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like to tell my new archaeology students that now is a great time to be considering a career in our discipline. We have learned a tremendous amount about the past and are now poised to contribute in many ways that could not have been imagined just a short time ago. The September 2015 issue of the SAA Archaeological Record (tSAR) offers a stimulating group of articles that challenge us to think creatively about our future and to become better and more ethically engaged scholars and teachers.

I am proud to present a version of Robert Kelly’s 2013 Patty Jo Watson Distinguished Lecture to the American Anthropological Association. In this piece, Kelly offers new directions for archaeological contributions at a time when funding for academic research is becoming increasingly sparse while our publics demand relevance. Without giving anything away, I can also tell you that Kelly revives a little magic from our archaeological past. I hope you enjoy the article!

Michael Smith asks “How can archaeologists make better arguments?” I can honestly say that this article will soon become required reading for my graduate students and it should be studied by all of us interested in advancing the discipline (and our careers). Kelly and Smith make it clear that modern archaeological research requires collaboration between a diverse set of scholars. This is well reflected in Jessica Herlich and Shanti Morell-Hart’s contribution concerning new methodological approaches and collaborations in paleoethnobotany. With advances in computing technology, we are exploring exciting new strategies for field and laboratory data collection. E.B. Banning and Philip Hitching make a strong case for use of iPads in archaeological survey. In a challenging political and financial environment for higher education, our disciplinary future remains ever dependent on teaching archaeology to new generations and the general public. In order to advance teaching in archaeology, the SAA Board recently approved the Teaching Archaeology Interest Group (TAIG). Katie Kirakosian and Heidi Bauer-Clapp provide an introduction to TAIG and include a preview of TAIG events scheduled for the 2016 SAA Annual Meeting in Orlando. Finally, George Nicholas and colleagues introduce the Grace Islet case in British Columbia. This is an important article in that it not only raises critical ethical issues but also offers creative new approaches to resolution of heritage challenges.

We are introducing a new column from the Native American Scholarship Committee in which past recipients of scholarships update the society on their activities and contributions. Our first contributor is Angela Neller of the Wanapum Heritage Center in Beverly, Washington.

There is much more to explore in this issue, including thoughts from SAA President, Diane Gifford-Gonzalez, an introduction to Orlando, Florida, and our Volunteer Profile highlighting former tSAR Editor and Annual Meeting Program Chair 2015, Jane Eva Baxter.
The early summer has been very active for our D.C.-based staff, expert colleagues, and me. Unlike its predecessor, this Congress is actively moving forward legislation affecting research funding, heritage protection, and other matters of concern to SAA membership. Because of this, I have organized weekly briefings from SAA Government Affairs Manager David Lindsay for me and Government Affairs Committee Chair Donn Grenda on what is emerging on Capitol Hill, as well as in federal agencies, tribes, and states.

Activities on Behalf of Research Funding
Motivated by bills in the House of Representatives that selectively—and deeply—cut National Science Foundation (NSF) SBE FY2016 funding, I headed an SAA delegation from June 22 to 24 that visited 14 senatorial offices, plus majority and minority staffers of the committee reauthorizing NSF. Our delegation included former SAA President Meg Conkey, the American Museum of Natural History’s David Hurst Thomas, Government Affairs Manager David Lindsay, and Executive Director Tobi Brimsek. Senators were from both parties, and most serve on the two senate committees overseeing the NSF: Appropriations and Commerce, Science, and Transportation (CST). Days before our visit, the Senate Appropriations committee proposed funding NSF and other research institutes without selective cuts, but CST was about to begin markup of its own reauthorization bill in July.

SAA argued that selective cuts deviate from longstanding congressional policy on funding national research institutes, which lets scientists decide how to allocate research resources; that scientific research is now so interdisciplinary that cuts to social science funding could actually harm the “hard” STEM sciences; and that such cuts set in motion a dysfunctional scientific funding policy harmful to our long-term national interests. Senate staffers repeatedly drew a distinction between directions taken by the House and those taken by the Senate. Democrats promised to seek an optimal outcome for NSF reauthorization, while Republicans stressed that they would work toward a bipartisan bill.


Archaeology in Federal Agencies
While in Washington, and in response to federal archaeologists’ repeatedly voiced concerns about the mismatch between Office of Personnel Management (OPM) hiring standards for archaeologists and those of federal agencies, David Lindsay and I met with Michael Kaczor (Heritage Program Leader and Federal Preservation Officer, USDA-FS), whose agency has recently revised their guidelines in these areas, to explore how SAA could encourage a mandated, but decades-delayed, harmonization. A draft letter to the Office of Personnel Management and other federal agencies was approved by SAA’s Government Affairs Committee and has been forwarded for informal comment among concerned agencies.

Illinois State Museum Testimony
On July 9, SAA submitted written testimony to the Illinois Commission on Government Forecasting and Accountability, opposing any closure of the Illinois State Museum’s world-class system of collections and monuments. The commission’s closure hearings began July 13; SAA’s testimony can be read on the SAA website, under Government Affairs News.

International Heritage Protection
Through the efforts of the International Government Affairs Committee (IGAC), SAA is qualifying as a “Civil Society” (no smart remarks, folks!) with the World Bank. This will give SAA the standing to make presentations on bank policies aimed at safeguarding cultural heritage. Two SAA members from Latin America, one on the Committee on the Americas and one on IGAC, plan to attend the October World Bank Civil Society Policy Forum in Lima, Peru.

FROM THE PRESIDENT
Diane Gifford-Gonzalez
SAA and Metal Detectorist Reality TV

By August, several episodes from season four of National Geographic Channel’s (NGC) Diggers series will have aired. Over 2014–2015, SAA’s Manager of Public Education Maureen Malloy and, for later episodes, SAA member volunteers vetted rough and fine cuts of nearly all episodes. The Society for Historic Archaeology (SHA) made a parallel review (see SHA President Charles Ewen’s blog post http://www.sha.org/blog/index.php/2015/07/diggers-done-right/?utm_source=rss&utm_medium=rss&utm_campaign=diggers-done-right). Former SAA President Jeff Altschul made a conference call to NGC and series producers to explain more fully SAA’s ongoing concerns. Individual episodes may be variably appealing to archaeologists, but we believe that this constructive engagement did produce results.

The Diggers website now has a “Responsible Metal Detecting” page with basic principles that SAA and SHA propounded (http://channel.nationalgeographic.com/diggers/articles/responsible-metal-detecting/). In recognition of the considerable amount of volunteer labor that SAA put in, NGC made a $3,000 gift to the Native American Scholarships Endowment.

Finally, I’ll alert members to the 2015 SAA Needs Assessment Survey, coming up this fall. This five-year-cycle, online survey is critical to how SAA monitors demographic shifts in membership and designs programs to meet members’ needs. Survey questions have been streamlined and updated. I urge you to contribute to a very robust response.

FROM THE PRESIDENT

SAR
Resident Scholar Fellowships Offered

Fellowships are awarded to scholars who have completed their research and who need time to complete books or doctoral dissertations on topics of anthropological interest.

**Tenure from 9/1/16–5/31/17**
**Includes stipend and low-cost housing**

**Deadline is November 2, 2015**

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scholar@sarsf.org • scholar.sarweb.org

School for Advanced Research
Under One Roof, Again—SAA’s 81st Annual Meeting, Orlando, Florida

The SAA 81st Annual Meeting will be held from April 6–10, 2016, at the Walt Disney World Dolphin in Orlando, Florida. Once again, the property will self-contain the meeting! The hotel is located at 1500 Epcot Resorts Boulevard, Lake Buena Vista, Florida 32830. Room reservations are now available via a link on Saaweb (www.saa.org).

How Do I Get a Free One-Year Membership in SAA?

All you need to do for a chance at a free one-year membership in SAA is to register at the Dolphin by January 20, 2016, and your name will be entered into a drawing for a one-year membership. There will be one drawing from the general/government block of rooms and one drawing from the student block.

Connecting Continents: EAA–SAA Joint Meeting—November 2015

Connecting Continents: Archaeological Perspectives on Slavery, Trade, and Colonialism, taking place November 5–7, 2015, is around the corner. The meeting, to be held on the island of Curacao, has been open for registration and will remain so until October 27, 2015, or until the 250 seats are filled. The program for this meeting is posted on Saaweb (www.saa.org). Don't miss these last few weeks to register.

Conferencia Intercontinental 2016—Mexico!

We are bringing SAA back to Latin America for the third Conferencia Intercontinental August 3–6, 2016, in Oaxaca, Mexico. The Call for Submissions is posted on Saaweb (www.saa.org). As has always been the case, the official language for the meeting is Spanish, and all materials are in Spanish. Don't miss this third Conferencia with its promise to be among the best!

2015 Needs Assessment Survey

The third Needs Assessment Survey of the SAA membership is coming this fall. Beginning in 2005, the Board has gathered the input of the membership to provide guidance to the Society. All members will receive a link to this survey, which has been pared down from the original 50 questions to 30. We understand that this will take about 20 minutes to complete, and we would like to thank you in advance for sharing your input. Please participate in this very critical assessment.

Getting Involved—November Open Call for Committee Service

This November will mark the sixth year in which SAA has made the process for volunteering for committee service an open one. Terms for most committee appointments are three years.

Appointments through this process will be made for available slots at the close of the Annual Business Meeting in Orlando, Florida.

An open call is also needed if you are currently serving on a committee and would like to volunteer for a second term. Committee chairs should encourage members to apply, as well as to re-apply for second terms, through the open process.

Please be aware that the requested statement is the way in which you will introduce yourself to the committee and share what you can bring to that committee. The statement is key in the decision-making process.

Note to students: Most SAA committees are structured to have two slots specifically for students. This is a wonderful way for students to become more active within the Society.

Staff Transitions

SAA is pleased to welcome two new staff members to its team. Jason Epstein, manager, Membership and Marketing, has more than 15 years of membership and marketing experience. Having begun in April, Jason was introduced to the SAA at the 80th
New Archaeology Journals

**Journal of Archaeological Science: Reports**
The new member of the Journal of Archaeological Science family, this journal focuses on the results of the application of scientific methods to archaeological problems and debates.

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At the recent SAA annual meeting in San Francisco, I received a nametag with a rather embarrassing overabundance of ribbons attached. These ribbons signified many things, but they also were indications that (1) I am getting old, and (2) I volunteer a significant amount of time for the SAA. Being asked to write this volunteer profile column just a few days after the meeting offered a welcomed opportunity to reflect on my (now long) career in the SAA.

I joined the SAA 20 years ago when I was a graduate student at the University of Michigan. That same year I joined my first SAA Committee, the Student Affairs Committee. By joining that committee and later becoming its chair, I was presented with many opportunities to learn about my profession and to network with my colleagues. I wrote articles for the *SA Bulletin* and was able to get my name in print. I worked with senior colleagues from the Board of Directors and created the SAA Student Paper Award. I ran focus groups to provide the SAA with data on how the annual meetings could be improved for students. In a professional sense, these were formative experiences that gave me skills and resources I could draw upon as I was starting my career. Pragmatically speaking, my work with the SAA afforded me experiences that set me apart on the job market. And, on a personal level, I made several lifelong friendships and expanded my network of colleagues beyond the world of my own university and previous field projects.

