Music City," a driving tour of downtown will include a stop at the Country Music Hall of Fame, shopping on Music Row, and a picnic lunch in Centennial Park beneath a full-scale replica of the Greek Parthenon built for Tennessee's Centennial Celebration in 1897.

Two of the excursions will highlight the scenery of Middle Tennessee along with visits to the state's foremost archaeological parks. On the way to Pinson Mounds State Archaeological Park, participants will view the farms and forests of the Western Highland Rim, cross the Tennessee River, and descend to the edge of the West Tennessee Plain. At the park, visitors will tour the recently renovated museum and experience the grandeur of the largest Middle Woodland ceremonial center in the eastern United States. The site covers 160 ha and includes more than 100,000 m<sup>3</sup> of earthen constructions. Among the unique features of the site are some of the first rectangular platform mounds created by Middle Woodland cultures. The ascent to the observation platform atop Saul's Mound, more than 70 ft above the surrounding level tableland, truly exemplifies the accomplishments of prehistoric Native America.

A second excursion will travel to Old Stone Fort State Archaeological Park, the location of a ceremonial enclosure constructed by Native Americans between A.D. 30 and 450. On the way, participants will pass through the cedar glades of the Central Basin of Tennessee and ascend the rolling hills south of Nashville. Nestled between the waterfalls at the forks of the Duck River, this park is considered one of the most stunning locations in Middle Tennessee. Park staff will provide a personalized tour of the museum and the spectacular earth-covered stone walls of the 50-acre enclosure.

Folks more interested in the recent history and archaeology of the area will have an opportunity to visit plantation homes and Civil War forts. Andrew Jackson's Hermitage was the magnificent plantation home of the seventh president of the United States. The Hermitage Archaeological Project, ongoing since 1988, has produced many new insights into the lives of slaves and the functioning of this upland plantation. With a multimillion-dollar restoration project just completed, there has never been a better time to view the mansion and gardens.

And finally, for military and Civil War buffs, Fort Negley offers the most complex Civil War fortification in the Nashville defenses and is possibly the most intricate interior land fortification built in the United States up to that time. Led by Fred Prouty (military sites specialist, Tennessee Historical Commission), the tour will highlight not only this massive engineering feat but also the contributions of the African American troops who

first constructed and staffed the fort. Currently closed to the public, the park has been opened for a special SAA preview of what promises to become a premier destination for Civil War enthusiasts.

So, consider planning a break from the technical sessions to create a few pleasant memories of Nashville and Middle Tennessee to take home with you. And, don't forget your camera!

*Kevin Smith is chair of the local advisory committee and David G. Anderson is chair of the 1997 Annual Meeting Program Committee.*

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[LAST PAGE](#)

[TABLE OF CONTENTS](#)

[NEXT PAGE](#)

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## INSIGHTS



### THE MANY FACES OF CRM

## Changing Directions: A Roundtable Discussion

*Carol S. Weed and W. Kevin Pape*

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In anticipation of the 1997 SAA annual meeting's significant cultural resource management (CRM) component, the Insights column will feature a two-part article devoted to the results of a roundtable discussion in which the participants explore a series of questions designed to probe the changing directions in CRM programs.

In a recent [SAA Bulletin \(14\[2\]:12-13\)](#), Keller and Carr presented proposed changes by the Pennsylvania Historical and Museum Commission (PHMC), Bureau of Historic Preservation (BHP), to their CRM and Section 106 review process based on a plan to prioritize archaeological survey needs in the state. This article, other presentations offered by the PHMC at in-state meetings, and *SAA Bulletin* articles by Dave Snyder ([13\[5\]:19-21](#)), Lynne Sebastian ([14\[1\]:16](#)) and others have engendered several dialogues in various forums about the changing CRM climate. These dialogues have dealt with issues such as the shifting roles state historic preservation officers (SHPOs) play in CRM, improving the cost/benefit ratio of publicly funded archaeology, "caretaker" responsibilities as regards cultural resources, levels of investigation permissible under Section 106 and other mandates, and the effect of proposed changes on the responsibilities of project sponsors.

To examine these issues, we developed six questions designed to elicit several levels of response from the perspectives of various participants in the Section 106 review process. In the first part of the article, the roundtable is focused on three of the six questions that consider PHMC's survey prioritization plan, known as the "Watershed Model," in light of the wider context of emerging changes in CRM and Section 106 compliance. In the second part of the article, to be published in the March issue of the *SAA Bulletin*, the roundtable discussion is focused on the remaining three questions that consider alternatives to traditional Section 106 compliance strategies and the affects of these alternative strategies on our historical heritage.

To solicit input from various facets of the CRM spectrum, we asked Ellen Armbruster (Federal Energy Regulatory Commission, Office of Pipeline Regulation, Environmental Review and Compliance Branch); Kurt

W. Carr (Pennsylvania Historical and Museum Commission, Bureau of Historic Preservation); Susan Levitt (Columbia Gas Transmission Corporation, Construction Services, environmental project manager); Daniel G. Roberts (John Milner Associates, West Chester, Pennsylvania); and Lynne Sebastian (New Mexico state archaeologist) to participate in the roundtable.

Although imperfect in practice, the roundtable forum took place across the Internet, using email and the occasional fax to post the questions and corral responses. Participant responses have been shortened and edited for the purposes of publication. We want to thank all the discussants for their patience and willingness to participate in this forum. We hope that this roundtable will provide the basis for further discussions of the changing CRM climate.

## The Discussants' Opening Comments

The discussants responded at various times between November 26 and December 6. Sebastian, Roberts, and Armbruster each noted that coworkers or members of their staffs had contributed to their replies. Levitt noted that as the industry representative, she wanted us all to keep in mind that "In business, it is necessary to view money as a resource to be conserved as much as any natural or cultural resource. I believe that viewpoint is a major driving factor in all of the current reassessments of resource protection and conservation."

## The Roundtable

**Question 1:** As noted by Keller and Carr in *SAA Bulletin* 14(2):12-13, "...in response to a changing compliance environment, the PHMC...developed a plan to prioritize survey needs in Pennsylvania." While Carr was talking specifically about the plan developed for Pennsylvania, other states are beginning to develop similar responses. Does such prioritization maintain or violate the spirit of Section 106, which mandates inventory and evaluation of all potentially affected cultural resources?

**Carr (November 26):** The National Historic Preservation Act requires that federal agencies consider the effect of their actions on historic resources that are significant and eligible for the National Register. The Advisory Council on Historic Preservation and the National Park Service encourage the use of predictive models for identifying these resources. In Pennsylvania, we have identified 19 of 104 watersheds that contain a relatively large number of lithic scatters for which we have good data on chronology and lithic types. These watersheds have had relatively intense systematic Phase I and Phase II surveys. We are predicting that the collection and identification of additional lithic scatters in these 19 watersheds will not result in significant new data. In the review of state and federal projects, if our models predict that a lithic scatter will be affected by a project in one of these regions, our response is "no resources" because, in our opinion, the excavation of additional lithic scatters will not add to our understanding of past cultural behavior. If our models predict other types of sites, such as historic archaeological sites, quarry sites, prehistoric sites with subsurface features, rockshelters, or stratified sites, we recommend the appropriate surveys. In response to the question, we do not feel this process "violates the spirit of Section 106."

**Sebastian (November 27):** All that 36 CFR 800 requires in the section on identifying historic properties is that the federal agency "make a reasonable and good faith effort to identify historic properties that may be affected by the undertaking." It does not say that "all" properties must be identified, but neither does it say that the agency does *not* have to look if it would not be convenient, they cannot afford it, or they have an unsupported intuition that there would not be anything there. In our consultations about identification we encourage agencies to base their decisions about what would constitute a "reasonable and good faith effort" on many factors: the nature of the terrain, distance to water, vegetative cover, amount and results of previous survey, nature of the expected resources, and the nature of the anticipated effects.

**Levitt (December 2):** Section 106 already categorizes cultural resources as significant and nonsignificant. Surveys are already based on spatial patterns that are presumed to provide a representative view of buried resources, or, for structures, are limited to relatively arbitrary impact zones. Adding further categories seems

entirely within the spirit of the regulations as implemented today. If the cultural resource data collected to this point cannot be distilled into the type of model proposed by the PHMC, then the type of survey we are already doing is worthless. To industry, the data accumulated are also resources that are better used than archived.

**Roberts (December 2):** We all need to recognize that the Pennsylvania "Watershed Model" was developed by the Pennsylvania SHPO as a response to anti-archaeology political realities that arose over the past couple of years at the state, not the federal, level. Pennsylvania Act 70 was the legislative trigger. This act shifted the responsibility and cost of conducting archaeological surveys and evaluations under state-permitted projects from the permit applicant to the Pennsylvania Bureau for Historic Preservation (BHP). Thus, the act transferred the responsibility of such surveys from the developer, mining company, or other such private applicant to the Pennsylvania taxpayer, although the legislature provided only about a quarter-million dollars for its first year of implementation (1996): not nearly enough. But Act 70 is altogether another sad story in Pennsylvania. What is relevant here, I think, is that the "Watershed Model" is being applied not only to state-permitted projects, but to federal undertakings as well--and it shouldn't be. By subscribing to the notion that "upland lithic scatters" have little or no research potential, the "Watershed Model" allows the BHP to write off large areas of the Commonwealth without any identification procedures. While I agree that upland lithic scatters for the most part are not significant resources here in Pennsylvania, I think it is clear that many significant sites of other types and of other time periods will not even be identified (let alone evaluated, avoided, or effects otherwise mitigated) in 19 of the 104 watersheds in the Commonwealth--and more watersheds are to be added later as additional surveys are completed and exclusion criteria met. (The 19 watersheds now excluded equate to roughly 10-15% of the land area of the Commonwealth.) I think it is clear that the letter and intent of Section 106 is not being met in these watersheds, since (1) federal agencies will now not be required to "make a reasonable and good faith effort to identify historic properties that may be affected" (36 CFR 800) in most areas of the 19 watersheds, and (2) the ability of the Advisory Council to comment on such actions in those areas will thereby be precluded.

**Armbruster (December 4):** I do not think that prioritization per se violates the letter or the spirit of Section 106. The law requires that an agency "take into account" the effect of undertakings on historic properties. The agency should be considering what it takes to do that intelligently for each undertaking or class of undertakings. If a literature search is sufficient to do that, fine; if it requires a pedestrian survey, then so be it.

What I think does violate the spirit of Section 106, and all participants in the Section 106 process are guilty here, is going through the motions by rote, with no real thought applied to what types of properties might be affected in what circumstances. Unfortunately, I think that the system proposed by PHMC will simply turn into one more mechanism to be applied by rote by the various participants in the process.

**Carr (December 6):** The Pennsylvania SHPO has identified archaeological survey research priorities based on the strength of the existing database and what we think we know about the prehistory of the region. Since January, we have been reviewing state and federal projects using these priorities. We are not "writing off" resources; we are using the best available evidence to guide our recommendations on the need to manage significant archaeological resources. Based on our archaeological survey research priorities, we have identified 19 watersheds for which we are not recommending Phase I surveys to find additional lithic scatters. We will protect/manage recorded lithic scatters in these watersheds, but Phase I surveys will only be recommended in settings where we expect to find sites other than lithic scatters.

**Question 2:** If the spirit of Section 106 is being violated, what are the viable alternatives that consultants, agencies, and clients (i.e., project sponsors) might pursue that would preserve the Section 106 ideal but reduce both time and monetary commitments?

**Carr (November 26):** We do not feel that Section 106 has been violated by this process. The SHPO makes recommendations to federal and state agencies. In accordance with the regulations of the Advisory Council, the agency can disagree with these recommendations and, within reason, the agency can proceed.

The BHP has considered a variety of mechanisms to "reduce both time and monetary commitments" and we have always striven for efficiency. One component of our management strategy has been to conduct intensive surveys including a report detailing expectations, methods, and results. We have not considered reducing our



survey guidelines or report standards. We would rather see fewer systematic surveys than many poorly documented, superficial surveys.