In writing this profile, I realized that in the 20 years I have been a member of the SAA, there has never been a time when I haven’t been serving on a committee or task force. In addition to the Student Affairs Committee, I’ve been a member of the Public Education Committee, the Committee for the Status of Women in Archaeology, the Publications Committee, the Annual Meeting Program Committee, the Nominating Committee, and the Student Paper Award Committee. I’ve served on six task forces. I’ve judged Ethics Bowls and poster competitions. I spent three years editing *The SAA Archaeological Record*. And, most recently, I chaired the Program Committee for the largest annual meeting in SAA history. For this, I was awarded the SAA Presidential Recognition Award—what an honor to be singled out among the many dedicated volunteers who give so much to the organization.

What has kept me volunteering so consistently over 20 years? There are many reasons, but three in particular come to mind. The first is that time spent volunteering for the SAA results in meaningful change and growth for the organization. Unlike so much “service” that is demanded in an academic job, the work I do for the SAA matters. In my 20 years of membership, I have seen the SAA grow and become a bigger, better, and stronger organization. I’ve been fortunate to be an active part of that change, and to do so working alongside so many other dedicated volunteers.

And that’s the second reason—the people. I experience a great deal of warmth, encouragement, camaraderie, and gratitude through my volunteer work with SAA. By and large, archaeologists are a great bunch of people to work with and serve, and I cherish the relationships I’ve forged in my years of volunteering.

Finally, volunteering for the SAA has given me a chance to continue to learn and grow personally and professionally. Archaeology has become such a large and diverse field, and being an SAA volunteer allows me to continually learn about my discipline. Taking on new roles like editor and program chair have challenged me to learn by doing, and I feel invigorated as I learn new skills and develop my knowledge in new areas to help the organization.

Thanks to everyone who has made my time with the SAA so rewarding and fun. I look forward to continuing my career as an active SAA member and volunteer!
Welcome to Orlando, the City Beautiful in the Sunshine State! Each year, over 95 million people visit Florida for vacation, relaxation, and to visit historical sites. Heritage tourism is a $6.6-billion-dollar industry in Florida, where we recently commemorated the 500th anniversary of Juan Ponce de León's first visit in 1513. This month we are observing St. Augustine's founding by Pedro Menéndez de Avilés on September 8, 1565. At 450 years old, St. Augustine lays claim to being the oldest continuously occupied European-established settlement in America. Orlando is located in the central part of the state and is best known historically for its citrus and cattle industry. We hope you can schedule time to explore our city and our state during the SAA 81st Annual Meeting, April 6–10, 2016.

You may know Orlando as an amusement park capital, but April is a beautiful time to squeeze more out of your visit to Florida. For local history and archaeology, you’ll want to head to the Orange County Regional History Center in downtown Orlando. The museum features exhibits on 12,000 years of central Florida history, including First People, First Contact, pioneer cracker homes, tin can tourists (tourism before Disney), the cattle and citrus industry, aviation, and African-American history. The History Center is close to Lake Eola, perfect for bistro dining or a walk to stretch your legs. Those coming early to the meeting can take advantage of the free Historic Walking Tour, offered the first Friday of each month by city preservation staff. You can also download self-guided walking tour maps from the Downtown Orlando website (http://www.downtownorlando.com).

Orlando is home to great historic neighborhoods, such as Lake Cherokee and Lake Eola Heights. North of town you can visit the city of Winter Park, home to Rollins College, established in 1885 and Florida's oldest college. Winter Park is also the home of Hannibal Square Heritage Center, which celebrates African-American history through photographs and oral history. West of Orlando is the community of Oakland and the Oakland Nature Preserve (ONP), where you can take a guided trail hike on Saturday during the conference. ONP is off of Lake Apopka, Florida's third largest lake and the epicenter of prehistoric habitation and historic agricultural activity.

Archaeologists have another reason to be excited about visiting the Orlando area: the second largest university in the country, the University of Central Florida (UCF), with 61,000 students and 210 degree programs, is located northeast of downtown. The 1,415-acre campus has the standard university fare of academic buildings and dorms, but also 600 acres of lakes, woodlands, and an arboretum. UCF is home to the Caracol Archaeological Project and the Forensic Anthropology and Stable Isotope Lab. Caracol is the largest Maya archaeological site in Belize, with a history that stretches from 1200 B.C. to 1050 A.D. Drs. Arlen and Diane Chase have posted season reports dating back to 1994 on the Caracol Archaeological Project website (http://www.caracol.org) and foster ongoing student research. UCF students Serenela Pelier and Sammantha Holder, supervised by of Dr. Tosha Dupras, made national headlines this summer with their stable isotope analysis of Napoleon Bonaparte's army, the remains of which were previously discovered in Lithuania in 2001.

If you like to explore historic cemeteries, Orlando has a special place for you. Greenwood cemetery, located downtown, was established in 1880 and is owned and operated by the city. Don Price is arguably the state's most famous sexton, as he works with great passion to offer moonlight tours, maintain vibrant social media platforms, and meet the funerary needs of the entire city.

Closer to the conference, Epcot is also a good place to look for culture, history, and archaeology. Epcot (Experimental Prototype Community of Tomorrow) opened in 1982 and is second only to the Magic Kingdom in popularity at Disney. Epcot's mission is to pay homage to human achievement, and it is touted as a permanent World's Fair. Archaeologists should be sure to check out the "Tomb Warriors: Guardian Spirits of Ancient China" exhibit.
in the China Pavilion. The exhibit features replicas of some of the 8,000 terracotta warriors discovered in 1974 in Xi’an, China, and a display on how archaeologists document sites with mapping, photography, field notes, and soil identification. Other country pavilions also feature archaeology and history of the countries that sponsor the pavilions, most notably Norway and Mexico.

Another archaeological draw near the conference is Downtown Disney’s “Indiana Jones” bar, officially known as Jock Lindsey’s Hangar Bar, which is set to open in the fall of 2015. Food and drinks at the Hangar are inspired by familiar names and events from the Indiana Jones movies, such as the “Rolling Boulder Meatballs.” You get the idea. And who is Jock? Indy’s pilot on several adventures and owner of a pet snake named “Reggie,” which serves as the name of the steamboat sitting area adjacent to the Hangar.

In the November issue of *The SAA Archaeological Record* we will suggest more ways to explore Florida’s archaeological heritage, as well as provide some details of the SAA tours to Canaveral and Vero. Start planning your visit to the City Beautiful in 2016!
Each year at the SAA Annual Meeting, the Native American Scholarships Committee (NASC) holds a silent auction to raise money for six competitive scholarships that are awarded annually to Native students and employees of Native cultural preservation programs. Silent auction earnings are combined with an endowment fund, individual donations, book royalties, and grants to support the Arthur C. Parker Scholarship, three National Science Foundation scholarships for archaeological training, and awards in support of undergraduate and graduate archaeology education. This is the first installment in a series of articles examining former recipients of scholarships awarded by the NASC. – Tsim Schneider

In 1998, I was privileged to be the first recipient of the Arthur C. Parker Scholarship, which honored the SAA’s first president, who was also of Seneca descent. The scholarship provides support for training in archaeological methods and cultural resource management. I used my scholarship to attend the Campbell Center for Historic Preservation Studies, where I completed the Archaeological and Ethnographic Core Curriculum. As I had no formal training in collections management, this was an important course for me to learn through on-the-job experience. I learned about the organic and inorganic components of collections and how the agents of deterioration impact those components. I also gained knowledge of collection management as it relates to legal and ethical issues, stabilization, handling, care, exhibition, and provenance. This course grounded my understanding of material culture and proved invaluable to me in my professional responsibilities.

I live in Washington State with my husband Earl, who is a retired archaeologist, our daughter Emma, who recently graduated high school and will be attending college in the fall, and our son Nathan, who just celebrated his first wedding anniversary with his wife, Katie. We moved here 13 years ago when I took a position as Curator for the Wanapum Heritage Center, a tribal museum operated by Grant County Public Utility District, as a result of their relationship with the Wanapum Band of Priest Rapids, a non-federally recognized Columbia Plateau tribe. I oversee the operation of the repository and the care and management of the ethnographic, archaeological, and archival collections. My other responsibility is to provide technical assistance to the Wanapum to identify and protect cultural items that fall under the Native American Graves Protection and Repatriation Act (NAGPRA), the National Museum of the American Indian Act, and the Washington State Burial Law. My repatriation work permits me to work closely with the Columbia Plateau tribes, including the Colville, Yakama, Umatilla, and Nez Perce. As part of the Columbia Plateau Inter-Tribal Repatriation Group, we regularly present testimony to the NAGPRA Review Committee.

One reason I took the position was the opportunity to work on a large-scale project to design and build a new Wanapum Heritage Center. For the past seven years, I have participated on the core planning team to design and build a new 50,000-square-foot building and 10,000-square-foot permanent exhibit within a twenty million dollar budget. This fall, the project will be complete and open to the public. I hope you will come and see it.
This once-in-a-lifetime opportunity gave me experiences that I will always treasure, from space programming to working with the Wanapum community to developing exhibit text using only their voices. I look forward to living in our new spaces and getting back to working with the collections.

The SAA Native American Scholarships Fund helped me to take a step I needed but could not afford. It also instilled in me the importance of giving back, which I accomplish through professional service. For instance, I serve on SAA committees (Native American Relations; Museums, Collections, and Curation; Native American Scholarships; Repatriation) and I participate in Institute of Museum and Library Services grant reviews, state professional societies, and other service projects, such as Registrars to the Rescue or the Washington Curation Summit, that address the archaeological curation crisis in Washington State.

As a Native Hawaiian, I looked to archaeology as a means to learn more about my ancestors. I am particularly interested in the relationship of material culture and history to the identity of native people. I love objects and the histories they can reveal, and I value them as touchstones to those that came before. I hope to one day work again in Hawaii and to realize my dream of developing island repositories for archaeological collections. These collections are important to all of us, and we need to care for them so that they can tell the stories of our ancestors.

Annual Meeting. He is enjoying working with membership and promoting SAA.

Amy Rutledge joined the staff as manager, Communications and Fundraising, in June. She comes to SAA with a strong background in non-profit and philanthropic communications, most recently at the Funders’ Network for Smart Growth and Livable Communities. As SAA’s first manager, Communications and Fundraising, Amy looks forward to building SAA’s communications program to engage and inform membership, raise SAA’s public profile, and promote archaeology to a wider audience.

Going Social — #SAA2016

Tweeting or posting about the 81st Annual Meeting in Orlando? Share your experiences or follow the conversation using hashtag #SAA2016

SAR
Nominations Sought for
$5,000 Linda S. Cordell Prize

This award recognizes innovative books in archaeology or anthropological archaeology that best exemplify excellence in writing, significantly advance archaeological method, theory, or interpretation, and inform other subfields of anthropology or related disciplines.

Deadline for the 2017 prize is January 15, 2016

Visit sarweb.org for more information on this program, including eligibility criteria and nomination guidelines.
A version of the following was delivered as the Patty Jo Watson Distinguished Lecture at the American Anthropological Association Meeting, November 2013. It was later videotaped at the University of Wyoming; a link with all the graphics can be found at: http://www.uwyo.edu/anthropology/directory/faculty/r-kelly.html

On Saturday morning, Cliff Gateson awoke at his usual early hour. He ate his usual breakfast of yogurt, fruit, dry toast, and black coffee. He checked the accuracy of the antique clock above the mantel, as he usually did, and watched the birds at the feeder outside the kitchen window, perhaps for a bit longer than usual. Then he decided to kill himself.

He didn’t make this decision as lightly as it may sound. In fact, he had considered it for months. But this is how Gateson worked. He’d mull something over for a long while and then, one day, it would simply be time to do it. Gateson could never predict this mood, but he knew to take advantage of it. And so it was that this bright morning seemed the right time to abandon his life.

If you knew Gateson, you would wonder why. He had been successful, employed at a decent university, worked on many projects, and contributed to research; he’d even had a bit of adventure, which is what archaeologists really want. His children were off on their own, doing well, and he had a lovely and caring wife.

But Gateson knew it had been some time since he had contributed anything meaningful. He feared he’d not lived up to what he’d demanded of students, to what he’d written. Sometimes he wondered how Walter Taylor must have felt: to have written something as provocative as A Study of Archaeology, and then ...? Did he feel he had let himself down? Let the discipline down? Gateson asked himself those questions, and he didn’t like the answers.

He left his wife a short note. He owed her some explanation, although he couldn’t think of a good one. He recalled that V. Gordon Childe had written, “Life ends best when one is happy and strong.” He knew his decision was selfish, but he could not continue with a professional life that he thought to be a charade.

His wife was away visiting family. He left a brief note—what could he say?—made sure the house was in order, and drove off into the desert.

Normally, he would have loaded the truck with the usual gear, but this time he took nothing, nothing but his thoughts. His career had started in this desert, many years ago. He had excavated elsewhere, but he always came back to the desert; he’d always found it a place where he could think. And so, as he drove, he thought about his early days in archaeology, about how much fun they had been. Gateson loved fieldwork, even when the weather and food were lousy, showers hard to come by, and the wildcat miners especially ornery. He thought about the practical jokes and clever banter he’d overheard, things like “Oh yeah, well Chuck Norris counted to infinity, twice.” Or, “let me tell you, that was one constipated monkey.” Or the student who said in her most ominous sci-fi voice, “In archaeology, no one can hear you scream.” As his truck bumped over the two-track, Gateson thought he just might scream.

He drove as far as the tank of gas took him. When the truck finally sputtered to a halt, he got out, left the keys in the ignition, and walked away. He had expected a sense of freedom, but actually it didn’t feel that good.

His destination was not far. And so he walked, smelling the sagebrush and watching lizards scamper away. He enjoyed the sound of footsteps in the desert. It was a lonely sound, and yet comforting. He eventually scrambled up a slope and, breathing hard, arrived at the top of a cliff.

He looked out across a sandstone canyon, the beige cliffs contrasting brilliantly with the blue sky. Gateson knew the canyon well because he had surveyed it in his youth. Looking over the edge, far below, he could see the cottonwood-lined stream he had crossed many times.

It seemed appropriate to leave the world as he came into it and so he stripped off his clothing and tossed it over the cliff’s edge. Some birds soared high above the canyon, catching the thermals. For a moment Gateson considered the image of vultures picking at his crushed body. That thought gave him a slight pause, but he was the kind of man who, once he decided on a course of action, would carry it through. And so he faced the abyss, spread his arms, and let himself be drawn over the side.

“So, you’re really gonna do that?” Gateson jerked, stumbled backward and looked around, but saw no one.

“Who’s there?” he called out. He looked down at himself and wasn’t sure if he was more ashamed of his nakedness or of his act. “Come out!”

And from behind a rock stepped a coyote, a gray beast with a sleek coat. Gateson stared as it sat down on its haunches. He thought it was smiling at him, but Gateson knew that all coyotes look like they’re smiling.
“Oh, I get it,” Gateson said, looking over the edge of the cliff, “I’m dead, and you’re my spirit guide. That didn’t hurt at all ... and, good grief, spirit guides are real?”

The coyote looked into Gateson’s eyes and slowly shook his head.

“You’re not dead, and it will hurt, a lot. And whatever you think a spirit guide is, you’re wrong. No one has guessed it right yet. But if it helps, then, fine, I’m a spirit guide.”

Gateson looked over the edge. He didn’t see his body down below, and he could feel the sun’s warmth on his back. It’s a hallucination, he thought. Coyotes can’t talk.

“Nope, not a hallucination,” the coyote laughed. “And I can do more than talk, lots more. But that’s all we’re gonna do today. Why don’t you take a seat?”

Gateson slowly sat down on a boulder, keeping a wary eye on the coyote. He assumed the heat had gotten to him, but decided to go along with whatever trick his mind was playing.

“OK,” Gateson said with caution in his voice, “so you’re a talking coyote, who is something like what I think a spirit guide is. Why are you here?”

“What? It’s not obvious?”

“Of course; you’re here to stop me. Make me reconsider, think about the work left undone, about the pain I’ll cause.”

“Well,” the coyote replied, “you will cause a lot of pain. More than you realize. But no. I’m here to make sure that what will be is what should be. And so, I thought you might like to talk. And then I’ll let you get on with your life, or ... whatever.”

Gateson looked out at the abyss. It was a beautiful day, and he did need to clarify what he was doing. He thought a few moments.

“Everything’s run its course. There’s nothing left. I could hang around until retirement, teach boring classes, write boring articles, retire, fix up the house, watch TV and wait to die. Or, I could cut to the chase and save everyone a lot of trouble.”

The coyote nodded. “You know, I’ve got this ‘life is beautiful’ talk ...”

“Save your breath. I know life is beautiful, but is it meaningful?”

The coyote kept nodding. “That’s what Professor Childe said.”

Gateson was surprised the hallucination could dig this deep into his mind. “V. Gordon Childe? You knew V. Gordon Childe?” he asked suspiciously.

“Yes,” the coyote said quietly as he looked into the abyss. “He made a good case. Pity.” He jerked his head back to Gateson and snapped, “So, what’s your case? Why should this be what should be?”

Gateson pondered the question. He thought about the years of fieldwork, the classes he’d taught, the changes he’d seen archaeology go through. He touched the patch that covered his left eye, an eye he had lost to his profession.

“Look, I’ve done archaeology, in North America, most of my life. And I’ve been a teacher for over half of it. And I was pretty satisfied, but over the last few years I’ve found that doing our jobs well has, to be honest, made it more difficult to do our jobs well. To do meaningful work.”

The coyote lay down and began to pile up some sand. “Meaningful?” he asked.

“Yeah, you know. Research that produces results that are beyond the mere details of prehistory, something more than new dates on arrowhead types, the oldest pottery, or the earliest sandal.”

He looked out over the cliff, “You know, I’d like to read a paper in the American Anthropologist that would be cited on the evening news the way newscasters cite the New England Journal of Medicine. That sort of thing, something beyond prehistory. Popular, yeah, but not mere entertainment, not some reality TV show about an excavation where the students quarrel and then vote someone out of the fieldschool.”

He paused a moment, poking his toe in the sand. “I tell students that archaeology isn’t just about the past, it’s also about the future. We all want to be relevant, but damn it, we just don’t seem to be. What if a secretary of state sought a long-term solution to war by considering what the only long-term record of human behavior, archaeology, says about the causes of war? Yeah, cool. But that can’t happen if we aren’t doing the research that answers those big questions. Some try, but I see many hurdles.”

The coyote piled up sand and then gently tapped the pile down. “OK, you want to save the world. Fair enough. And there are hurdles, which isn’t much of a surprise; saving the world won’t be easy, right? But you seem to think that doing your job well created one of those hurdles. Why?”

Gateson held his head in his hands. He thought about the survey he’d done in the abyss many years ago.
“Listen, when I was young there were chunks of U.S. prehistory that were still terra incognita. We pushed hard, creating legislation that made it U.S. policy to protect archaeology, and that led to CRM. Nowadays, most fieldwork is done through CRM and some of those companies are at the cutting edge.

“And preservationist legislation was followed by human rights legislation; NAGPRA recognized that archaeology isn’t just about the dead, it’s also about the living. NAGPRA made us recognize that archaeology has other stakeholders, descendant communities. And that was good. It made archaeology better.

“But the expansion of fieldwork, and legislation to protect the resource and to protect interests in the resource had consequences. We’ve learned so much that standard archaeological research is almost useless. When I first started in the Great Basin, the projectile point sequence wasn’t even completely known. In 40 years we’ve learned a lot. Because we did our job well.

“But it’s a diminishing returns curve. Every effort we make adds increasingly smaller amounts of knowledge. I tell my students that research entails finding a hole in our knowledge, and then filling it. But the holes are getting smaller. Really, who cares about a canyon like this one today. We can’t justify surveying it simply because it hasn’t been done; at the end of the day, what’ll we have learned?”

Gateson paused for a moment, fidgeting with his eye patch. “Now here’s what bugs me: CRM will always have something to do—at least until the damn Tea Party overturns the legislation—even if it means mapping late twentieth-century scatters of cell phone parts. But what about academic archaeologists? What can we contribute?”

The coyote continued to pile up sand and tamp down the top. “You’re whining. Go find a meaningful project and do it.”

Gateson shook his head. “It’s not that easy. Meaningful projects cost money. The National Science Foundation is our primary source of big money, and, frankly, the money just isn’t there.”

“Ah, yes,” the coyote said, “you mean this.” He waved at the sky and a chart appeared (Figure 1).

Gateson stared, slack-jawed, at the chart in the sky. “How did you do that?”

“I asked John Yellen for NSF’s archaeology budget since 2000, corrected for inflation, and made a Powerpoint slide.”

“No, I mean … wait, you know Powerpoint?”

“They have workshops for us.”

“They?” Gateson asked, incredulously.

“Never mind,” the coyote said. “The point is, you’re right. The NSF budget is flatlined; and even if congress cuts it to zero, the amount is nothing compared to what is spent annually on CRM—a few million compared to $330 million. Heck, one firm, Statistical Research, has an annual budget that’s twice that of NSF’s archaeology program. And in Britain and the EU, archaeologists can get grants of two to three million dollars that involve multiple post-docs and graduate students.”