**Sebastian (November 27):** My problem with the Pennsylvania approach (and my knowledge is based on only a brief presentation at the NCSHPO summer meeting) is not that it violates the spirit of Section 106 by requiring less than 100% inventory. My problem is that the decisions about when to survey and when not to survey seem to be made very mechanically and to be driven by political and economic issues, not by information potential and research needs or by efforts to ensure the most effective resource protection.

**Levitt (December 2):** Another logical step is to categorize the nature of the potential impacts as opposed to the nature of the potential resource. The level of impact should be easier to quantify than the value of unknown cultural resources, and regulators may feel more comfortable that they are adequately protecting cultural resources. It is likely that both approaches have merit in various situations.

**Roberts (December 2):** At a meeting held on December 7, 1995, to publicly present the "Watershed Model," one member of the audience replied that a better alternative to full Phase I surveys in the 19 watersheds would be Phase Ia surveys designed to do a quick overview of the project area. I, too, think this is a better approach than the "Watershed Model." Such "minimalist" surveys have had some success in states like New Jersey and Vermont, and generally entail a literature search, field walkover, perhaps some minimal shovel testing, and the preparation of a brief letter-report. In my experience, such Phase Ias on smaller projects only infrequently result in the discovery of significant sites, but at least some knowledge of what is being written off is obtained. The BHP, however, is apparently concerned that the percentage of surveys that result in the identification of sites in Pennsylvania is only about 65%. While I do not have comparative information from other states, 65% does not seem too bad. Frankly, the problem in Pennsylvania historically has been that the BHP is reluctant to sign off at the Phase I level on identified sites that clearly are not significant. That is, far too many Phase II evaluations have been requested, and done, after a recommendation of "no further work" has been made by the consultant. Indeed, Keller and Carr give themselves away in this regard in their *SAA Bulletin* article: on page 12, they state that "upland sites have limited research potential beyond settlement pattern studies," but on page 13 note that "the BHP will continue to protect known and significant sites in these regions regardless of their topographic setting"--including upland lithic scatters with limited research potential. Accordingly, it seems to me that the "Watershed Model" is more of an a priori formula to relieve the BHP of making considered management decisions than an appropriate procedure under Section 106 of the National Historic Preservation Act.

**Armbruster (December 4):** Dan Roberts correctly points out that many federal agencies have sloughed off much of the Section 106 responsibility onto SHPOs. The reason agencies do not assume their proper authority under the law is that they never wanted it in the first place. I cannot tell you how happy many agencies (mine included) would be if they woke up one morning to find that the NHPA and NEPA had fallen off the face of the earth. This sentiment applies to our applicants as well (or even more so). This situation leads to even more rote work, as the applicant desperately wants to "get through the Section 106 process," and they try to do whatever they did the last time that seemed to work (see Sue Levitt's comments). And the agency really just wants to have done with it.

I also agree with Dan Roberts when he points out that the PHMC, along with other SHPOs, cannot seem to let go of some projects. (And for an agency to disagree with a SHPO adds a great deal of time to the process, so, is it faster to do the extra work or go through a dispute resolution process?)

**Carr (December 5):** In the past 15 years, BHP has conducted a very high level of survey, and, in hindsight, the Phase Is were the "straw that broke the camel's back." As stated in my first response, getting a Phase I survey completed is half the battle, and Phase Ias or "minimalist" surveys are not the solution. Developers and agencies do not choose that option because they want a final answer, quickly. I am also strongly opposed to "letter reports," and I do not feel that these are a solution to any of our problems. Alternative forms of mitigation (after we know the nature of the affected resources) are a more productive solution. I can hear the response, "But, without doing Phase Is, how will you know?" Like every other state, we use the best available model.

**Question 3:** In the PHMC case, only one type of resource is being affected by the prioritization. This is the upland, prehistoric lithic scatter without features and diagnostics. In order to streamline CRM survey needs, is it necessarily appropriate to single out specific resource classes or should all cultural resources be considered equally? If the latter scenario is preferred, what is a viable method for modeling space so that variables affecting both prehistoric and historic siting are weighted equally?

**Carr (November 26):** All types of prehistoric resources were included in our prioritization process. This resource was singled out because the upland lithic scatter yields less information than other site types. In our opinion, for certain regions of the state, additional lithic scatters (including those with diagnostics) will not add significant information to our understanding of past cultural behavior, and therefore we are not recommending Phase I surveys to find more lithic scatters. We recommend further work for recorded lithic scatters, but we are not encouraging state and federal agencies to find more of these site types. A similar process could be applied to historic archaeological sites, especially farmsteads. However, it is our current opinion that we have not investigated a sufficient number of these resources anywhere in the state to make this determination.

**Sebastian (November 27):** There is a whole huge literature on how to make projections of archaeological site densities, types, locations, etc. If we have to prioritize survey effort, we know a lot about how to do it--the question is, What result are we hoping to achieve? Do we want to decrease the number and costs of surveys required? If so, then we could take the Pennsylvania approach, which concentrates survey in the areas where the least survey has been done. If, on the other hand, we want to ensure maximum resource protection for dollars expended, we might concentrate our surveys in those areas where sites are most likely and/or where development is most common and stop surveying in areas where sites and/or development are less likely.

**Levitt (December 2):** Cultural resource management seems to have two goals: resource preservation and accumulation of knowledge. To industry, it seems pointless to spend the amount of effort on data accumulation if it cannot be put to productive use whether in demonstrating the real need to preserve a specific resource or in demonstrating the real lack of a need to preserve. The application of what is known to making decisions about what is unknown has economic benefits, but it is really just a commonsense approach.

**Roberts (December 2):** Although Keller and Carr (*SAA Bulletin* 14[2]:13) state that "we will continue to review our historic files for projects in the 19...watersheds," the BHP does not routinely conduct detailed review of historic maps, atlases, or other historical documents when completing its project review. By "historic files," Keller and Carr are referring to the BHP's standing structure site files. By the BHP's own admission, historic archaeological resources, particularly those in rural areas, have routinely been identified only by accident during surveys of high probability locales for prehistoric archaeological sites. In my opinion, all classes of potential resources should be afforded equal consideration during project review, although I would recognize that this may be an unachievable ideal in some cases. Nevertheless, historic archaeological resources, with the possible exception of urban sites in Pittsburgh and Philadelphia, have gotten short shrift by the BHP, and the development of predictive models for such resources in the Commonwealth has been lacking. Until such models are developed, the BHP should minimally consult historic maps and atlases, rather than just the USGS quadrangle sheets, in its project review.

**Armbruster (December 4):** When considering high and low probability areas, and prioritizing resources, one has to consider individual types of resources. However, I do not see how the PHMC plan would streamline the Section 106 process for our FERC applicants, unless upland sites were the only type of resource likely to be encountered in the area of potential effect. We would still require some study/review to identify other types of resources.

*Carol S. Weed and W. Kevin Pape are CRM consultants with the firm Gray & Pape, in Cincinnati, Ohio. Pape is also the associate editor for the Insights column.*

---

[LAST PAGE](#)

[TABLE OF CONTENTS](#)

[NEXT PAGE](#)

---

## Exchanges -- Interamerican Dialogue

# Archaeological Investigation and Conservation in Honduras

*Carmen Julia Fajardo Cardona*



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The Honduran Institute of Anthropology and History (IHAH) is a public institution that was created by the Honduran state and endowed with a variety of responsibilities. One of these was established in Decree 01-84, the Law for the Protection of National Cultural Patrimony, which was passed by the National Congress in 1984. Within the framework of this decree, the state, as represented by the IHAH, defines policy and develops procedures designed to defend, conserve, rescue, restore, and protect public property defined as "national cultural patrimony." Research is important in this process, and my function in the IHAH is to support proposals that are presented, encourage those that are developed, and coordinate those funded by external technical and financial sources in accordance with the guidelines of interinstitutional, regional, national, and international agreements.

### **Archaeological Investigation: Our Experience in the IHAH**

In Honduras, as in most countries of the world, cultural patrimony is discovered and restored on a continuous basis. A large part of this heritage is recovered through archaeological research, and a variety of archaeological remains are identified throughout the country on a daily basis. However, until recently, archaeological research did not include the development of methodologies for conserving these discoveries. Rather, past research was an activity that focused on the analysis of architecture in order to identify the original builders. Furthermore, deposits containing evidence of lengthy human occupation often remained exposed to deterioration under the belief that at some later, yet unspecified, time these materials would be transported to laboratories for analysis. Prehistoric remains uncovered during other professional activities likewise remained exposed to the elements. In some cases, entire archaeological sites were destroyed.

From its inception in 1975, archaeological investigation and the conservation of Honduran cultural patrimony have been the primary functions of the IHAH. However, these functions became secondary to more urgent and short-term rescue projects. One program was developed by U.S. archaeologists Gordon Willey, Robert Sharer, and William Lee to address the problem of site destruction and attempted to reconcile investigation with conservation, but it was limited to the ruins of Copan. This program, however, greatly helped the institute to reorient its work during subsequent years.

Since 1980, a number of projects have been developed by the IHAH, but most have been focused exclusively on restoration. The most well-developed program, the Copan Mosaic Project, was originally conceived as a rescue

and salvage project in 1985, with William Fash (U.S.) serving as director and Rudy Larios (Guatemala) as codirector, and consisted of numerous activities, including the following:

- Documenting and cataloging thousands of sculpture fragments from building facades found on the surface of Copan's principal group.
- Reconstructing sculptures from fragments that had been collected over a long period of time.
- Analyzing and interpreting the stone sculptures.
- Conserving and storing the finds to guarantee adequate long-term conservation.

The success of the Copan Mosaic Project stimulated individual and collective initiatives in the IHAH. A new project, the restoration of the hieroglyphic stairway at Copan, developed as a result of this process and eventually acquired more ambitious goals, ultimately growing into the Copan Acropolis Archaeological Project.

## **Characteristics of Archaeological Work in Honduras**

The principle that guides archaeological research in Honduras is to "excavate in order to recover all possible data and, at the same time, preserve the finds so that future generations will have access to this information."

In Honduras the conservation of archaeological remains begins in the field. In projects initiated since 1982, both in the Maya area and at other recently discovered archaeological sites, an attempt has been made to reconcile the strategies of conservation with those of investigation with two goals in mind. The first is to recover the greatest quantity of information through the exacting control and careful documentation made by the researcher during fieldwork. The second goal focuses on archaeological conservation during or immediately after excavation; archaeologists and their assistants are responsible for rigorously observing the basic principles of conservation. This responsibility, called "first aid," consists of cleaning and curating artifacts and refilling at least a portion of the excavated area. In our experience, such "first aid" is vital, for it reduces the environmental impact that archaeological remains suffer when preventative measures are not considered. The consequences of inadequate protection can be observed on the monuments and sculptures at Copan, many of which are quite deteriorated due to their exposure to the climate. Although experts in conservation and restoration have accomplished an extraordinary job to avoid further deterioration, these efforts are costly in terms of time, energy, and funds, all of which are limited.

Nevertheless, the effort continues. The IHAH, the codirectors of the Copan Acropolis Project, and the Copan Association (a private organization) designed the construction of the Museum of Maya Sculpture. This museum seeks to guarantee the conservation of the Copanec Culture, including its environment, so that future generations will be able to appreciate their cultural heritage. One aspect of the museum's activities includes a systematic program to create replicas of the various stelae, monuments, and facades found at Copan. The replicas will substitute the originals at the site where they were found, while the originals will be transferred to the museum where temperature and humidity can be artificially controlled for their protection. The construction of a data bank with information regarding all the Maya sculpture that has been recovered is also planned. Government support (as expressed through the IHAH) of this project has significantly contributed to its success. This assistance included the definition of a research policy by the IHAH, as well as the management and funneling of all external financial resources through established institutional routes.



If I have emphasized the ruins of Copan in the greater part of this essay, it is because Copan is one of the most beautiful sites within the Maya region and it is an important national monument that bolsters the pride of the Honduran people. In 1984 UNESCO recognized the importance of these ruins and declared the area a world heritage site. The significance of Copan is therefore not restricted to Honduras. Although similar policies guide archaeological investigations of the many other sites in Honduras, less is known of these sites. I will, therefore, continue with the experiences of Copan and discuss some of the goals met during more than 20 years of continuous work.

Now that the mapping of archaeological remains in the Copan Valley has been completed, numerous theories regarding the original population have been developed. Likewise, a set of preventative methods have been established that avoid the destruction of cultural patrimony through the encroachment of so-called "modernization." This program has led some of the participating researchers to comment about the usefulness of conservation methods that not only protect endangered resources and document their contents, but that can also be used as opportunities to be innovative and informative, and make a contribution to research activities.

I agree with this assessment. Excavation without conservation and publication only results in destruction. Currently, we Honduran archaeologists are organizing a forum of specialists that will define and discuss regulations to guide excavation and conservation. The regulations that develop out of this forum will take into account local considerations, national legislation, and international principles regarding the protection of cultural heritage.

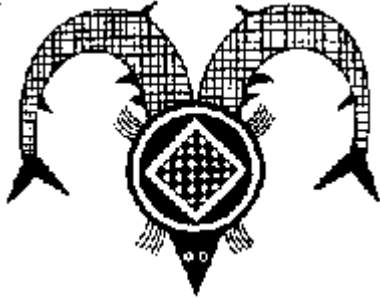
Our policy at the IHAH is based on the belief that conservation and research should not be developed separately. However this policy alone is not sufficient. In many of our projects, especially rescue and salvage projects, laboratory analysis is not conducted. And in other cases, the laboratory work is limited only to the description and curation of the objects excavated. In only a few cases are artifacts restored and exhibited. Few archaeological investigations employ a full program of research and conservation, a situation that is not preferable. In our case, it occurs because the financial support that exists cannot meet the demands generated by so many discoveries.

In spite of the many limitations we face, we are now trying to develop coherent archaeological programs. In Honduras, the most important focus is the initial preservation of the material. We are achieving this goal by taking preventative measures in the field and ensuring that archaeological materials are maintained in the appropriate conditions for preservation. The next goal is to develop permanent workshops or laboratories that will promote two intertwined activities: research for conservation and conservation for research.

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## Working Together



# Painting a "New" Face on CRM: Integrating Traditional Culture and Archaeology

*Janet Cohen and Nina Swidler*

For several years now, the Navajo Nation Historic Preservation Department's (HPD) Roads Planning Program has combined the expertise of archaeologists, Navajo cultural specialists, and ethnographers for an interdisciplinary, integrated approach to cultural resource management (CRM) investigations. The purpose of these investigations has been to identify, protect, and manage prehistoric and historic sites, including traditional cultural places, sacred sites, in-use sites, and burials, situated along Navajo Nation road improvement projects. Funding for these projects derives from the Federal Highway Administration and is passed through the Bureau of Indian Affairs (BIA) to HPD under an Indian Self-Determination and Education Assistance Act contract (known as the 638 contract). Investigations are accomplished by both in-house field service staff and third-party contractors to comply with Section 106 of the National Historic Preservation Act and the Navajo Nation Cultural Resource Protection Act. The following discussion will focus on the evolution of our programmatic procedures that enables researchers to work together using a multidisciplinary approach.

At the time of the Roads Planning Program's inception in 1989, all of the program staff and many in HPD had a strong archaeological orientation toward CRM. Before the ethnographic component was added to the program, archaeologists primarily focused on intensive field surveys to identify prehistoric and historic resources. Although they occasionally conducted interviews to collect additional information, this aspect of the archaeological investigations was, at best, unstructured. Since the practice of archaeology precludes the identification of places without material remains, a wide range of what we now refer to as traditional cultural properties (TCPs), such as prayer offering places, herb or mineral gathering areas, and landscape features, were unintentionally overlooked.

The publication of *National Register Bulletin 38* (guidelines for identifying and evaluating TCPs) in 1990 and a predicted threefold increase in road construction funding levels for the Navajo Nation in 1991 spurred the Roads Program to build a CRM program that included both archaeological and traditional culture components. Using ethnographic methods to identify places of traditional importance is not new to Navajoland, even in the context of CRM. For over a decade, discussions of consultation with tribal members to identify these types of properties have appeared in the literature. For example, in his 1982 *American Antiquity* article [47(3):634-642], Dave Doyel promoted a way in which places of concern to local Navajo communities could be recognized through consultation with medicine men.

By late 1992 the cultural specialists and ethnographers, interacting as a team, were conducting ethnographic assessments of our linear project areas. These assessments involved the research of documentary sources and the interview of community residents and tribal officials to identify TCPs and burial locations. From this information, the team developed protection or other management strategies for places that might be directly or indirectly impacted by construction activities. What had previously been an informal and inconsistently applied

protocol for interviewing by archaeologists working alone developed into a structured and systematic procedure for conducting CRM ethnography.

This team approach allowed for complementary areas of expertise to be utilized for the common goal of protecting traditional and historical sites. Cultural specialists provided the framework for identifying places important to Navajo people. Educated in their traditions by elders, they came to the job well versed in Navajo language and culture. They not only provided language interpretation, but, of equal importance, they provided the cultural interpretation of the information gathered during interviews. The cultural specialists knew *how* to ask questions correctly to elicit information required for management purposes. Their knowledge of traditional "etiquette" allowed them to establish rapport even in the most difficult and sensitive of situations. Steeped in the most fundamental social rules, they enjoyed access to traditional medicine people and the elderly, both crucial sources for identifying traditional and sacred places. The cultural specialists also maintained connections within family, clan, and community networks and could rely on the wisdom of Navajo spiritual leaders and traditional practitioners to provide guidance regarding management recommendations.

On the other hand, formally trained ethnographers provided guidance on interview methodologies. While the collection of information is essential, the ability to successfully communicate that information to the intended audience is also critical. Thus, the ethnographers' skills in technical writing and computer applications were a welcome addition. Their experiences and education also allowed them to adapt more easily to a bureaucracy based on the legislative mandate of Section 106 than could the cultural specialists. This background guided the more formal structure of interviews, field notes, and reports.

While the team approach worked well for the cultural specialists and ethnographers, it unfortunately excluded a crucial component: archaeology. Little collaboration between the archaeologists and the ethnographic team took place; fieldwork efforts were not coordinated, and separate reports were produced. This inevitably led to inconsistent and incomplete project management recommendations.

The basic problems in coordinating the ethnographic and archaeological components of CRM assessments unfolded for several identifiable reasons, most notably the different theoretical perspectives and methodologies that the archaeologists, ethnographers, and cultural specialists brought to the job. Program archaeologists had been doing CRM work for compliance with Section 106 for many years while the ethnographers and cultural specialists had little or no practical experience in that arena. Further exacerbating these differences was the perspective held by the cultural specialists, ethnographers, and other CRM professionals that the Section 106 framework was, and is not, an adequate mechanism for protecting and managing traditional places. Making the necessary cognitive shift from a traditional perspective to the 106 framework, and then acting on it for practical management purposes, was particularly difficult in light of this perspective, especially for the cultural specialists.

Another problem was of a more pragmatic nature. The level of effort necessary to complete an ethnographic assessment was greater and more time intensive than a standard Class III archaeological survey. While the archaeologists had to identify, record, and make management recommendations of sites in the assessment phase, the ethnographic team did this, plus developed and implemented mitigation or treatment measures. This difference caused scheduling conflicts for the initiation and completion of projects.

Since our in-house fieldwork procedures served as a model for the way contractors performed assessments, similar problems developed on projects contracted to third parties. These difficulties can be traced to the organization of the earliest contracts that combined archaeological and ethnographic methodologies. In these contracts, archaeology and ethnography were presented as separate but equal contract components. Appearing as such in the scope of work, these documents did little to promote either an integrated field strategy or reporting structure. Consequently, on contracted projects, archaeologists and the ethnographic teams tended to conduct the fieldwork independently from one another. Again, this resulted in inconsistent and incomplete management recommendations at the reporting phase, particularly with regard to evaluation and management recommendations made for TCPs. A primary cause was the ideological differences archaeologists and ethnographers maintained for the management of archaeological resources vs. places of traditional cultural importance. Resulting reports were often so fragmented that they were next to impossible to review for technical

and compliance purposes. The Road Program's lack of guidance on a range of complicated issues including contract structure, informed consent, site mapping, reburial of human remains, and consultation with interested parties, combined with the acute philosophical differences, exacerbated the purely logistical problems experienced by researchers.

Although it was difficult to accept that the old way of organizing our work was not working, this realization has helped effect positive change. Great strides have been made in the past year or so resolving earlier problems. Today, project work on both in-house and contracted projects reflects a truly integrated approach. In-house, we reorganized our technical staff into two nondisciplinary subsections: field services and contract administration. The field services section now consists of archaeologists, cultural specialists, and ethnographers. In-house cross training has provided a better appreciation for the respective disciplines, while ongoing formal training has led to a better understanding of Section 106 requirements. Fieldwork efforts are now dovetailed, and as a team, staff are collaborating on forms and maps and producing integrated reports.

Such collaborations help archaeologists gain a more complete understanding of historical sites with traditional components. For example, the cultural specialists contribute a literal (Navajo) interpretation of the material remains of ceremonial sites and features. Similarly, with prior knowledge that a given ceremony was held in a specific place, a cultural specialist can identify the material remains of spatially discrete ceremonial components for the archaeologists. They also provide an interpretive link between and among historical sites that are spatially and temporally associated. Archaeologists, on the other hand, have taught the ethnographic team more precise approaches for descriptive recording and mapping of identified resources. Changes in data collection such as these and a developing respect of one another's strengths have resolved many of the earlier problems. As their knowledge and experience increased, the cultural specialists have taken on the primary responsibility for in-house ethnographic work from the fieldwork stage through report production, working closely with the archaeologists. At the same time, the ethnographers are gradually moving away from in-house fieldwork into contract administration.

Similar changes have been incorporated into our contracts. The directions furnished to contractors have been revised to achieve greater integration of both investigation techniques and report presentation. For example, the emphasis on separate application and presentation of archaeological and ethnographic methodologies is gone. Scopes-of-work have been completely overhauled to reflect one set of goals, one set of project specific objectives, one set of reporting requirements, and one set of deadlines. We now receive integrated reports that indicate that researchers are coordinating their efforts and presenting data with a unified voice.

Although numerous problems still exist, the majority no longer emanate from program procedures but from a number of larger issues that still need to be addressed. Of paramount importance is the development of a tribal historic preservation plan that will enable research to be conducted that is relevant to both the Navajo people and the national preservation program. Along with this is the need to develop and regularly update policies for issues such as the treatment of human remains, consultation with interested parties, informed consent, and curation.

Ideally, with a preservation plan in place, the next challenge is to develop a methodology that will allow us to adopt a less piecemeal, more ecological strategy for cultural preservation. Currently, in the context of road development, cultural resource investigations are conducted *after* project scoping and planning are completed. A preferred approach is to have preservation specialists involved in the earliest stages of project planning. This would allow for the incorporation of information regarding cultural landscapes and regional preservation concerns into the decision-making process that selects alternative project designs. Information concerning specific sites could then be gathered during the Section 106 assessment process.

Another problem to be addressed is that many federal laws, regulations, and policies conflict with one another. For example, Federal Highway Administration policy states that highway funds *cannot* be used to investigate cultural resources outside of proposed construction zones. On the other hand, the regulations of the National Historic Preservation Act specifically direct us to identify and evaluate all historic properties located within the area of potential effect of an undertaking. In the case of many cultural resources, and particularly TCPs, the area of potential effect extends far beyond the construction zone! Resolution of these contradictions is essential.