“Exactly,” Gateson interrupted, “and that’s what it takes to do meaningful research. But with NSF—well, $150,000 for two years is dang good. And you can pretty much forget about post-docs or salary replacement. There’s not enough money. And that limits our ability to do meaningful work.” He paused for a while. “My colleagues in the other sciences think we’re a joke; they tell me I do drive-by research.”

Gateson looked down at himself, wished he had his clothes, but continued with his rant. “We’re handcuffed. And our universities can’t help. In fact, the teaching workload goes up. Lecturing once meant walking into a classroom with a piece of chalk, but now you have to have Powerpoint, and the education gurus tell us we should be doing group work with lots of graded assignments, flipped instruction, and active learning classrooms—that all takes time. Some of us now even have to differentiate between earned and unearned F’s!”

“We excavate in the summer, but there’s little time for follow-up
once we’re back because there’s no support. And the committee work and bureaucracy just goes up. Do you know what it takes to hire someone? To work the T&P process? Advising? Outcomes assessment? John Ziker found that faculty work 60 hours a week, and devote 30 percent of their time to committee meetings and email. What’s the point?

‘And, at the same time, I see drift in federal policy. Heck, archaeology is now a ‘negative impact.’ Many agencies don’t want projects if they don’t fit with their management plan, because they also don’t need the extra work. We’ve got ARPA, but looting is rampant. Preservation is the reigning principle, preservation for the future when we’ll have new techniques and questions. But the future is always on the horizon, and so that principle can be used to prevent research forever. Some fantastic sites are protected by UNESCO World Heritage status, but we actually know little about them and we never will if we see preservation and knowledge as mutually exclusive.”

“Well,” the coyote said, “when life hands you lemons.....”

“Oh, cut the crap.” Gateson was surprised to hear himself shouting, but he noticed that the coyote didn’t flinch. He’d never voiced these concerns before; he knew he should have had this argument with himself first. So he drew a breath and restrained himself.

‘Academic archaeologists in North America are handcuffed. Our extensive knowledge of the past means that we can’t contribute much with minor fieldwork. Those days are gone—because we did the job of those days well. And, with its funding, CRM does more than academics can hope to do. So, for academic archaeologists to do something meaningful we need to move archaeology to a new level. But that takes time and serious money, and we don’t have either. We could look to other initiatives in NSF, but that ratchets up the competition, and we’ve got a public relations problem: folks outside archaeology see it as little more than a treasure hunt—just look at what’s published in the science tabloids, *Science or Nature*. The public doesn’t see archaeology as valid research into serious problems.”

The coyote motioned with his paw toward the cliff, “And so you’re just gonna give up. Heroic of you. No doubt your colleagues will leap into action.”

“Oh, sarcasm,” Gateson shot back, “Is that what you used with Childe?”

The coyote lay down and piled up some more sand, “Grow up, Gateson. Life is tough. The obstacles change, but they’re always there. In fact, it’s meant to be that way. You think there’s nothing left to do? Expand your vision, Gateson. Look at this.” Another Powerpoint slide appeared in the sky. “I’ve tabulated the times each of the world’s countries is the source of a project or data in an article in several international journals from 2000 to 2010 (Figure 2). The redder a country, the fewer times it’s mentioned in the journals. Many countries can’t do archaeology; they’re too poor, too preoccupied with war, or with recovering from war. Take Angola. You can’t do archaeology in a country that’s covered in land mines. For other countries, there’s research, sure, but for whatever reason they aren’t part of the international conversation. In other cases, research is biased toward one time period; others are understudied.

“So, here’s one suggestion: if you want to make a difference, contribute something meaningful by doing good, basic fundamental research, get out of North America. Go help one of these countries explore their terra incognita, help bring them into the international dialogue, help train their students, help them build capacity.”

Gateson stared at the chart floating in the sky. Yoda here knows how to use Google, he thought to himself.

“I’m gonna ignore that,” the coyote growled, reading his thoughts again, “because I’m a little pressed for time. You’re not the only archaeologist with problems, you know.

“Universities are changing fast. They’re becoming more like businesses, and more state legislatures expect them to pay their own way. Right or wrong, they have to watch the bottom line.

“And in universities, enrollment and grants are power. If you have neither, you have no power and you’re the first to be cut. There’s bad news here and you already know part of it: archaeology can’t get the large grants that some other departments do. And things may get worse if some congressmen have their way and cut all NSF social science funding.

“But here’s the other bad news,” he waved his paw across the sky again. “These are enrollment trends in the social sciences (Figure 3). Look at anthropology. Not much power there. Maybe your field should jump onto MOOCs. People enjoy archaeology—all that vicarious Indiana Jones adventure. Although I doubt MOOCs will be the cash cow that the education-industrial complex thinks they’ll be, they could increase enrollments and visibility.

“Or, become indispensable by becoming cooperative. You can’t know everything, and the field changes rapidly. Students’ skills are out-of-date as soon as they graduate. So, you have to work...”
jointly with others—including researchers in other fields. The culture of archaeology encourages lone wolves, and the funding situation doesn’t help. But your colleagues in other sciences, and archaeologists in Europe, work in research groups. Archaeologists ridicule genetics or physics papers that have 25 or 30 authors, but those folks know that no one can do quality work alone. Archaeology’s been multidisciplinary for some time, but research groups are uncommon, and a lone wolf can’t run with the wolves today. I’m talking about organizing researchers from multiple institutions to work on a large, broad problem that archaeology can contribute to. This is a strategic play, but it’s more than that. Because you know that the significant problems are not simply archaeological ones, they’re bigger than any one discipline. You only hold one piece of the puzzle.

“So maybe that’s the other element: become relevant. You said you wanted to do meaningful, save-the-world kind of research. Well, then, let’s go all the way. What are the big problems facing the world today? How about poverty; state violence, including warfare, terrorism, and genocide; climate change; global economic collapse; overpopulation; and hate—racism, xenophobia, and the like.”

The coyote gently patted the pile of sand in front of him. “These are all interrelated. And they are big problems that require someone to think broadly. And frankly, that’s what you archaeologists are good at; being multidisciplinary is engrained in your culture. The breadth that’s so hard to maintain in a world of increasing information is your strength.” The coyote leaned forward and whispered, “Archaeologists could be the hero of this piece.”

Gateson looked intently at the coyote. “OK,” he said slowly, “you’ve got my attention.”

“Good,” the coyote said. “So take one of these global problems, form a research group, and ask what archaeology can contribute. When did poverty first appear in human history? How about warfare; state violence, including warfare, terrorism, and genocide; climate change; global economic collapse; overpopulation; and hate—racism, xenophobia, and the like.”

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Gateson looked intently at the coyote. “OK,” he said slowly, “you’ve got my attention.”

“Good,” the coyote said. “So take one of these global problems, form a research group, and ask what archaeology can contribute. When did poverty first appear in human history? What correlates with it? What about warfare? When does it appear? What’s correlated with it? What role does culture play in warfare? Is it about competition, or do people fight when they perceive a long-term threat to who they are as cultural beings? Is that what hate’s all about? Archaeology adds the dimension of time to this research; serious time—not those piddling centuries of history.”

“That won’t be easy,” Gateson muttered. “Universities and disciplines have cultures, and departments have to compete for resources. We don’t live in an ivory tower, you know; it’s a dog-eat-dog world. You run hard to stay in place because universities are zero-sum games. Everyone is trying to expand their turf, and state legislators generally hate us.”

“Reality is what it is,” the coyote said. “You have only two choices: change it or make it work for you. Maybe you can do both. You teach, so use teaching. Train students going into CRM or federal archaeology to remain intellectually engaged. Because if they’re not intellectually engaged, they’ll just manage sites like any other widget; and an archaeologist proposing research is just more paperwork. Compliance with federal regulations is not all they are responsible for; they’re also responsible for using the resource to increase knowledge.

“And CRM doesn’t do everything. It can’t. It only works where development is. So, seek out places where CRM isn’t filling the holes. Take high altitudes; the mountains see little development, so CRM isn’t there. And with much of your western forests left dead by beetle kill, vast tracks of forest are burning, and there’s a lot hidden beneath the pine duff. Or what about the coastal areas? We know they’ll soon erode as a result of global warming and sea level rise. Maybe you need something like the River Basin Survey to target and assess stretches of the coast that are vulnerable. Academics should take the initiative here. It’s your data that will wash out to sea.”

“And what about creating Archaeologists without Borders, folks who will respond to wars or other disasters, who can stabilize sites and pick up the pieces after a museum has been looted. And archaeologists will do this. Right after 9/11 your own SAA put together a volunteer team, ready to go help at the Fresh Kills landfill.”

The coyote looked out over the cliff. “Jeez, there’s plenty of meaningful work to do.”
The coyote paused, and looked at Gateson. “But I see why you're depressed. Because at first blush, archaeology is pathetic. You can't know details. Every so often someone finds a moment preserved in time, and you all get excited, like Italy’s ice man, the one you called Ötzi. You reconstructed his final days quite well—and you got most of it right.” He paused for a moment. “And by the way, Ötzi's killer got what was coming to him.”

“But of course, finds like that are rare. And not that important. Ötzi doesn’t tell you much about the European Neolithic. That comes from archaeology’s strength: looking at human behavior over vast reaches of space and time. No one else can do this. So, Big Data is the next frontier of archaeological knowledge in North America.

“But you'll need to ask why other fields already have databases that practitioners contribute to, but archaeologists pretty much keep everything to themselves. Some states have fairly decent databases, but for management, not research. Why isn’t there a complete North American radiocarbon database? Europe has theirs. Imagine tracking spatial and temporal changes in human population over thousands of years the way that palynologists track vegetation changes? Why can’t you look at something as simple as, say, the frequency of bifaces through time across the western U.S.? The density of potsherds across the eastern U.S.?

“This is the real strength of archaeological data, so think on that scale; link the appropriate data to a larger world-encompassing problem, form a research group, involve students and descendant communities, and the right government agencies. Make research the central element of education…. And damn the funding. go for it! Even small bits of funding, if coordinated, can eventually achieve a massive goal. Remember what Margaret Mead said: ‘Never underestimate the power of small groups of committed people to create change; indeed, nothing else ever has.’”

Gateson looked at the coyote, then turned toward the abyss; the beige sandstone and blue sky were a beautiful combination. He got up and walked to the edge of the cliff.

The coyote cocked his head to one side, seemed to smile again, stood up and stretched, “Well, as they say in the movies, ‘My work here is done.’” He gave the pile of sand a few final pats. “You’ve got everything you need to decide what should be.” Then he simply turned and vanished.

“Wait!” Gateson yelled, but the coyote was gone.

Gateson looked out over the abyss. He wondered what V. Gordon Childe had been thinking. He looked down at the coyote’s sand pile. “Everything I need?” he asked. He poked at the pile with his toe, then bent down and pulled out a plastic container and read the label: “Sunblock, SPF 500.”