Finally, it is our opinion that the entire project planning and design process should reside within one organization. Currently, a significant problem is the fragmentation of project planning, design, consent, and construction responsibilities. Different programs within the tribe are responsible for developing the seven-year priority construction schedule, for conducting the cultural resource inventories, and for performing the project review to ensure all necessary consents and permits are in place. BIA contracts the environmental assessments to a third party and retains full control of project design and construction. This division of responsibilities without a central coordinating entity does not facilitate the exchange of relevant information or promote cooperative efforts. This contest for control emanates from a lack of trust that BIA and the tribe have for one another and is not an issue that is easily solved or overcome. For example, in an effort to coordinate the environmental requirements of road projects, the tribe attempted to expand our contract with BIA to provide the necessary services for preparation of environmental documents. Unfortunately, BIA rejected this proposal. We hope that at some point in the future, the Navajo Nation will be able to minimally assume this responsibility. In the long run, this would enable the Navajo Nation to take a more holistic approach to economic and community development while addressing Navajo preservation concerns.

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The Navajo Nation Historic Preservation Department is acknowledged for giving us the opportunity to write and update this article. The opinions expressed here are solely those of the authors. Thanks, too, to Mike Yeatts for his valuable comments on the draft and Kurt Dongoske for encouraging us to publish our thoughts. Previous versions of this article were presented at the 1995 annual meeting of the Society for Applied Anthropology and the 1995 Navajo Studies Conference.

*Janet Cohen and Nina Swidler are with the Navajo Nation Historic Preservation Department.*

[Return to top of page](#)

---

**LAST PAGE**

**TABLE OF CONTENTS**

**NEXT PAGE**

---

## Bureau of Land Management Celebrates Its Golden Anniversary

*Robert Brook*

Last July the Society for American Archaeology signed a "partnership agreement" with the Bureau of Land Management (BLM) as the first step in commemorating the bureau's 50th Anniversary and recognizing the agency's key role in administering the federal government's largest, most culturally diverse and scientifically varied body of prehistoric resources. The formal agreement is printed on page 29.

Several sites administered by BLM were chosen as especially suitable to publicize the anniversary, and are described below.

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- [Alaska--Mosquito Lake](#)
  - [Arizona--Murray Springs](#)
  - [California--Calico Hills Archaeological District](#)
  - [Colorado--Lowry Ruins National Historic Landmark](#)
  - [Idaho--Baker Cave](#)
  - [Nevada--Hidden Cave and Grimes Point Archaeological Area](#)
  - [New Mexico--Casamero Chacoan Outlier](#)
  - [Oregon--Macks Canyon Site](#)
  - [Utah--Mule Canyon Ruin](#)
  - [Wyoming--Medicine Lodge Archaeological Site](#)
  - [Text of Partnership Agreement](#)
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### Alaska--Mosquito Lake

The Mosquito Lake archaeological site is located in the Atigun River valley along the north flank of Alaska's Brooks Range, 110 miles above the Arctic Circle. The site lies on a thinly vegetated limestone outcrop at the mouth of the scenic Atigun River Gorge, overlooking the lake from which it gets its name. The site lies adjacent to the Dalton Highway, an all-weather gravel road that follows the route of the Trans-Alaska oil pipeline and connects interior Alaska with the Prudhoe Bay oil fields. This highway provides access to the remote Alaskan wilderness for individual visitors and tour groups. A BLM campground is located at nearby Galbraith Lake, and a highway pullout with interpretive signs discussing the region's culture history will be constructed within the next two years overlooking the Atigun Valley and the Mosquito Lake locale.



The site was excavated in the early 1970s as part of the massive cultural resources mitigation project associated with the construction of the Trans-Alaska Pipeline. Ninety-five percent of the fieldwork at the site has been completed. A 400-page preliminary report was written in the late 1970s and will serve as the core of a pending publication. The fieldwork remaining to be done deals with identifying lithic source locales and field checking some ambiguous details of the original report. Kristen Wenzel, an anthropology graduate student at Eastern New Mexico University, is currently engaged in this work as a thesis project.

The Mosquito Lake site was probably established as a seasonal hunting camp primarily for caribou and Dall sheep and possibly to utilize the fish resources of the nearby lakes. The site was occupied intermittently from 4,000 to 2,600 years ago by the people of the Denbigh Flint Complex (DFC), an archaeological culture that forms the basis for the Arctic Small Tool tradition and represents the earliest North American Eskimos. The DFC is the founding culture of the Eskimo Continuum--all subsequent Arctic Eskimo cultures appear to stem from it, including those as far removed as Greenland. It is difficult to overstate the importance of this site because of its place at the beginning of the culture history of all Arctic Eskimo cultures and because of its inland (Brooks Range) location. Data from this site will be extremely important when applied to the debate regarding the terrestrial or maritime genesis of the DFC and the primary subsistence strategies of the earliest Eskimos. The DFC is of additional interest because it demonstrates the Old World core and blade technology along with New World bifacial reduction technology. To the degree these technologies are manifested in the DFC, it is unique among North American archaeological cultures and suggests Old World to New World population movements at least four millennia after the Bering land bridge ceased to exist. Additionally, the stone tool assemblage at the site provides in-depth information on the step-by-step manufacturing sequence of the DFC's most unique tool, the "mitten-shaped" burin, as well as insights into lithic procurement strategies. The DFC occupation at the site was followed by the Norton Culture Eskimos who utilized the site until about 1,700 years ago. More recently, about 300 years ago, an unidentified Eskimo group (possibly precontact Nunamiut Eskimos) used the locale. It was also used by postcontact Nunamiut Eskimos during the late 1800s.

[Return to top of page](#)

## **Arizona--Murray Springs**

The Murray Springs Clovis Site was excavated by the University of Arizona under the direction of C. Vance Haynes from 1966 to 1971 with funding from the National Geographic Society. The site is one of the very few places in North America where Paleoindian artifacts have been found buried with the bones of extinct, late Pleistocene animals. The site is important because it contains an undisturbed stratigraphic record of the past 40,000 years and is one of the earliest human occupations in North America, producing a radiocarbon date of 11,000 years before present.

Murray Springs is unique in having three Clovis activity areas: one where a mammoth was partially butchered, another where at least 11 bison of an extinct form were killed, and a hunter's campsite where portions of the game were prepared and where stone tools were used, repaired, and lost or discarded.

One of the characteristics that makes the Murray Springs site so extraordinary is that Clovis occupation surfaces were found in place. Bones, tools, and a hearth were discovered exactly where Clovis people abandoned them, giving us clues about their subsistence practices and the paleo-environment in which they lived.

A visitor trail has been constructed through the site, and a brochure will be printed and interpretive signs installed in the upcoming year. A group of volunteers called the Paleo Patrol monitors the site on a regular basis. The Paleo Patrol was started with a grant from Agnese Haury in 1994 for the purpose of keeping an eye on Murray Springs and other significant sites along the San Pedro River.

[\*Return to top of page\*](#)

## **California--Calico Hills Archaeological District**

The Calico Hills Archaeological District is a 2,000-acre area situated just north of Interstate 15, approximately 10 miles east of Barstow. This area contains archaeological sites, including lithic quarries, Native American trail segments, lithic work stations, and camp sites dispersed over rolling hills that separate some of the large, dry playas of the California desert. The district was listed in the National Register of Historic Places in 1968 and is managed by the Bureau of Land Management as an "Area of Critical Environmental Concern" for scientific inquiry and interpretation.

Visitors can see the remains of tool making and walk the trails that connected lakes when they were full of water during the early Holocene. Manix Lake Basin, Coyote and Troy dry lakes, and the Mojave River all had water that attracted humans to the vicinity. It was here that tools were made that enabled the prehistoric inhabitants to harvest the abundant plant and animal resources that would have been present during wet or pluvial periods. Visitors can also see the area where famous paleoanthropologists Louis S. B. Leakey and Ruth DeEtte Simpson excavated while testing their hypothesis that human occupation began in the New World at an earlier time than is generally accepted by conventional scientific thinking. The balk and several units are exposed in an alluvial fan where visitors can see desert geology, an earthquake fault and in situ artifacts.

After over 30 years of scientific inquiry, the excavation of the Early Man portion of the site has provided extremely important data on depositional geology, paleoecology, micropaleontology, and rock mechanics. The district has been the focus of several master's theses in anthropology and geology. Studies on paleohydrology, catchment basin analysis, faulting, and Lake Manix pluviation, as well as research on shoreline archaeology, trail systems, and determinants of natural vs. cultural breakage of siliceous rock materials, are among topics that continue to be investigated. One of the most valuable contributions of the Leakey/Simpson excavations was the introduction of elaborate scientific data-collecting techniques focusing on the interaction of the development of alluvial fans and the distribution of artifactual and non-artifactual rock material.

While the primary excavation at the Calico Hills Archaeological District has not changed the accepted dating of human occupation in the New World, the examination of geological data as a result of the archaeological excavation has documented the presence of humans in the Mojave Desert to over 10,000 years ago. The collection of tens of thousands of items from the surface and subsurface of the district and their curation will give archaeologists and other scientists many years of opportunities to test hypotheses on a variety of issues related to Mojave Desert paleoecology and environment. Future research will certainly focus on the relationships of the artifacts and non-artifacts to alluviation, as well as on the huge lithic quarry scattered throughout the district, the well-preserved faunal record represented within the district, and the aboriginal trail network that radiates to the surrounding dry lake beds. The district continues to attract scholars from numerous disciplines conducting original desert research.

Tours are given by staff members of the BLM from the Barstow Resource Area and by the Friends of Calico. Tours begin at the interpretive center and generally end at one of the surface sites or at the balm. Visitors also can participate in the biannual archaeological symposium and hear speakers talk about desert ecosystems, participate in excavation, and walk through the area on trails that at certain times of the year are covered with brilliant displays of desert wildflowers.

[Return to top of page](#)

## **Colorado--Lowry Ruins National Historic Landmark**

Lowry Pueblo was constructed by ancestral Pueblo Indian people about A.D. 1060 on top of the ruined pithouses of an 8th-century occupation. The inhabitants were farmers who raised corn, beans, squash, and tobacco. Lowry began as a small village of a few roofed-over rooms and central kivas (ceremonial features). Between A.D. 1085 and 1170 several more rooms, the Great Kiva, and the painted kiva were added. This period of occupation exhibits architectural characteristics of the style prevalent in Chaco Canyon far to the southeast. The local architectural style returns again with later additions to the pueblo. When abandoned, the pueblo consisted of 40 rooms, some of which stood three stories high, and eight kivas. The Great Kiva was used throughout the life of the pueblo and was likely a ritual place of importance to the region. Lowry Pueblo Ruins were first excavated in the early 1930s by Paul S. Martin of the Chicago Field Museum of Natural History. Martin's excavation led to a realization that this site was of national importance, although it was not until 1967 that Lowry Ruin was designated as a National Historic Landmark because of its importance to southwestern archaeology.

Lowry Pueblo is the focal point for a large puebloan community. It reflects a long-lived Basketmaker through Pueblo III occupation of the area and its architecture shows influence from as far away as Chaco Canyon. Many of the sites around Lowry have been destroyed by agricultural expansion, making site preservation at Lowry especially important. Modern Pueblo people believe Lowry was important because of its location on a low rise, giving Lowry occupants sweeping views of what is now the Four Corners region. Paul Martin's excavations were some of the first scientific explorations in the area and his collections, housed at the Chicago Field Museum, remain an important legacy for southwest archaeology.

Lowry Ruins hosts about 12,000 visitors a year. It is open to the public all year long. Lowry has been stabilized, interpreted, and is a site that visitors can enjoy. Onsite there is an introductory sign and a registration box. Numbered stops throughout the site are keyed to a self-guided tour and brochure. Lowry serves as a complement to Mesa Verde and is perhaps more typical of larger sites in southwestern Colorado. A CD-ROM for an interactive museum exhibit to be displayed at BLM's Anasazi Heritage Center has been developed to interpret the archaeology at Lowry. Four Native Americans were interviewed and provide a valuable perspective on the site and its landscape.

[Return to top of page](#)

## **Idaho--Baker Cave**

Baker Cave consists of a lava tube located in the lava fields of southern Idaho. The cave was occupied for a short time about 1,000 years ago by occupants who had apparently trapped a small bison herd consisting of at least 17 animals. They butchered the animals at the kill site and carried selected parts back to the cave. In addition to the bison, a large number of rabbit remains were found in the cave, many with burned or butchered bones, indicating their inclusion in the diet.

The Baker Cave excavation has produced data that bears on several important research questions, most importantly the nature of the Late Archaic period in southern Idaho. The data collected from the site provide one of the first reasonably complete and temporally controlled collections from the Late Archaic in this part of Idaho. Further, the archaeological information contributes to the understanding of Late Archaic seasonality and

bison procurement/butchering. Documentation of bison procurement as a mid-winter activity is particularly informative, contrasting with traditional views of winter subsistence patterns.

The story of Baker Cave has been told through a mobile museum display. The display includes artifact replicas, photographs, and art work, and consists of two hinged panels, each with three segments one meter long, forming the outline of a buffalo. No on-site interpretation of Baker Cave has been undertaken.

## **Nevada--Hidden Cave and Grimes Point Archaeological Area.**

Hidden Cave is situated on a hillside that was once a shore of Ice Age (Pleistocene) Lake Lahontan. It overlooks the broad Lahontan Valley in western Nevada near Fallon, Nevada. The cave was rediscovered in the 1920s and excavated for the first time in 1940; professional excavations at Hidden Cave were continued in 1951 and again in the late 1970s and early 1980s. Since a high proportion of the artifacts found at Hidden Cave were unbroken and arranged in concentrations, archaeologists have concluded that people 3,500 to 3,800 years ago used Hidden Cave as a cache site rather than as a shelter. Projectile points, other weapons, fishnets, tools, food, and many other articles that were not carried by the cave's occupants were stored for use when they returned. Today, visitors hike through a half-mile trail and duck through a three-foot-high entrance to find a single room 100 feet across and 15 feet high where archaeological excavations have been "halted" in mid-course. Bureau volunteers and employees guide two scheduled tours monthly and usually several special tours for school classes and many other groups. About 4,500 visitors tour the site annually.

Grimes Point, a nearby petroglyph site, was established as an in situ interpretive area, with a self-guided tour, environmental study area, and protective enclosures. Teacher's study guides, brochures, interpretive and protective signing, and regular range patrols are all part of an integrated program of site management. Grimes Point was first visited by Native Americans perhaps 8,000 years ago or more. The Grimes Point Archaeological Area was nominated to the National Register of Historic Places in 1971.

The Grimes Point Archaeological Area, including Grimes Point Petroglyphs and Hidden Cave, Picnic Cave, Burnt Cave, and other archaeological sites, are extremely important Great Basin sites. In addition to containing information concerning subsistence economies from about 3,500 to 3,800 years ago, valuable climatological and ecological data is found in the well-preserved sediments of Hidden Cave. The area in general provides a unique opportunity to visually interpret the environmental and cultural landscape of the western Great Basin during Archaic times.

[Return to top of page](#)

## **New Mexico--Casamero Chacoan Outlier**

Casamero Pueblo was occupied by the Chacoan Anasazi between A.D. 975 and 1175. It is an excellent example of a Chacoan "outlier" containing many of the cultural and architectural traits found at Chaco Canyon. Chacoan architectural details found at Casamero include large-scale planning, core and veneer walls, large rooms, and Chacoan kivas with bench recesses, subfloor vaults, and ventilators. Casamero is L-shaped with approximately 20 ground-floor rooms; up to 29 rooms would have been present when considering the second-story portions. The great house also contains two kivas and an enclosed plaza. A great kiva, 21 m in diameter, lies 65 m south of the great house. Numerous domiciliary structures surround Casamero Pueblo.

From Chaco Canyon, a network of prehistoric roads radiated outward, linking the canyon to outlier communities. The roads permitted a redistribution system to operate between Chaco Canyon and the outliers located in diverse environmental settings. Goods, services, and labor were transported along the trail system. This interlinked regional settlement system permitted buffering of food shortages resulting from local fluctuations in food production.

It is believed Casamero was built to exploit the farmland along Casamero Draw. Foods grown and pottery produced at Casamero may have been traded to other outliers or to Chaco Canyon. Along with Chaco Cultural National Historical Park and six other outliers, Casamero is included in the World Heritage List, a compendium of world-class cultural and natural properties maintained by the United Nations Education, Scientific and Cultural Organization (UNESCO). Because of this designation, BLM has set aside 160 acres containing Casamero to ensure the preservation of cultural features.

The site was professionally excavated several times between 1966 and 1974. In 1976 and 1977, BLM completely stabilized Casamero to prevent deterioration of the walls. Once the stabilization was completed, interpretive signs were placed at the site describing the cultural history of the Chacoan Anasazi and the features present at Casamero. Casamero Pueblo is fenced to keep livestock and vehicles from disturbing the site, although pedestrian walk-throughs are provided. A parking lot was constructed along McKinley County Road 19 for visitor use. Other management actions have included withdrawing the area from mineral entry and off-road use, annual photo-monitoring, completion of an intensive archaeological survey of the property, and updated stabilization of standing architecture in 1986.

[\*Return to top of page\*](#)

## **Oregon--Macks Canyon Site**

The Macks Canyon site (35SH23) is a large prehistoric village site situated on an alluvial terrace overlooking the Deschutes River in north-central Oregon. The site as currently known covers an area 400 x 80 m and contains 51 depressions, surface lithics and exposed riverine shell deposits. Twenty-nine of the recorded depressions appear to be the remains of shallow circular semisubterranean houses essentially identical to those known along the Columbia River (23 miles north) and utilized by various Columbia Plateau tribes. The function of the 22 remaining depressions has not been determined. Limited excavations conducted in the late 1960s by David L. Cole of the Oregon State Museum of Anthropology indicated that the Macks Canyon site was the location of a winter village occupied by Sahaptin-speaking people. Although the main period of occupation appears to have occurred after 2,000 BP, the presence of large side-notched projectile points suggests that the site may have also been occupied much earlier, perhaps sometime after 7,000 BP. Food-grinding implements are common in the collection, and faunal remains are dominated by freshwater mussels, bighorn sheep, and deer. Fish remains are infrequently found.

The Macks Canyon site was placed on the National Register of Historic Places in 1975 based on its scientific value (i.e., extensive site area and relatively great time depth). Today, the houses are merely shallow depressions overgrown with sagebrush and grass. The site has been enclosed within a protective fence, and an interpretive sign provides the visitor with general site information.

Much of the Macks Canyon site remains intact due to both the protective fence and the small area of the initial excavations. Because no archaeological investigations have been conducted at the site since the late 1960s, opportunities for additional data recovery efforts are available. The information collected could address a myriad of questions related to riverine settlement/subsistence patterns, site function and formation processes, cultural chronology, social organization/interaction, and trade networks. Further investigations at the Macks Canyon site would contribute to the knowledge and understanding of the lower Deschutes River region and its place in the prehistory of the southern Columbia Plateau and northern Great Basin transition zone.

The lower Deschutes River region has received little attention for scientific study from federal agencies, researchers and/or universities. In fact, our present understanding of the region's prehistory is derived primarily from site salvage excavations conducted prior to construction of the Columbia River dams between the 1930s and 1960s. Although more archaeological research has been conducted in the last six years than in the previous 20, and partnership opportunities with federal land-managing agencies are on the rise, there is still a general lack of regional information. Many areas have not been surveyed for cultural resources, and the majority of sites that have been recorded need National Register of Historic Places evaluations. In addition, numerous sites with notable research potentials are situated in concealed locations susceptible to looting and in highly erosive and

high-use recreation areas, leaving them vulnerable to site disturbance and the loss of valuable information. Given the above information, it is safe to say that the lower Deschutes River region warrants prompt attention from the archaeological community.

[\*Return to top of page\*](#)

## **Mule Canyon Ruin**

Located in the center of scenic Cedar Mesa just off Bicentennial Highway U-95 in southeast Utah, this stabilized and interpreted unit pueblo typifies the mesa-top occupation that occurred from 800 to 900 years ago in this part of the Colorado Plateau. Excavated in 1973 by the University of Utah in preparation for highway construction, the public can visit a pueblo of 14 rooms, a ramada-covered kiva, a separate tower, and connecting tunnels.

Mule Canyon Ruin is important because of the information it provided concerning the dynamics of interaction between the Mesa Verde Anasazi to the east and the Kayenta Anasazi to the west. Opportunities for future research at the site focus on those important prehistoric interactions and the function of the towers. Volunteer opportunities include assisting with interpretation and maintenance.

Development at the site includes accessible walkways with benches, museum-quality interpretation in a kiosk, a remarkable wood-and-steel circular roof over the kiva, and restrooms. A marked nature trail leads to a viewpoint overlooking Mule Canyon to the north, with views of Cedar Mesa visible to the south.

[\*Return to top of page\*](#)

## **Wyoming--Medicine Lodge Archaeological Site**

The Medicine Lodge State Archaeological Site is the centerpiece and headquarters of the Medicine Lodge Habitat Area, a partnership area involving the Wyoming Game and Fish Department, Wyoming Department of Commerce, the Bureau of Land Management, and the Forest Service. The site is staffed year-round by Wyoming State Parks and Historic Sites staff.

The archaeological elements include a rock shelter excavated by George Frison of the University of Wyoming, which uncovered 60 cultural levels spanning at least 11,000 years of occupation, along with extensive rock art on the cliff face. Information relating to the excavations is incorporated into interpretive displays housed in one of the log cabins associated with ranching activities at the site. The displays include photographs of the excavations in progress, the features located, and casts of many of the excavated artifacts. The interpretive materials provide information about the lifestyles of the people using the area.

Interpretive signs enhance the rock art panels, which show affinities with both Plains and Great Basin localities and include pictographs, some of which are polychrome (red, black, green, and yellow), and petroglyphs, some with applied color. Chalking, rubbing, casting, and peeling of the art elements have made it difficult to determine the age of the rock art. Despite these impacts, however, there is very little vandalism of the art because of an on-site park supervisor.

The information recovered from excavating the rock shelter has been crucial to understanding the prehistory of the Bighorn Basin and the surrounding mountains. The Medicine Lodge archaeological site has a free campground, horse corrals, and fishing., and is open to the public from May 1 through November 4.

[\*Return to top of page\*](#)

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# **Society for American Archaeology and Bureau of Land Management's Golden Anniversary Partnership: America's Adventures in the Past**

The Bureau of Land Management (BLM) and the Society for American Archaeology (SAA) agree to enter into a partnership to celebrate the BLM's Golden Anniversary. The SAA will publicize the role that the BLM plays in administering the Federal Government's largest, most culturally diverse, and scientifically most varied and important body of prehistoric resources. The SAA will recognize, through various mechanisms available to the Society, some of the outstanding prehistoric properties managed by the BLM that the public can experience and enjoy.

The Society for American Archaeology shall:

**(1)** Select, in consultation with BLM staff, a representative sample of prehistoric properties of interest to members of the Society and the general public for special recognition. The criteria for the selection of sites will include:

a) integrity of the property or resource;

b) accessibility to visitors either through on-site visitation or public education and interpretation programs;

c) ability to protect the cultural property from inadvertent harm due to public visitation;

d) opportunity for members of the general public to experience an "adventure in the past."

**(2)** Encourage SAA members who have conducted archaeological investigations on the public land to assist BLM State, District and Resource Areas to interpret and educate the public about the unique archaeological resources managed by the BLM.

**(3)** Publicize in the SAA newsletter BLM's 50th anniversary and this Golden Anniversary Partnership between the BLM and the SAA, including a copy of the agreement and a short discussion of each of the prehistoric sites to be publicly featured; also, publicize the partnership on the SAA's Internet home page.

**(4)** Publicize in the SAA newsletter and on the home page any follow-up partnership activities involving members' participation.

**(5)** Publicize museum exhibits, publicly oriented books, and videos on archaeological subjects that relate to the public land states, pointing out the extent to which these products are based on materials and information from BLM lands.