He looked over the cliff’s edge and saw his pants hanging on a tree branch below. He squinted in the sunlight and peered down the canyon, where he saw only steep cliffs. Then he looked up the canyon and saw a narrow defile leading to the bottom, covered in wild rose bushes. “Oh, this is gonna hurt,” he groaned.

He turned to begin the walk down when his eye was attracted by sunlight glinting off something else in the coyote’s sand pile. Stooping, he brushed the sand away and found … a trowel, a Marshalltown trowel, a golden Marshalltown trowel. And he remembered his own words, “find a hole and fill it.”

He stood for a few minutes looking at the trowel. Then he looked at the abyss. “That's a big hole,” he muttered, “we’re gonna need a bigger trowel.”

Notes

1 Altschul and Patterson (Anthropology News, 2009); W. Doelle, personal communication, 2013.
2 For John Ziker’s study of faculty time allocation, see https://thebluereview.org/faculty-time-allocation/.
The fundamental question of all serious fields of scholarly inquiry is: How would you know if you are wrong? [Haber 1999:312]

Thanks to advances in methods and fieldwork, archaeology today seems poised to make major contributions to knowledge that extend beyond traditional archaeological and anthropological concerns. The recent identification of a series of “grand challenges for archaeology” (Kintigh et al. 2014) illustrates the applicability of our data and findings to major research questions across the human and natural sciences. But at the same time, standards of argumentation have declined, particularly in the anthropological archaeology of complex societies. As a result, increasing numbers of our published interpretations and explanations are weak and unreliable, and our empirical data fail to contribute to the accumulation of a solid body of archaeological knowledge.

Over the past decade, I have explored other social science disciplines by reading and interacting with colleagues on interdisciplinary research projects. I have been embarrassed at the frequent lack of rigor in archaeological argumentation in comparison with other social sciences. But at the same time I have been pleasantly surprised at the relevance of methodological and epistemological works in these non-anthropological fields. Both graduate training and the published literature in archaeology tend to neglect such issues. I did a brief nonsystematic survey of the content of graduate classes on theory and method at U.S. universities, and I found very little concern with the topics of argumentation and explanation beyond the occasional treatment of analogy. Yet these are fundamental topics in the many textbooks on social science methods available today (e.g., Abbott 2004; Booth et al. 2008; Gerring 2007, 2012).

In this paper, I identify a number of problems with current practices of archaeological argumentation and explanation, and I suggest some solutions that have proven effective in the social sciences. I start from the position that archaeology is a science in the sense that knowledge is responsive to evidence; claims are exposed to challenge; findings should be internally coherent; and arguments should be judged on the basis of explanatory power, generality, simplicity, and replicability (Gerring 2012; Wylie 2000). Given the constraints of this paper, I can cite only a small number of relevant sources; I focus on the most important references, and these can be checked for further citations.

The Structure of Arguments

Lewis Binford and other archaeologists affiliated with the New Archaeology movement gave a fair amount of attention to the structure of archaeological arguments and the nature of explanation. Unfortunately, many of their formal arguments were unsuccessful because they accepted a faulty view of explanation, the “covering law model” of the logical positivists. This kind of explanation had been shown to be inappropriate for the social sciences even before it was adopted by archaeologists. When archaeologists were unable to construct useful covering law explanations, they began to neglect epistemological issues, a trend that has affected work in both the scientific and post-processual approaches. Yet in the other social sciences, such questions have long been staples of methodological concern and student training. I draw from that literature in discussing the structure of archaeological arguments.

How Would You Know If You Are Wrong?

The epigraph from economic historian Stephen Haber gets to the heart of effective argumentation. This precept is discussed in just about every textbook in social science methods (e.g., Gerring 2007:74-75; Ragin and Amoroso 2011:39). It is a relaxed version of Karl Popper’s well-known concept of falsifiability as a criterion for a scientific argument. Popper had a strict concept of hypotheses that could be falsified with a crucial experiment. Subsequent philosophers of science showed that his scheme was too rigid for the social sciences, but the basic idea that one must be able to tell when one is wrong remains a critical foundation for empirical research. Here is how sociologist Andrew Abbott frames the issue:
It is surprising how many researchers—even graduate students in their dissertations—propose arguments that can’t be wrong. For example, research proposals of the form, “I am going to take a neo-institutionalist view of mental-hospital foundings” or “This paper analyzes sexual assaults by combining a Goffmanian account of interaction and a semiotic approach to language” are not interesting because they do not propose an idea that can be wrong. They boil down to classifying a phenomenon or, seen the other way around, simply illustrating a theory (Abbott 2004:216).

Post-Hoc Arguments

The post-hoc argument is a problematic form of explanation. Lewis Binford (e.g., 1981) discussed problems with this procedure, which he called “post-hoc accommodative argument.” He was referring to an interpretation that is applied to the data and findings once the research activities are complete. The problem with post-hoc arguments is that they can’t be shown to be wrong. The analysis is done, and the post-hoc interpretation cannot be disproven without another round of research. We can all dream up numerous alternatives to explain (or explain away) any set of findings. But without some form of testing, post-hoc arguments serve to introduce potentially faulty or misleading interpretations into the literature.

In experimental scientific fields, post-hoc arguments are considered unacceptable and even unethical. Psychologist Norbert Kerr (1998) labels the practice “HARKing” (Hypothesizing after the Results are Known), and he presents a list of 12 methodological and ethical problems with the practice. These include non-falsifiability, the encouragement of data fudging, and the promotion of narrow, context-bound theory. In experimental psychology, post-hoc arguments are seen as the scientific equivalent of the farmer who paints bulls-eyes around the bullet holes in his barn in order to show his superior shooting skill. In historical disciplines in which narrative explanations are common (such as archaeology), post-hoc arguments are less pernicious because research is not structured in terms of discrete individual experiments. Explanations are more commonly phrased as inductive, rather than deductive, conclusions. But John Gerring (2007, 2012) and others have proposed that most social science research (including case history and historical disciplines such as archaeology) can in fact be viewed as a form of the experimental method, and thus post-hoc arguments are best avoided if possible. Below, I discuss alternatives to this form of argument.

An Idealized Argument Structure

The faulty procedures outlined above involve the failure to test one’s arguments. Archaeologists sometimes claim that hypothes-
The two primary types of archaeological warrant are theory and comparative data. Arguments should be justified on the basis of one or more theoretical principles, and they should not violate accepted theoretical precepts. Arguments should also be justified by citing comparative data that establish at least the plausibility of the reason and claim. Comparative data are normally invoked in two areas of archaeological epistemology: discussions of analogy (usually termed “ethnographic analogy”) and explicit comparative research. But in fact comparative data can and should be invoked in many archaeological arguments, whether or not one is making a formal argument by analogy. Such comparative data do not have to be ethnographic; it can be the results of other archaeological research, data from historical research, or findings from modeling or other methods.

Booth et al. (2008:169) discuss two types of arguments. They note that researchers tend to give more credibility to claims that are backed up with reasons based on evidence than to claims that are inferred from a reason and a warrant. The latter is an argument based on general principles, not on evidence. This point brings up an important consideration that is too often lacking in archaeological arguments: specification of the strength of the evidence and the strength of the argument. Some arguments are much stronger than others, and it is important to distinguish arguments that are weak and speculative from those that are strong and well supported.

Pitfalls to Avoid in Citing Comparative Data

I have been dismayed at the growing use of a faulty form of argument, particularly in the archaeology of complex societies. One begins with a discussion of high-level, abstract social theory (e.g., practice theory, materiality, post-structuralism, actor-network theory). Then one presents one’s archaeological methods and results, with little reference to social theory. Finally, in a concluding section, one claims that the theory explains the data, or perhaps that the data illustrate the theory. For reasons discussed below (see also Smith 2011), this is a particularly weak form of argument. There is no testing, and linkages between theory and data are rarely operationalized in an explicit fashion. Most archaeologists recognize this as a weak argument, and some will therefore employ two kinds of faulty warrants to support their claims: ad hoc analogies and empty citations. While these devices may appear at first glance to give greater support to the argument, in fact they do nothing of the sort.

Ad Hoc Analogies

By the time Alison Wylie published the definitive paper on analogy in archaeology (Wylie 1985), this method had become embedded in archaeological practice. Although work on hunter-gatherer bone use, termed “actualistic” research, continued as a field of active methodological debate (Binford 1981), explicit attention to analogy receded from much of the archaeological literature. Perhaps graduate programs stopped teaching the method of argument by analogy; it now seems that poor and weak analogical arguments are almost as common as rigorous and strong arguments.

As argued explicitly by Binford (1967), and then formalized by Wylie (1985), an argument by analogy is a form of inductive logic. Wylie’s criteria for evaluating the strength of an analogical argument very closely match the criteria for evaluating inductive arguments as described in textbooks on logic (Copi 1982:397–400). The methodological guidelines are quite simple. One creates an analogy or comparison with known human activities or patterns in order to interpret one’s archaeological finds. The analogy is then treated as a hypothesis for testing, not in the sense of a definitive or crucial test, as in Popperian falsification, but rather in the form of the evaluation of alternatives. As discussed by Wylie, such evaluation proceeds in two directions: source-side research (increasing the number of cases and/or the quality and precision of the ethnographic, historical, or other analogues), and subject-side research (better specification of the archaeological case or cases).

Instead of following these simple and well-known guidelines, many authors today invoke analogy by citing one, or perhaps two, analogical cases from anywhere in the world that seem somehow related to the argument at hand. I refer to these arguments as “ad hoc analogies.” There is little consideration for sampling or formal comparison. Ad hoc analogies provide no support at all for the argument at hand. The fact that some human group somewhere in the world did something vaguely similar to what you are claiming for your archaeological case does not in fact support your claim.

Empty Citations

Empty references are references that do not contain any original evidence for the phenomenon under investigation, but strictly refer to other studies to substantiate their claim. Other authors subsequently use these empty references to substantiate their claims rather than going back to cite the original source (Harzing 2002:130).

Information specialist Anne-Wil Harzing was puzzled when the accepted wisdom in a field she knew was at odds with the data as she understood them. She created a dense chronological diagram of published works, showing which sources supplied data and who cited whom. When she removed the empty citations (works cited by other scholars but not contributing any new data), the diagram was considerably thinned out, and the studies that remained in fact supported an interpretation that was...
the opposite of the accepted wisdom. She discovered that authors who wanted to lend an aura of support for a weak interpretation tended to cite many sources, and these included many empty citations. Similar cases abound in the social sciences.

Empty citations are unfortunately quite common in archaeology today. Authors boost the apparent level of support for their claim by citing a number of works that discuss similar claims, perhaps in different regions or time periods. If the general proposition is plausible and widespread, then one’s particular claim may have greater validity. But if those references are empty citations and not citations for data, any increased support for one’s claim is illusory.

**Productive Frameworks**

In this section, I describe two explanatory frameworks that have been employed successfully in many scientific disciplines, including archaeology: strong inference and natural experiments.

**Strong Inference (Multiple Working Hypotheses)**

*Strong inference* is the term used for a process of hypothesis testing that originated with Francis Bacon. The standard description is an influential paper in the journal *Science* by physicist John Platt (1964). His model has four steps (Figure 2). This approach is often called the method of multiple working hypotheses, citing a paper from 1890 that was reprinted in *Science* after Platt’s article became popular (Chamberlin 1965). Although Platt made a number of claims that were later disproven (e.g., that scientific disciplines that employ strong inference advance more quickly than others), there is no doubt that his paper had a significant effect on scientific methods in many disciplines. In the words of biologist Rowland Davis (2006:244), “Platt imparted to many natural and social scientists an ambition to test hypotheses rather than to prove them.”

The method of strong inference was championed by Chamberlin and Platt as a way of avoiding a researcher’s tendency to become too strongly attached to a favored model or hypothesis, which can lead to efforts to merely confirm rather than disconfirm hypotheses. If the data merely confirm one’s pet theory, then one has not significantly advanced knowledge. We can all think of archaeological examples here. For the social sciences (and archaeology), the only adjustment needed is a relaxing of the requirement for “crucial experiments.” The two big advantages of strong inference are its emphasis on testing and the ability to know when you are wrong. One can evaluate multiple hypotheses, and, even in the absence of crucial tests, the last hypothesis left standing is most likely to be the correct one. The method of “inference to the best explanation” is a closely-related approach that is also very useful in archaeology (Fogelin 2007).

1. Develop alternative hypotheses for the case at hand.
2. Devise crucial experiments to eliminate all but one hypothesis.
3. Perform the experiments.
4. Start the process over.

**Figure 2. Strong inference (Platt 1964).**

**Natural Experiments**

A natural experiment, or quasi-experiment, is “an observational study that nonetheless has the properties of an experimental research design” (Gerring 2007:216). That is, cases are divided between a “treatment group” and a “control group,” and while their group membership is not assigned randomly, it is effectively random with respect to the outcome of interest. Jared Diamond and James Robinson (2010) assemble a number of natural experiments in society and history, including an archaeological case (by Patrick Kirch). A big advantage of experimental methods, including natural experiments, is that they permit stronger inferences about causality.

A common natural experiment framework examines the effects of strong outside forces (perturbations) on a group of similar or related social contexts. I have employed this strategy in examining the effects of imperial conquest on households in several excavated communities in central Mexico. In one case, several very different sites were subject to the same perturbation (conquest by the Aztec empire), resulting in divergent consequences; this suggests that local conditions were of greater or equal causal import than Aztec conquest in generating the observed changes. In another case, two settings were each subject to successive conquests by the Aztec and Spanish empires, resulting in parallel outcomes: few changes after the first conquest, but major destruction and transformation after the second. These results suggest that the observed changes were caused more by the nature of the empires than by local conditions at the sites (Smith 2016).

**Theory and Explanation**

**High-Level Theory and Middle-Range Theory**

As I discuss in more detail elsewhere (Smith 2011), there is an epistemological hierarchy linking different levels of theory, data, and the empirical world (Figure 3). Although some post-processual archaeologists have denied the existence of distinct levels of
theory (see Smith 2011:170), this is in fact a standard model in the social sciences (Abend 2008). High-level, or grand theory, is abstract and philosophical. Practice theory, post-structural theory, or materiality theory, for example, are broad and comprehensive visions of the world, but difficult or impossible to apply directly to explain individual cases without additional bridging concepts. Those concepts are supplied by middle-range theory. This refers to a widely accepted approach first articulated by sociologist Robert Merton in the 1940s. Later, Lewis Binford adopted this same term for a very different archaeological concept of formation processes. Although Raab and Goodyear (1984) tried to disentangle Binford’s usage from Merton’s concept, archaeologists have been slow to take advantage of the latter. According to Merton, middle-range theories:

lie between the minor but necessary working hypotheses that evolve in abundance during day-to-day research and the all-inclusive systematic efforts to develop a unified theory that will explain all the observed uniformities of social behavior, social organization, and social change (Merton 1968:39).

In the social sciences today, considerations of explanation and causality are closely bound up with middle-range theory. High-level theory, on the other hand, is preferred by social scientists of a more philosophical bent who want to interpret society in abstract terms.

This epistemological hierarchy is highly relevant to the success of archaeological arguments. High-level theory cannot be tested directly, and it offers few clues to explain specific empirical facts. If one accepts the ideas of strong inference and the necessity of testing archaeological propositions, then high-level theory is of little use in devising arguments that work. One needs middle-range theories that can be operationalized and tested, and rejected when appropriate. Scholars who use high-level theory rarely even think of rejecting or disconfirming those models; the very idea of trying to disprove practice theory or materiality sounds absurd. There is nothing wrong with high-level theory per se, particularly for those interested in philosophical ideas about the human condition. But if one is going to build rigorous archaeological arguments that have a chance of being wrong, then high-level theory is useful mainly for providing a context for the middle-range theory that does the explanatory work.

Causal Mechanisms

In the decades since the demise of the covering-law model for social science explanation, a new approach to explanation has flourished in the social sciences: causal mechanisms. In the words of philosopher of science Mario Bunge (2004:182), “to explain a fact is to exhibit the mechanism(s) that makes the system tick.” The analysis of causal mechanisms is closely linked to middle-range theory, both conceptually and in practice. There is a large and expanding literature on causal mechanisms in sociology, political science, social history, and other fields, but archaeologists almost never cite this material. Yet if we want to make convincing arguments about social conditions and changes in the past, it is well worth our while to explore the ways social historians such as Charles Tilly (2008) analyze and explain social continuity and change by way of causal mechanisms.

Discussion

Perhaps the most basic stipulation of good social-science argumentation is expressed in the epigraph: You have to be able to tell when you are wrong. This can be achieved by formal hypothesis testing or by more informal methods that evaluate alternative explanations. Although some archaeologists do not approve of this emphasis on testing (Johnson 2010:223), it is hard to see how we can achieve rigorous results and build a solid body of knowledge without it. In this paper, I advocate that archaeologists maintain an explicit consideration of the structure of their arguments, while avoiding pitfalls such as ad-hoc analogies and empty citations. The methods of strong inference and natural

![Figure 3. Epistemological hierarchy (based on Smith 2011).](image-url)
experiments hold promise for archaeology, particularly when used together with what social scientists (but not Lewis Binford) call middle-range theory.

Acknowledgments. I would like to thank the students in my graduate seminar on Theory for Archaeology for helpful discussions about the issues discussed in this paper. Of the works discussed here, they found the papers by Abend (2008) and Wylie (1985) to be the most useful and insightful. I appreciate the feedback on an earlier draft from several colleagues, including Michelle Hegmon, Keith Kintigh, and, especially, Chris Morehart.

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Paleoethnobotany lends unique insight into past lived experiences, landscape reconstruction, and ethnoecological connections. A wide array of paleoethnobotanical methodologies equips us to negotiate complementary understandings of the human past. From entire wood sea vessels to individual plant cells, all sizes of botanical remains can be addressed through the tools available to an archaeobotanist. As paleoethnobotanical interpretation is interwoven with other threads of information, an enriched vision of the relationships between landscape and people develops.

Collaboration is a necessary component for archaeobotanical analysis and interpretation. Through collaboration we make the invisible visible, the unintelligible intelligible, the unknowable knowable. We increase visibility through intra- and interdisciplinary engagements, descendant community collaborations, complementary approaches, and technological innovations. We improve intelligibility through targeted visualizations for scholars, students, and the broader public, using charts, graphs, models, images, and artistic reconstructions. We approach the unknowable through historical documentation, ethnographic analogy, and iconographic representation to understand how plants and their remains were viewed and negotiated in the past. Moreover, we attempt to preserve the past for the future, by archiving botanical multiplicity, preserving material heritage, making materials digitally accessible, and critically engaging with issues of botanical diversity, ecological sustainability, and food security.

Here, we draw on examples from the lab and the field to demonstrate how collaboration has made it possible to access disparate landscapes and their ethnobotanical stories. We consider the following questions: How is our view of plants and plant practices formulated and reformulated through cooperative efforts? What shared practices and modes of visualization improve cross-pollination, both between sister disciplines and within our own? What are our paleoethnobotanical contributions to a shared vision of archaeology?

Methodologies, Practices, and Multi-Proxy Understandings

There are many methodologies within paleoethnobotany that lead to distinct yet complementary pieces of information, whether due to scale of residue (chemical to architectural) or the technology available (hand loupes to full laboratory facilities). The limits of archaeobotanical analysis are constantly expanding as the accessibility and capabilities of technology improve. This is true for microscopes and software, which make it possible for a paleoethnobotanist to capture and enhance the smallest of cellular structures, and for telecommunications and digital records, which are expanding the possibilities for deciphering archaeobotanical material and for collaborating with distant stakeholders. Improvements in technology are an integral part of the exciting future of paleoethnobotany, which includes collaboration between many individuals and resources to help archaeobotanical research reach its fullest potential.

The recovery of multiple lines of archaeobotanical evidence has increased dramatically with technological advancements, higher volumes of research, and information sharing. Complementary approaches are becoming increasingly critical to address the full spectrum of plants and plant practices in the past. The use of multiple scales of plant data—from those visible to the naked eye to those a hundred times smaller—has in many cases revealed plant taxa invisible at one or several scales. Moreover, the visibilities of certain taxa are directly related to the taphonomic processes that filter the archaeological record. Macrobotanical analysis often pertains to carbonized plant remains, while phytolith analysis utilizes microfossils of plants that may or may not have been carbonized. Starch grain analysis incorporates plant remains that may be difficult to identify once carbonized, such as roots and tubers. Palynological analysis incorporates the pollen grains of plants that may not produce diagnostic phytoliths or starch grains. Chemical analyses, including isotopes, DNA, trace elements, lipids, and proteins, allow us to see what cannot be seen even through the use of microscopy.

The use of a combination of archaeobotanical analyses ensures a more complete picture of plant species growing near an
archaeological site and utilized by an ancient community. Phytoliths, macrobotanical remains, pollen, and starch grains can be recovered from sediments, making it possible to get a larger picture of plant use at a site by viewing it at the stratigraphic and chronological level as well as in terms of spatial, intrasite relationships. Microbotanical remains can also be removed from the cracks and crevices of artifacts. Such residue analysis provides a specific view of plant use that can be expanded to answer larger questions related to artifact use and practices occurring at a site (Pearsall 2008; Piperno 2006).