**(6)** Recognize and publicize the Bureau of Land Management's excellent programs in public education about archaeology, emphasizing the ways these programs and educational materials they produce can enhance public understanding and appreciation of the featured BLM sites and of the many other archaeological resources cared for by the Bureau of Land Management.

The Bureau of Land Management shall:

**(1)** Continue to promote the basic theme of cultural resource stewardship and shared public responsibility in cultural resource protection.

**(2)** Distribute copies of the SAA newsletter and Internet home page address both within the Bureau and to other interested parties.

**(3)** Work with local SAA members, as feasible, to assist the Bureau in developing public education and interpretation programs.

(4) Seek other partnership-based funding to manage, protect, study, and interpret archaeological resources on the public lands.

Agreed to and signed this July 18, 1996.

*Robert Brook is with the Bureau of Land Management*

[To Top of the Page](#)

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LAST PAGE

TABLE OF CONTENTS

NEXT PAGE

---

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## Student Affairs

*Caryn M. Berg*

Happy New Year! The Student Affairs Committee will be gearing up for the annual meeting soon, and we need your help! To better serve the needs of the student members of the Society for American Archaeology, we need to know what will help you most. We are hoping that the campus representative can assist us in this task, and we are still looking for graduate and undergraduate students to serve in this position. A complete description of the requirements and responsibilities of the campus representative is available in the September *SAA Bulletin*. If you would like more information, please contact Caryn M. Berg, Chair, Student Affairs Committee, Department of Anthropology, Campus Box 233, University of Colorado, Boulder, CO 80309, email [bergcm@ucsub.colorado.edu](mailto:bergcm@ucsub.colorado.edu).

### Looking for Roomies?

Are you going to the 62nd Annual Meeting? Wondering how to make a hotel room a little more affordable? We want to help you find someone to share a room with! Just email your name, email address, phone number, and the days you will attend the meeting to [bergcm@ucsub.colorado.edu](mailto:bergcm@ucsub.colorado.edu). A list will be compiled and sent out to you by February 28th. Although you will be responsible for making your own roommate contacts and arrangements, we hope that the list will make your life a little easier.

*Caryn M. Berg is chair of the Student Affairs Committee and is at the University of Colorado at Boulder.*

## Presenting!--What an Experience

*Eden A. Welker*

Eventually, every archaeologist has an opportunity to present their research, whether it is at a conference of fellow professionals, an invited lecture, or in a public forum. Learning how to prepare and clearly present information is a necessary and valuable skill. With practice comes experience, and by asking those who have attended many a function, you can gain a lot of useful advice! Below are some tips for making any presentation a success.

### Preparing Your Paper

- Remember that a presentation is a short affair; papers are usually only 10 to 20 minutes long.
- Twenty-minute papers are about 13 pages long; ten-minute papers are about seven to eight pages long.
- One minute equals one slide.
- State your main points first and last.
- Make sure you have written your paper in advance. This will give you a chance to practice and make slides.
- Get feedback from colleagues to help you determine whether your topic is clearly and directly presented.
- Do not try to do too much. It is extremely discourteous to run over your allotted time! Time your talk and rehearse it.

## Visual Hints

Readable and simple slides enhance any presentation. There are many presentation software packages available which allow you to create text graphic slides on a computer monitor. Once you design your slides, most software programs will allow you to create a computer file that a local graphics service bureau can use to create your slide. If this option is not available to you, a 35-mm camera, some slide film, a tripod, and a darkened computer room can yield decent slides. A good starting point to determine shutter speed and aperture is to turn your entire computer screen background into a plain 50% grayscale image (in Windows 3.1, use the desktop icon in the control panel). Once the background is set, take a light-meter reading and adjust aperture and shutter speed accordingly. You can also try setting your camera aperture to 5.6 and your shutter speed to one-eighth second for 100 ASA film. Monitors do vary, and this information only provides good starting points. Try to find an experienced photographer in your department to help if you choose this option for producing slides. In any case, do not wait until the last minute to produce your slides in case something does go wrong!

- Never show complicated, hard-to-read graphics!
- Although visuals are great, don't try to show too many.

## Speaking

As with any public speaking, speak slowly enough to be understood and loudly enough to be heard. There are many presentation styles, and you need to find and perfect yours. You can read a paper but make sure to address your audience, make eye contact, and maintain natural pauses and inflections. Other presenters work from notes or slides or any combination of the above. Practicing your talk will always make for a smoother and more refined presentation. Nothing beats getting constructive criticism beforehand from your friends and colleagues.

- Speak into the microphone.
- Make sure you are "talking" when you present your paper. If you need something in writing to get you through the talk, use an outline or paragraphs written for an informal verbal style.
- Have good eye contact, inflection, and enthusiasm--both your personality and your research should come across!

## At the Conference

Do not forget that most conferences provide laser pointers, microphones, water, slide and overhead projectors, and timers. In fact, working as a volunteer at the SAA annual meeting, can give you experience working with the equipment for other presenters before you present your own paper. It may ease your fear if you understand how everything works and you get to watch other presenters before you go on! (There are other perks to volunteering, too. Call or email Rick Peterson at SAA headquarters for information on volunteering.)

For further information on presenting papers, read Karen Olsen Bruhn's 1984 article, Giving Papers, in *American Antiquity* 49:151-161.

Special thanks to the anthropology faculty at the University of Colorado at Boulder who shared their ideas about what goes into a good presentation!

*Eden A. Welker is the vice-chair of the Student Affairs Committee and is a Ph.D. candidate at the University of Colorado at Boulder.*

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[LAST PAGE](#)

[TABLE OF CONTENTS](#)

[NEXT PAGE](#)

---



## NEWS AND NOTES

**The University of Pennsylvania Museum of Archaeology and Anthropology has begun the first stage** of a massive and critically needed conservation project on a 4,300-year-old Egyptian tomb chapel, an important example of monumental tomb architecture from the museum's collection. The chapel, from the ancient Egyptian cemetery of Saqqara, belonged to Kapure (Ka-poo-Ray), a high-ranking treasury official and administrator. When conserved, one wall of the chapel--30 stone blocks and a monolithic five-ton false door--will become the centerpiece of a traveling exhibition of 134 ancient Egyptian artifacts from the museum. In December the wall was disassembled from the museum's Lower Egyptian Gallery and moved to the Connecticut lab of Conservation Technical Associates for conservation. In late summer 1997 the conserved chapel wall will be transported to the Dallas Museum of Art in Texas and installed as part of the traveling exhibition. After opening in Dallas, the exhibition will travel to Denver; Seattle; Omaha, Nebr.; Toledo, Ohio; and Birmingham, Ala. Long-range plans will see the entire chapel, which has not been opened to the public since 1981, fully conserved, protected against future environmental damage, and reopened to public view in the museum's Lower Egyptian Gallery. For more information, call (215) 898-4000.

**The series *Cerámica de Cultura Maya***, edited by Carol A. Gifford and Muriel Kirkpatrick, has ended with the publication of No. 17 and No. 18. These final two issues contain a subject index to the series (No. 17), with short articles or comments by R. E. W. Adams, Laura Kosakowsky, Kirkpatrick, and Gifford, and a 200-page compilation of Maya ceramic nomenclature (No. 18). All issues may be ordered from Muriel Kirkpatrick, Laboratory of Anthropology, Temple University, Philadelphia, PA 19122. With the termination of *Cerámica*, the James C. Gifford Ceramic Typology Archive has been deposited in the Arizona State Museum Archives at the University of Arizona. It contains early materials dealing with pottery classification in the American Southwest and correspondence, preliminary papers with notations, and published articles by Gifford and other archaeologists concerning the conceptual development of the type-variety-mode approach to the study of prehistoric ceramics and its initial application to Mesoamerican pottery. The museum welcomes other collections of similar ceramic typological interest that would form a coherent assemblage of this aspect of archaeological history for use by researchers. Archivist is Alan Ferg, Arizona State Museum, University of Arizona, Tucson, AZ 85721-0026.

**Robert Kelly (University of Louisville) took over as secretary of the Archaeology Division of the American Anthropological Association** during the November annual meeting. The division's column in the monthly *Anthropology Newsletter* will be mainly devoted to submitted pieces that describe the role that archaeology plays in commenting on or helping to resolve modern issues and dilemmas. The intention is to show that archaeology is not just about the past and to provide case studies to that effect. Look for pieces on indigenous peoples' land claims, warfare, forensic archaeology, and environmental destruction. Those interested in

submitting pieces of not more than 2,000 words can contact Kelly at [rlkell01@ulkyvm.louisville.edu](mailto:rlkell01@ulkyvm.louisville.edu), (502) 852-6864, fax (502) 852-4560.

**The School of Archaeological Studies, University of Leicester, offers a Master's degree** by "distance learning" in Archaeology and Heritage--Analysis, Interpretation and Management. The degree comprises four modules and a dissertation. The modules are (1) Planning and Management of Archaeological Projects, (2) Landscape Archaeology, (3) The Archaeology of Standing Buildings, and (4) Interpretation and Presentation of the Archaeological Heritage. The degree will be launched in September 1997, subject to validation, when modules 1 and 2 will be available. In September 1998, modules 3 and 4 will be ready. Each module will be accompanied by appropriate support material in printed form and possibly will be available on the Internet. Details of the School of Archaeological Studies at Leicester University can be found on the Internet at <http://www.le.ac.uk/depts/ar/ar.html>. If you would like further details when they are available, write to A. D. McWhirr, School of Archaeological Studies, University of Leicester, Leicester, LE1 7RH, England, or email [adm3@le.ac.uk](mailto:adm3@le.ac.uk)

***A Turtle Atlas to Facilitate Archaeological Identifications*, by Kristin D. Sobolik and D. Gentry Steele, is the first atlas ever published** illustrating identification of archaeological turtle remains. The atlas is complete for all genera of North American turtles and discusses how to identify carapace and plastron bone in addition to cranial and postcranial elements. The atlas includes 70 figures of drawn and photographed turtles illustrating unique features that allow for identification. Drawings of the turtles are presented in "exploded" view, showing each separate bone of the shell. In addition, the atlas contains photographs of turtle cranial and postcranial elements as well as turtles identified from archaeological contexts. The atlas provides habitat descriptions, taxonomic classifications, and geographic range maps. Turtles are one of the most frequently misidentified bone from faunal assemblages, making the atlas a must for zooarchaeologists and paleontologists interested in the identification of turtles in North America. To obtain a copy (\$19.95), contact The Mammoth Site of Hot Springs, P.O. Box 692, Hot Springs, SD 57747-0692, (605) 745-6017, fax (605) 745-3038, email [mammoth@mammothsite.com](mailto:mammoth@mammothsite.com).

**The Brooklyn Museum has created a guide to the Culin Archival Collection** that significantly increases access to its archival holdings and other repositories containing the records of Stewart Culin, the museum's first curator of ethnology (1903-1929). During his many decades of collecting and research in the United States, Eastern Europe, Asia, and other areas, Culin assembled extensive documentary textual and visual materials. Among them is a series of field journals that he kept of his travels in the American Southwest. These journals describe in unusual detail his encounters with a broad range of Native Americans and include information on the cost of objects purchased, as well as evocative descriptions of the landscape. The Culin Archival Collection is a critical resource for the study of cultural anthropology, art and cultural history, costumes and textiles, and folklore. The guide, which was made possible through a grant from the National Endowment for the Humanities, Division of Preservation and Access, is available through the museum library. For more information, contact the Brooklyn Museum at 200 Eastern Parkway, Brooklyn, NY 11238-6052, (718) 638-5000 ext. 330, or fax (718) 638-3731.