Actively drawing together different botanical elements, Herlich’s research in coastal Virginia and at shell midden sites connects macrobotanical residues from flotation samples, phytoliths from sediments, and phytoliths and starch grains from artifacts. These data address landscape use and design and seasonal mobility among Algonquian groups from ca. A.D. 1–1600. The focal shell midden is at the Kiskiak site in Yorktown, Virginia, an excavation directed by Martin Gallivan at the College of William and Mary. Through a combination of archaeobotanical data and historical accounts, Herlich’s project addresses the various practices and gendered labor divisions occurring at coastal sites. These activities are connected to landscape through the idea of the taskscape, or a dynamic landscape comprised of tasks occurring together or separately (Ingold 2000; Moore and Thompson 2012). The study demonstrates through archaeobotanical remains how Algonquian coastal sites were revisited and continued to play a role in community life as persistent places over time (Gallivan 2011; Schlanger 1992; Moore and Thompson 2012). The use of multiple lines of botanical evidence has allowed for the visualization of past practices.
Visualization, Collaboration, and Identification

Visual depictions are generally considered the most productive way of representing seeds and other archaeobotanical remains (Goddard and Nesbitt 1997:13). While there are many terminologies utilized by archaeobotanists for the purposes of plant identification, there can be misinterpretation and vagueness in these verbal depictions. Therefore, it is the physical image of the seed or other plant part (Figure 1) that becomes the most reliable medium with the greatest potential for communication and collaboration between archaeobotanists (Goddard and Nesbitt 1997:13). Photographs and illustrations are important tools for identifying plant remains as well as sharing information between paleoethnobotanists. Both serve as a useful means for capturing the detail of small objects, but archaeobotanists have traditionally preferred illustrations for capturing the three-dimensionality of seeds (Goddard and Nesbitt 1997:13–14).

Different types of microscopes provide paleoethnobotanists with a variety of visual opportunities. Reflected light stereo-microscopes enhance the view of carbonized plant remains that can be seen with the naked eye. When botanical residues are magnified (5x–50x), a paleoethnobotanist can see subtleties in morphology that make it possible for plant identification to the family, genus, or species level (Pearsall 2008). Carbonized remains may be difficult to identify with simple stereoscopic magnification, but paleoethnobotanists have found that with more advanced techniques, such as scanning electron microscopy (SEM), more accurate identifications are possible. Transmitted light microscopy, with magnifications of material up to 1000x, is the means by which the archaeobotanist can study microremains of past plant remains, making it possible for residues from artifacts and microfossils present in archaeological sediments to become visible. Such residues include phytoliths, starch grains, and pollen, along with other residues that may be fungal spores or diatoms (Pearsall 2008). For both transmitted light and reflected light microscopy, camera attachments allow for magnified images to be captured, shared, and compared with those in other samples and collections. There is also enormous potential in the area of digital video capture to illuminate the three-dimensionality of macroremains and microremains and share this view with others through video clips or even GIFs.

Beyond the technical elements, visualization is best realized through successful partnerships across subdisciplines, disciplines, and stakeholding communities. Interdisciplinary involvement includes the sciences (e.g., biology, environmental science, and occasionally, chemistry) as well as the social sciences and humanities (e.g., archaeology, anthropology, and history). This cross-disciplinary knowledge requires extensive education and often necessitates work with various specialists. Collaborative efforts between fields have led to innovative applications, including the incorporation of previously “invisible” lines of evidence such as phytoliths (drawn from fields such as ecology and botany), first analyzed by botanists in the mid-nineteenth century and utilized in ecological research (Piperno 2006:3). Paleoethnobotanists, such as Dolores Piperno and Deborah Pearsall, identified the significance of applying phytolith analysis to archaeological sites and to research questions related to plant domestication and paleoecology. The collaboration between archaeobotany and other disciplines has led to mutual benefits in such fields as conservation biology and ecology by providing further insight into past environmental conditions and landscapes (e.g., Lightfoot et al. 2013; Rick and Lockwood 2013). Such partnerships between academic disciplines extend beyond data sharing, theoretical frameworks, and applications of techniques. Archaeobotanists housed in anthropology departments often work with a variety of outside academic departments, sharing equipment and resources necessary for their analyses. Generous external disciplines have traditionally included chemistry, environmental sciences, and biology, where microscopes, fume hoods, sonicators, centrifuges, and chemicals are more readily available. This sharing of resources often leads to other sorts of collaborations, as we have experienced in the Keck Environmental Field Laboratory at the College of William and Mary. This collaboration includes working with resources and equipment so as to train students in paleoethnobotany, which merges topics relevant to both anthropology and environmental studies. Another example of collaboration and shared resources has been the involvement of archaeologists from Naval Facilities Engineering Command (NAVFAC) Atlantic in facilitating the archaeology and archaeobotanical analysis at Kisiski.

Reference materials are a critical element of archaeobotany, and a functional collection of reference materials involves interdisciplinary collaboration as well as work with an extended network of experts in various types of species and plant anatomy identifications (Figures 2 and 3). For each specialty within archaeobotany (pollen, macrobotanical, phytolith, and starch grain), there is a unique subset of materials necessary for an archaeobotanist to properly identify archaeological material. Traditionally, there has been a heavy focus on physical specimens as well as the use of various reference volumes. Almost every part of a plant can be evaluated archaeobotanically, depending on the technique, but such work requires access to multiple anatomical portions of plant samples. Access to seeds and nuts is necessary for macrobotanical work, while access to inflorescences, roots, tubers, and various other plant parts is necessary for microbotanical analyses.

Archaeobotanists develop an expertise typically at a regional level and might collaborate with local botanical experts, botanical societies, and botanical gardens for access to archival collections as well as assistance in identification of species and direction for
locating areas for modern collection. Herbaria and seed banks are other means by which archaeobotanists might obtain resources for reference collections and gain familiarity with seed and plant morphologies characteristic of their study regions.

Despite the benefits of photographs and images, as noted above, a physical example of a specimen is typically the most productive method of identification. Archaeobotanists usually archive in their collections a dried sample of a plant specimen and a charred sample of the same specimen in order to observe the effects of charring and to draw more accurate comparison between modern and archaeological materials.

However, being able to examine physical examples is not always possible. Digital technologies have made it easier to eliminate unknowns in archaeological samples through digital archives and collaboration between researchers. Communication between archaeobotanists to confirm and check various identifications is a crucial resource and component of collaboration. In Herlich’s research, archaeobotanist Linda Perry, Executive Director of the Foundation for Archaeobotanical Research in Microfossils (fossilfarm.org), and archaeobotanist Justine McKnight are examples of archaeobotanists and collaborators that regularly provide helpful advice and support. Email listservs and forums have become media through which photos of various archaeobotanical images can be shared between a large collective of experts, as evidenced by the phy-talk listserv run through Brigham Young University and the Archaeobotany listserv run through the UK (https://www.jiscmail.ac.uk/). Online resources of seed images also serve as tools for plant identification but have limitations due to the volume of species throughout the world and the laborious process of digitizing and making accessible a comprehensive collection of seed images and information. Websites such as the University of Missouri (http://phytolith.missouri.edu/), paleobot.org, and Colorado State University’s Seed Images are several directions taken by archaeobotanists to share visual resources and collaboratively identify and interpret archaeobotanical remains.

Paleoethnobotanical interpretations are constructed and visually rendered through a variety of media and software. At the empirical level, we attempt to visualize our data in a variety of ways, and then present our results to a myriad of publics. Charts, graphs, models, images, and artistic reconstructions (Figure 1) are all well-established means of both structuring and conveying information (as noted in Deufemia et al. 2012; Miller 2011; Pearsall 2008). Geographic Information Systems (GIS) have also proven useful for various types of analysis and visualization (e.g., Hallisey 2005; Llobera 2011; Morell-Hart 2011) but are still vastly underutilized. For pedagogical purposes, many different modeling techniques have been appropriated and manipulated to train students in the methods of paleoethnobotany (Pearsall 2008). Different physical visual aids are critical to paleoethnobotanical analysis, and visualization is critical to interpreting the past and communicating findings.

**Interpretations and Implications**

Presenting our interpretations to broader publics represents its own set of challenges in paleoethnobotany, and a variety of meth-
ods have been utilized to overcome these challenges—even comics have been used to represent plant use in the past (e.g., Zapatero 2005). Archaeological interpretation presents a set of difficulties well covered by other authors, many of whom have signaled caution in terms of visual representation and artistic reconstruction (Cochrane and Russell 2007; Moser 2001; Rudwick 1992). In paleoethnobotany, as with other specializations, we do not wish to introduce erroneous or misleading data but do want to humanize plant use and attempt to populate the past with actual people (following Carlson et al. 2010). This is something that Morell-Hart endeavored in her own research (2011), by working with illustrator Sarah Davidson to incorporate representations of people engaging with plants in a variety of ways, while simultaneously trying to leave out as many unknown details as possible—including age and gender (similar to Gifford-Gonzalez 1993). With human-plant interactions, as with other types of practices represented, how we populate the past in our narratives and visual reconstructions can have enormous impact on the present (Cochrane and Russell 2007; Moser 2001).

Although challenges to traditional 2-D reconstructions of plant practices have been made (e.g., Perry 2009), most representations continue to focus on visual media. Images can go far beyond simple representations and reconstructions (Back Danielssen 2012 et al.). Moreover, “visualization” can occur through non-visual means (similarly to Ouzman 2001) to represent a multitude of plant properties in the past and in the present, including touch, taste, and even sound. Understanding and representing these properties through a variety of means has been attempted through efforts at recreating meals, reconstructing ecologies, and building other sorts of multi-sensory experiences.

Once archaeobotanical data are recorded and synthesized, the archaeobotanist’s next task is to assess how this information connects with the archaeological and historical interpretations of their contexts. How do we “collaborate” with texts, ethnographic analogies, and iconographic representations of plants during the interpretive process? The many views through which archaeobotanists observe and record archaeobotanical remains have led to a larger visual projection and depiction of human-environmental relationships in the past. There are a variety of resources potentially at the disposal of an archaeobotanist to make this vision clearer: historical documents, ethnographic texts, oral histories, and collaboration with descendant and

Figure 3. Collaboration in paleoethnobotanical analysis: reference material collection with Beth Chambers, Herbarium Coordinator at the Herbarium at the College of William and Mary, and Robert H. Floyd, Natural Resources Specialist from the DPW Environmental & Natural Resources Division, Fort A.P. Hill (a) Tuber collection at Meadow Creek Pond, Fort A. P. Hill, Virginia; (b) American Lotus (Nelumbo lutea) at Fort A. P. Hill; (c) Beth Chambers in the College of William and Mary Greenhouse.
As we look toward the future, we seek to preserve the past, both corporated into the anthropological realm. Archaeobotanical analysis would be static—a list of plants uninformed and public realms. Beyond the large body of archived reference ornamentation between archaeobotanical data and various sources, stakeholder communities. Often archaeobotanical contexts do not have living sources or documentary materials associated with the same historical contexts, and this leads to dialogue and negotiation between later texts and ethnographies, carefully navigated through application of analogies and judicious use of the direct historical approach (Wylie 1985). Without this collaboration between archaeobotanical data and various sources, archaeobotanical analysis would be static—a list of plants unincorporated into the anthropological realm.