**Fred Wendorf, Henderson-Morrison Professor of Prehistory, Southern Methodist University, became the 25th recipient of the Lucy Wharton Drexel Medal for archaeological achievement** presented at the University of Pennsylvania Museum of Archaeology and Anthropology on October 2, 1996. One of the most distinguished archaeologists in this country, Wendorf is admired for his wide-ranging research and publications. A member of the National Academy of Sciences, he is currently president of the Society of Professional Archaeologists. His more than 40 years of fieldwork on early agriculture and environmental change have taken him to Native American sites of the Southwest, the length of the Nile Valley of Egypt and the Sudan, and across the eastern Sahara of North Africa. He is currently directing a project excavating several Middle Paleolithic, Neolithic, and Early Bronze Age sites in the central Sinai. Established by the University of Pennsylvania Museum in 1889 to honor achievement in excavation or publication of archaeological work during the five years preceding the date of the award, the Lucy Wharton Drexel Medal is given by the museum director in consultation with past medal recipients and archaeological curators of the museum. Distinguished past recipients have included W. M. Flinders Petrie in 1903, for his work in Egypt; Sir Leonard Woolley in 1955, for his work

in the Near East; Gordon Randolph Willey in 1981, for his work on the ancient Maya; and, more recently, Machteld J. Mellink in 1994, for her work in Anatolia.

**Earthwatch, the organization that directly engages the public in conservation projects worldwide, announces over \$400,000 in archaeological field research grants** in 1997. It has approved grants to provide crucial support to 24 noted archaeologists working in 17 countries. Earthwatch has a base of over 30,000 members worldwide. Membership is open to the general public, enabling the funding of research through members who share in the costs of the sponsored expeditions and participate in them. These members provide support by making tax-deductible contributions and by staffing one- to three-week research teams. Earthwatch grants average \$18,000 per project. For information on contributing to Earthwatch or joining an expedition, contact Earthwatch at (800) 776-0188, on the WWW at <http://www.earthwatch.org>, or email [info@earthwatch.org](mailto:info@earthwatch.org).

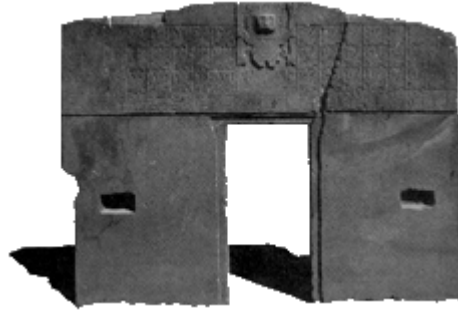
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LAST PAGE

TABLE OF CONTENTS

NEXT PAGE

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## POSITIONS OPEN

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**Archaeological and Historical Consultants seeks Field Directors** to supervise and coordinate activities of field crews engaged in archaeological survey or excavation. Duties primarily involve Phase I and II surveys for gas pipeline right-of-way in Ohio and Pennsylvania. The qualified applicant will have (1) a Master's degree preferably in Archaeology, Anthropology, or a closely related field, (2) two to four years related archaeological field experience and/or training, or an equivalent combination of education and experience, and (3) demonstrated capability to manage archaeological fieldwork. Applicants must be certified (or qualified) to work as a Field Director in Ohio. Archaeological and Historical Consultants is situated in Centre Hall, Pennsylvania--a small community located near State College and the Pennsylvania State University. A competitive benefits package is offered. Opening date is March 1997, and position will be open until filled. Send résumé, letter of application, and references to David Rue, Program Manager, Archaeological and Historical Consultants, Inc., P.O. Box 482, Centre Hall, PA 16828.

**Archaeological and Historical Consultants seeks a Principal Investigator** to develop and supervise implementation of field strategies for Cultural Resource Management projects, coordinate artifact and data analysis, prepare reports and proposals, and maintain client/agency coordination. The qualified applicant will have a Master's degree (Ph.D. preferred) with an archaeological focus, at least one year of experience in the supervision of archaeological fieldwork, a demonstrated ability to produce quality reports in a timely fashion, and knowledge of eastern or midwestern U.S. prehistory and/or history. Archaeological and Historical Consultants is situated in Centre Hall, Pennsylvania--a small community located near State College and the Pennsylvania State University. A competitive benefits package is offered. Opening date is March 1997, and position will be open until filled. Send résumé, letter of application, and references to David Rue, Program Manager, Archaeological and Historical Consultants, Inc., P.O. Box 482, Centre Hall, PA 16828.

**Ecoscience's Archaeology Division seeks a dynamic individual to direct our CRM program.** Ecoscience conducts all phases of CRM projects throughout the Middle Atlantic. We are looking for an individual with a business concentration within archaeology. Candidates must have a M.A., possess strong organizational skills, demonstrate knowledge of CRM requirements, the ability to actively solicit projects, manage project records, and direct archaeological projects to completion. Submit vitae, examples of publications or research reports, and the names and addresses of three references to Archaeology Division, Ecoscience, Inc., RR 4 Box 4294, Moscow, PA 18444, [ecoscnc@scranton.com](mailto:ecoscnc@scranton.com).

**University of Wisconsin-Milwaukee, Department of Anthropology**, pending budgetary approval, seeks applicants for Associate Scientist (Contract Archaeologist and Associate Director Archaeological Research Laboratory) position beginning March 1, 1997. This position includes obtaining and administering grants and



contracts, teaching, student advising and professional service. Ph.D. in Eastern U.S. archaeology required. Submit letter of interest, vita, and names of three references by January 25, 1997, to Trudy Turner, Department of Anthropology, University of Wisconsin-Milwaukee, Milwaukee, WI 53201 (see <http://www.uwm.edu/Dept/Anthropology/>). University of Wisconsin is an equal opportunity/affirmative action employer; minorities and women are encouraged to apply. The names of those nominees and applicants who have not requested that their identity be withheld and the names of all finalists will be released upon request.

**Assistant Professor of Archaeology.** Boston University announces a new tenure-track position in Near Eastern Prehistory at the level of Assistant Professor, effective September 1, 1997. An active research program including fieldwork, preferably involving students at all levels, and Ph.D. are required. The ideal candidate will be able to teach the archaeology of the Near East from the Paleolithic through Neolithic at the undergraduate and graduate levels. Candidates with expertise in a scientific specialty (e.g., zooarchaeology, materials science, human osteology) are strongly encouraged to apply. Applications/nominations and three letters of recommendation are due by January 15, 1997 to Julie Hansen, Chair, Department of Archaeology, 675 Commonwealth Ave., Boston, MA 02215. Boston University is an Equal Opportunity/Affirmative Action Employer.

**Arkansas Archeological Survey, a unit of the University of Arkansas system, invites applications for Research Station Archeologist** at Arkansas State University Research Station in Jonesboro, Arkansas. This is a permanent, 12-month appointment. Duties include: research; public service, including working with the general public, amateurs, Native Americans, and state and federal agencies; teaching two anthropology courses a year or equivalent service at Arkansas State University; archeological collection and information management. A Ph.D. is required and research and field experience in Mississippi River valley or adjacent areas is preferred. The University of Arkansas is an equal opportunity/affirmative action institution. Send letter of application, vita, and names of three references to Thomas Green, AAS, P.O. Box 1249, Fayetteville, AR 72702-1249. For more information, see <http://www.uark.edu/campus-resources/archinfo>.

**Curator, Meadowcroft Rockshelter.** Meadowcroft Museum of Rural Life seeks museum professional with experience in archaeology and public programming to serve as curator of one of North America's oldest archaeological sites. The curator will monitor site preservation, design and implement educational programs, and assist with planning for a new interpretive center. Located 35 miles southwest of Pittsburgh, the museum interprets the history of life on the land in western Pennsylvania over 14,000 years. Salary: \$22,000. Send resume and cover letter by January 31, 1997, to Daniel Freas, Meadowcroft Museum of Rural Life, 401 Meadowcroft Rd., Avella, PA 15312.

**The Department of Anthropology, University of California, San Diego seeks an anthropological archaeologist** with broad theoretical interests in the evolution of complex societies. Geographical area is open but preference will be given to candidates who work in Mesoamerica, South America, and Africa. Applicants should have a strong orientation toward fieldwork, fund raising for research, and publication. Funding is currently at the Assistant Professor level (tenure track). Salary will be commensurate with experience and based on UC pay scales. Starting date is July 1, 1997. Ph.D. must be completed by September 1, 1997. To ensure full consideration, please send a letter of interest, curriculum vitae, and the names of three referees to Thomas Levy, Search Chair, Department of Anthropology, University of California, San Diego, 9500 Gilman Dr., La Jolla, CA 92093-0532 by March 10, 1997. UCSD is an affirmative action, equal opportunity employer.

**The University of Illinois has several Prehistoric and Historic Archaeologist positions available.** The Illinois Transportation Archaeological Research Program (ITARP), Department of Anthropology, University of Illinois, is seeking to fill several positions with senior researchers to direct large Phase I-III projects in Illinois. ITARP is the result of a 39-year-long cooperative arrangement between the Illinois Department of Transportation and the University of Illinois to do research in the area of archaeology and history. It has two dozen full-time professional career employees and focuses its research on the history and prehistory of Illinois. Employees are staff members of the university and receive full benefits and rights. Responsibilities: The individuals will oversee the field completion of cultural resource surveys, testing, and excavations on major projects in Illinois. These individuals will be responsible for managing one or more field and lab crews, administration, analysis, and report preparation. At the end of the project these individuals will produce a professional report on the results of the project, to be submitted to the Illinois Department of Transportation,

which will meet the standards set forth by the Illinois Historic Preservation Agency. Such reports are generally published in one of the several professional archaeological publication series the program produces.

Qualifications: Graduate degree in Anthropology/Archaeology preferred (or equivalent field experience) or an M.A. in history with a specialty in archaeology. The individual must have a strong background in prehistory and/or historical archaeology of the Eastern Woodlands. Three to five years of field survey, excavation, analysis, and report preparation experience preferred. The ability to use a total station and GPS equipment is a definite plus. The individual must have a demonstrated record of report completion. This is an opportunity to gain valuable experience in large-scale field and analysis projects and to follow the process through to publication. We prefer individuals who are interested in a long-term position with the program and in developing research interests in the general Midwestern region. Applications will be accepted until the positions are filled. Please send cover letter and résumés to Janice Pankey, Program Clerk, ITARP-Department of Anthropology, 103 Horticultural Field Laboratory, 1707 S. Orchard, University of Illinois at Champaign-Urbana, Urbana, IL 61801, (217) 244-4244.

---

[LAST PAGE](#)

[TABLE OF CONTENTS](#)

[NEXT PAGE](#)

---

# CALENDAR



*February 1, 1997  
is 1,866,196 days since  
the Maya zero date*

March 7-8, 1997

SOUTHEAST ASIAN HERITAGE: PRESERVATION, CONSERVATION, & MANAGEMENT will be hosted at the Center for Southeast Asian Studies and the East-West Center, the University of Hawai'i. We welcome participants with backgrounds in archaeology, art history, historic preservation, urban planning, and tourism to join this multidisciplinary international conference. Individuals who wish to attend the conference should direct their inquiries to conference coordinator Lowell Angell, Historic Preservation Program, American Studies Department, University of Hawai'i, Moore Hall 324, Honolulu, HI 96822, email [angell@hawaii.edu](mailto:angell@hawaii.edu), fax (808) 956-4733.

March 15, 1997

20TH ANNUAL MEETING OF THE MIDWESTERN CONFERENCE ON MESOAMERICAN ARCHAEOLOGY AND ETHNOHISTORY will be held at the University of Michigan, Ann Arbor. This informal conference emphasizes recent fieldwork and analysis. For further information, please contact Jeffrey R. Parsons, Museum of Anthropology, University of Michigan, Ann Arbor, MI 48109, email [jpar@umich.edu](mailto:jpar@umich.edu)

March 21-22, 1997

THE 14TH ANNUAL VISITING SCHOLAR'S CONFERENCE, sponsored by the Center for Archaeological Investigations at Southern Illinois University, will be held in Carbondale, Ill. The 1997 conference, entitled Hierarchies in Action, will examine the evolution of social hierarchies by asking the question "Who benefits (and how) from the operation of the hierarchy?" Contributors are asked to specifically address one of the following questions: In the hierarchy that you study: (1) What are the costs and benefits that accrue to those of high status? (2) What are the costs and benefits that accrue to those of low status? (3) In general, to what extent may it be said that the hierarchy is beneficial for all whom it encompasses? For further information, contact Michael Diehl, Center for Archaeological Investigations, Southern Illinois University, Carbondale, IL 62901, (618) 453-5031/453-5057, email [mdiehl@siu.edu](mailto:mdiehl@siu.edu)

March 22-23, 1997

SYMPOSIUM ON OHIO VALLEY URBAN AND HISTORIC ARCHAEOLOGY will be held at the Executive Inn, Paducah, Ky. For more information, contact Kit W. Wesler, Wickliffe Mounds Research Center, P.O. Box 155, Wickliffe, KY 42087, (502) 335-3681, email [kwesler@msumusik.mursuky.edu](mailto:kwesler@msumusik.mursuky.edu)

March 26-29, 1997

ANNOUNCING THE 20TH ANNUAL MEETING OF THE SOCIETY OF ETHNOBIOLOGY, which will be held at the University of Georgia, Athens. For information, contact LaBau Bryan, Department of Anthropology, University of Georgia, Athens, GA 30602-1619, (719) 542-1433.

April 1-6, 1997

THE FORTHCOMING CONGRESO INTERNACIONAL DE ARTE RUPESTRE will be held in Cochabamba, Bolivia. For more information, contact Matthias Strecker, Secretario General SIARB, Casilla de Correo 3091, La Paz, Bolivia, fax (+59 1) 271-1809.



April 2-5, 1997

THE 66TH ANNUAL MEETING OF THE AMERICAN ASSOCIATION OF PHYSICAL ANTHROPOLOGISTS will be held at the Adam's Mark Hotel, downtown St. Louis, Mo. For program information, contact Clark Larsen, Research Laboratories of Anthropology, Alumni Building, CB#3120, University of North Carolina, Chapel Hill, NC 27599-3120, (919) 962-3844, email [cslarsen@email.unc.edu](mailto:cslarsen@email.unc.edu). For local arrangements, contact Charles Hildebolt, Department of Radiology, 510 S. Kingshighway Blvd., Washington University School of Medicine, St. Louis, MO 63110, (314) 362-8410, email [hildebolt@mirlink.wustl.edu](mailto:hildebolt@mirlink.wustl.edu).

April 2-6, 1997

THE 62ND ANNUAL MEETING OF THE SOCIETY FOR AMERICAN ARCHAEOLOGY will be held at the Opryland Hotel, Nashville, Tenn.

April 2-6, 1997

SOCIETY FOR ARCHAEOLOGICAL SCIENCES ANNUAL BUSINESS MEETING will be held in conjunction with the SAA 63rd Annual Meeting, at the Opryland Hotel, Nashville, Tenn. Date, time, and place will be announced at the SAA Registration area at the meeting.

April 16-18, 1997

THE 1ST INTERNATIONAL SPACE SYNTAX SYMPOSIUM will be held at the University College London. The symposium will bring together researchers and designers currently using space syntax techniques to discuss theoretical and methodological issues. For information, contact Mark David Major, Symposium Organizer, Space Syntax Laboratory, Bartlett School of Graduate Studies, 1-19 Torrington Place, University College London, Gower St., London WC1E 6BT, email [mark.major@ucl.ac.uk](mailto:mark.major@ucl.ac.uk), or visit the web site at <http://doric.bar.ucl.ac.uk/web/slab/slabhome.html>.

April 16-19, 1997

THE 10TH NAVAJO STUDIES CONFERENCE will be held at the University of New Mexico. For more information, contact Lucille Stilwell, Director, American Indian Student Services, Mesa Vista Hall, Room 119, University of New Mexico, Albuquerque, NM 87131, email [jwinter@unm.edu](mailto:jwinter@unm.edu).

April 20-24, 1997

ANATOLIAN PREHISTORY: ON THE CROSSROADS OF EURASIA AND AFRICA, an international symposium, will be held at Liège University, Belgium. Abstracts should be sent to Marcel Otte, Université de Liège, Service de Préhistoria, 7 place du XX Août, Bât A1, 4000 Liège, Belgium.

May 7-11, 1997

30TH ANNUAL CANADIAN ARCHAEOLOGICAL ASSOCIATION CONFERENCE will be held at Saskatoon, Saskatchewan, at the Delta Bessborough Hotel. Proposed sessions include public archaeology, women in archaeology, Canadian archaeologists abroad, native people and archaeology, forestry industry and archaeological resource management, pottery technology in Northern Plains and Boreal Forest, contact archaeology, historical archaeology, development of archaeological interpretive centers, and developments in Saskatchewan archaeology. For information on the conference and the proposed field trip, please contact Margaret Kennedy, Conference Coordinator, Department of Anthropology/Archaeology, University of Saskatchewan, Saskatoon, Saskatchewan, S7N 5A5, Canada, (306) 966-4182, email [kennedym@duke.usask.ca](mailto:kennedym@duke.usask.ca).

May 27-30, 1998

THE 7TH INTERNATIONAL CONFERENCE ON GROUND-PENETRATING RADAR, GPR '98, will be hosted by the University of Kansas in Lawrence. For more information, contact Richard Plumb, Associate Professor, Electrical Engineering and Computer Science, Radar Systems and Remote Sensing Laboratory, University of Kansas, 2291 Irving Hill Rd., Lawrence, KS 66045-2969, (913) 864-7735, fax (913) 864-7789, email [gpr98@rsl.ukans.edu](mailto:gpr98@rsl.ukans.edu), web <http://www.rsl.ukans.edu/~gpr98>.

June 4-7, 1997

SYMPOSIUM ON BISON ECOLOGY AND MANAGEMENT IN NORTH AMERICA will be held at the Holiday Inn in Bozeman, Mont., to provide a forum on utilizing various disciplines to understand and manage bison in North America. Sessions explore how disease, genetics, ecology, management, prehistory, and tribal concerns affect bison. For information, contact Bison Symposium, Montana State University, 235 Linfield Hall, Bozeman, MT 59717, (406) 994-3414.

June 7-8, 1997

THE 18TH MID-SOUTH ARCHAEOLOGICAL CONFERENCE will meet at the Arkansas State University Museum in Jonesboro, Ark. Topics are "Native American Reaction to Archaeology," "History of Archaeology," and "Current Research in the Mid-South." For more information, please contact Dan or Phyllis Morse, email [dmorse@osage.astate.edu](mailto:dmorse@osage.astate.edu).

July 11-13, 1997

NATURAL CATASTROPHES DURING BRONZE AGE CIVILIZATIONS: ARCHAEOLOGICAL, GEOLOGICAL, ASTRONOMICAL AND CULTURAL PERSPECTIVES will be held at Fitzwilliam College, Cambridge University, England. The conference, organized by the Society for Interdisciplinary Studies, will bring together historians, archaeologists, climatologists, and astronomers to discuss whether the astronomical evidence of neo-catastrophist astronomers can be substantiated by the archaeological and climatological record. For information, contact Benny J. Peiser, Liverpool John Moores University, School of Human Sciences, Byrom St., Liverpool L3 3AF, England, (0151) 231-2490, fax (0151) 298-1261, web <http://www.knowledge.co.uk/xxx/cat/sis/>.

June 16-20, 1997

THE IX CONGRESO NACIONAL DE ARQUEOLOGIA URUGUAYA, sponsored by the Uruguayan Archaeological Society, will be held at Colonia del Sacramento (declared a world heritage site by UNESCO). The deadline for abstracts is April 15, 1997. For additional information, contact Comision Organizadora, Gral. Flores 174, Colonia, Uruguay, phone or fax (598+522) 3768, email [spintos@adinet.com.uy](mailto:spintos@adinet.com.uy).

July 21-25, 1997

THE 17TH INTERNATIONAL CONGRESS OF THE INTERNATIONAL ASSOCIATION OF CARIBBEAN ARCHAEOLOGISTS will be held at the Bahamian Field Station, San Salvador Island, Bahamas. For more

information, contact John Winter, Program Chair, Molloy College, 1000 Hempstead Ave., Rockville Centre, NY 11570, (516) 678-5000, fax (516) 678-7295, email [winjo01@molloy.edu](mailto:winjo01@molloy.edu).

July 28-August 1, 1997

A WAR WITHOUT END: CROSSING THE THRESHOLD OF THE MILLENNIUM, a conference sponsored by the College of Anthropology of Yucatan, Mexico, will commemorate the 150-year anniversary of the start of the Guerra de Castas de Yucatan. Symposia and paper topics related to the theme of the conference are invited. For more information, contact Luis A. Varguez Pasos, Calle 16 No. 439, Col. Petcanche, C.P. 97145, Merida, Yucatan, Mexico, fax (91 99) 28-5115, email [vpasos@tunku.uady.mx](mailto:vpasos@tunku.uady.mx).

August 5-9, 1997

SOUTH SEAS SYMPOSIUM: EASTER ISLAND IN PACIFIC CONTEXT, a conference on Easter Island and the Pacific region, will be cosponsored by the Easter Island Foundation and the Maxwell Museum of Anthropology, University of New Mexico. Papers on Polynesian social organization, prehistoric adaptation, linguistics, paleoenvironments, and the archaeology of stone architecture are especially encouraged. For information, contact Christopher Stevenson, ASC Group, 4620 Indianola Ave., Columbus, OH 43214, (614) 268-2514, fax (614) 268-7881, email [obsidlab@aol.com](mailto:obsidlab@aol.com).

September 18-21, 1997

THE 3RD BIENNIAL ROCKY MOUNTAIN ANTHROPOLOGICAL CONFERENCE will be held in Bozeman, Montana. The organizers encourage participation of researchers from all areas of anthropological study pertaining to the Rocky Mountains, including fields addressing issues of past environmental conditions. Interested individuals are encouraged to organize forums as a possible alternative to symposia to enable thoughtful, focused, and more open discussion of carefully delineated themes. Deadline for completed forum/symposium packages is March 15, 1997, and for individual contributed paper abstracts, March 31, 1997. For additional information, please contact Ken Cannon, National Park Service, Midwest Archeological Center, Federal Bldg., Room 474, 100 Centennial Mall North, Lincoln, NE 68508-3873, (402) 437-5392 ext. 139, fax (402) 437-5098, email [ken\\_cannon@nps.gov](mailto:ken_cannon@nps.gov); or Jack Fisher, Department of Sociology, Montana State University, Bozeman, MT 59717-0238, (406) 994-5250, fax (406) 994-6879, email [isijf@msu.oscs.montana.edu](mailto:isijf@msu.oscs.montana.edu); or visit the conference web site at <http://www.montana.edu/wwwrmac/>.

September 22-26, 1997

THE XII CONGRESO NACIONAL DE ARQUEOLOGIA ARGENTINA will be held at the Facultad de Ciencias Naturales, Universidad de La Plata, Paseo del Bosque S/N, 1900 La Plata, Buenos Aires, Argentina. The deadline for abstracts is April 15, 1997. For more information, call (+54 21) 25-6134, fax (+54 21) 25-7527, or email [museo@isis.unlp.edu.ar](mailto:museo@isis.unlp.edu.ar).

November 13-16, 1997

THE 30TH ANNUAL CHACMOOL CONFERENCE will be held on the theme, "The Entangled Past: Integrating History and Archaeology." Suggested session and paper topics include colonialism and culture contact, oral history, maps, museums and the presentation of history, photography as a historical resource, perceptions of time, multivocality in history, and critical analysis of historical sources. Abstracts are due March 15, 1997. For more information, contact Nancy Saxberg, Chair, 1997 Conference Committee, Department of Archaeology, University of Calgary, 2500 University Dr. NW, Calgary, AB T2N1N4, Canada, (403) 220-5227, fax (403) 282-9567, email [13042@ucdasvm1.admin.ucalgary.ca](mailto:13042@ucdasvm1.admin.ucalgary.ca).

[LAST PAGE](#)

[TABLE OF CONTENTS](#)

---