As we look toward the future, we seek to preserve the past, both physically and digitally, and incorporate our findings into academic and public realms. Beyond the large body of archived reference materials previously mentioned—various parts of modern plants, at different scales, from the chemical to the macro—paleoethnobotanists have made great efforts to archive ancient materials for posterity. We have many ways of documenting and sharing our efforts, through a variety of media, both physical and virtual. In this way, we help to contribute to archaeology’s greater goal of shifting our work in the public eye away from object fetishization and toward subject interpretation and shared information.

The rewards of collaboration go beyond disciplinary endeavor and dissemination of results. Paleoethnobotanical work has been incorporated into a wide array of public interests and even public policy. Critical efforts have been directed toward several key areas, increasing the visibility of paleoethnobotanical interpretation. Efforts to preserve and promote botanical and cultural diversity have incorporated paleoethnobotanical materials, from interpretive centers to agricultural practices (e.g., Cummings 2008). Similarly, ideas about ecological sustainability and food security have been impacted by understandings of ancient plants and ethnobotanical practices in public policy and non-profit sectors (e.g., Spielmann et al. 2011). Even ancient seeds themselves have been sprouted and grown (e.g., S. Ben-Yehoshua and L. Ben-Yehoshua 2012).

One model project that has managed to accomplish all of the above is the Native Seeds Project. This non-profit organization, based in Tucson, Arizona, “promote[s] the use of ... ancient crops and their wild relatives by gathering, safeguarding, and distributing their seeds to farming and gardening communities” (Native Seeds 2015). Such efforts contribute to food security by widening diversity and distributing collections (and thus mitigating risk), to ecological sustainability by incorporating a variety of locally appropriate propagation techniques, and to cultural preservation by distributing knowledge of archaeological findings, oral histories, and written narratives. Although our work encompasses a diverse array of endeavors, as archaeologists we strive to build such collaborations with an eye to the benefits that contribute to a shared future and a shared vision.

Acknowledgment

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The use of tablet computers in archaeological research has been gaining momentum as tablet computers become more available and affordable and software applications become more sophisticated and user-friendly. Software for databases, mapping, GPS, and other tasks is widely used on tablet computers and other handheld devices, and many archaeologists have now experimented with paperless recording in the field with various positive and negative experiences (Casalheira et al. 2014; Fee et al. 2013). The introduction of relatively inexpensive yet powerful tablet computers to the civilian market opened the door to this experimentation. The portable, lightweight design of tablet computers makes them ideally suited to the task of paperless recording, and, to date, archaeologists have taken advantage of these features primarily in excavation contexts.

Some of the advantages of tablet computers and paperless recording are readily apparent. Collection of data in a digital format alleviates the need for subsequent digitization, a process that inevitably increases the risk of various sources of error. Additionally, the ability to record and recall information “on the fly” is greatly enhanced, and the same device can be used to collect, store, and present a great variety of data, including, but not limited to, coordinates, photographs, maps, database records, notes, and voice recordings. Data from several devices can be uploaded to a main computer and merged. Later, the merged data can be downloaded to the devices again so that all team members have the whole project record at their fingertips.

However, this relatively new method of data recording in the field is not free of its own difficulties. We experimented with paperless recording during fieldwork on the Wadi Quseiba project in northern Jordan, and our experiences shed light on some of these difficulties but also on ways to mitigate them and take the utmost advantage from tablets. Unlike previous case studies involving tablet computers in archaeological excavation (e.g., Fee et al. 2013), we made exclusive use of tablet computers and digital recording in archaeological survey over two field seasons.

### iPads on the Wadi Quseiba Survey, Northern Jordan

A number of factors motivated us to experiment with the exclusive use of tablet computers, in our case, Apple iPads, for documentation of our survey of Wadi Quseiba and two smaller wadis in northern Jordan to search for evidence of late prehistoric occupation and activity. Among these were that tablet computers would enable us to efficiently record multiple types of archaeological data, eliminate the need to digitize information later in the lab, and allow us to rapidly compile and compute data to facilitate an experimental survey method that required us to update a GIS predictive model on a daily basis. These data included, but were not limited to, the lengths of transects, artifact densities along those transects, surveyor sweep widths (discussed in further detail below), survey coverage, and the continually updated probabilities that different spaces in the survey area contained undetected late prehistoric sites.

One of the most immediately recognizable advantages of shifting from traditional record keeping and data collecting to digital recording methods was that it eliminated the need for each individual team member to carry many separate pieces of often cumbersome equipment during field-walking (Figure 1). Eliminating the excess weight and unwieldiness of several pieces of equipment while surveying for many hours in the heat of the day was certainly a blessing during the Wadi Quseiba project, considering that temperatures in the Jordan Valley in the middle of August often exceeded 40°C. With the addition of the weight of artifacts and samples that we collected as the day’s survey progressed, any respite from carrying equipment and supplies—forms, clipboards, cameras, GPS units, pens/pencils, a variety of paper maps—was more than welcome. Tablet computers combine the capabilities of many of these things into one portable, lightweight instrument.

The iPad’s built-in camera and on-board GPS, which we found to provide both horizontal and vertical accuracy similar to that of a handheld GPS unit in field trials, eliminate two of the
largest and perhaps most cumbersome pieces of equipment that an archaeological surveyor must generally deal with. The photo quality achieved with the tablet’s onboard camera proved more than sufficient for documenting both the terrain features under investigation and most of the archaeologically relevant material that team members located within that terrain. As in excavation contexts, wherever we required highly detailed photographic records to document important sites or materials, a high-quality digital camera was also available, carried by one team member only. The majority of the time, however, this simply was not required and the tablet’s onboard camera more than sufficed for the task at hand. It also had the substantial advantage of allowing us to capture images directly into the project database (Figure 2).

The use of iPads also made it unnecessary for team members to carry paper maps to display terrain features or target areas within the survey region. Many software applications, including Google Earth and GIS software such as iGIS, Wolf GIS, and others, allow viewing of locations, tracing of paths, and marking of points considered archaeologically significant or valuable on digital, georectified, and often queryable maps. During the Wadi Quseiba survey project, which employed a predictive model created within a GIS environment, maps displaying each day’s targeted survey areas could easily be uploaded to the tablet computers so that any team member could access an up-to-date version of the survey’s “plan of attack” in different geographical locations within the survey universe. As we discovered, one difficulty is that data connections are needed to load and display maps within Google Earth or other mobile GIS applications. Yet in certain parts of our survey region, such as deep valleys, there were no ready connections to a mobile data network, making the display of dynamic maps impossible. In these cases, however, we were able to use static maps from the last logon or even screen-shots taken from a desktop computer in the lab to display targets in the survey universe on team members’ iPads so that they could identify and navigate to and from targeted survey areas.

Standard note-taking software, along with note or comment fields in a database application, allowed instant digital input of observations about any aspect of survey without the need for pens, pencils, or clipboards.

Above and beyond the simple convenience of eliminating extraneous equipment, displaying maps, or taking quick notes are several important advantages that come with the availability of quick, on-the-fly entry of digital information in a database. This eliminates many potential sources of error commonly encountered during the transfer of information from paper forms to a digital database. Instead, all of the information is input directly into the database as work is carried out in the field. For our purposes, we made use of a well-known piece of database software, FileMaker, which exists in both a desktop and a mobile version (known as FileMakerGo). The mobile version, loaded onto each iPad carried by survey team members, allowed us to record GPS coordinates directly from the iPad’s onboard GPS, while also quickly recording sites, objects, survey transects, and landscape elements of all types encountered during survey. In addition, this database has picture fields, which allowed us quickly and easily to enter photographs of sites, transects, artifacts, or landscape elements directly into the database from the onboard camera (Figure 2).

Our survey design required us to collect several specific types of data that needed immediate analysis before we could implement it. The details of the survey methodology for the Wadi Quseiba Project will be published elsewhere, but a brief description is necessary to show why this was the case.

In our attempt to maximize the efficiency of locating hard-to-
find archaeological materials in the modern landscape, our survey methods relied on an iterative predictive model that, by way of GIS and remotely sensed imagery, accounted for the dissection of the landscape since the Neolithic period and targeted areas in the modern landscape that are likely to be remnants of the landscape as it existed in prehistory. For each of these remnants we made initial estimates of the probability that they contained Neolithic materials. From here, we used a Bayesian allocation algorithm at the end of each day to revise these probabilities in light of our findings to date and to allocate how much additional search effort, if any, should be assigned to those portions of the landscape on subsequent days. We carried out this allocation process every day or two in the field so that our predictive model was constantly updated, and our search effort focused on those places that were most likely to yield positive results.

In order to accomplish these tasks, however, certain kinds of data on a day-to-day basis were essential. Recording whether or not we found anything was the easy part, but revising our estimates of coverage for each surveyed space required good estimates of the total length of transects walked, which we could measure from the beginning- and end-coordinates of each transect segment and from our sweep widths, which we estimated with “calibration runs” over fields seeded with artifacts in known locations, using methods similar to those of Banning et al. (2011) (Figure 3). Even with iPads, this process was somewhat involved, as we needed to upload data from each iPad at the end of each day, merge these data into a master database, calculate proportions of survey areas covered that day by dividing the coverage (product of effective sweep width and total length of transects) by the area of each survey area, and input this into the algorithm to determine how much further survey we should do, if any, in each landscape element. This somewhat complicated procedure was made possible only by the fact that each day’s recorded data was already available in a digital form ready for download and manipulation. Adding the extra step of transferring data from paper record to digital forms before this process could commence would have been prohibitively time consuming and would have rendered this novel survey method impossible. Ideally, we would be able to document our coverage of survey spaces in detail and use this information to update the posterior probabilities that each landscape element in our survey universe contained significant remains of the target periods (Epipaleolithic, Neolithic, and Chalcolithic).

To this end, the required calculation of the length of transects—or, more accurately, transect segments, since each transect walked by individual team members could be broken into pieces of a particular length due to obstructions (trees, shrubbery, stones, crevices, etc.) or changes in direction on the terrain features being surveyed—was rendered quite simple by way of the digital recording methods. Here, a certain field in the database could be dedicated to the calculation of the distance between two coordinates. Start and end coordinates automatically entered into separate fields from the onboard GPS could be used as inputs for the calculations attributed to that field, and the results displayed. Knowing this distance, and having it calculated on the fly, allowed us to generate the proportion of each survey area that was effectively covered by each surveyor. This proportion was instrumental in the decision-making process for further allocation of survey effort, in particular, target areas within the survey universe. Should a particular survey area have seen only very minimal proportional coverage, this would be readily apparent and further survey effort could be allocated to that area accordingly. These types of quick calculations and their attendant consequences on how work was divided up between survey areas throughout the seasons were made possible by the use of tablet computers for digital recording.

In order for these proportions to be calculated, another piece of
information was required in addition to the lengths of each transect segment walked by team members: the sweep width. Sweep width refers, in the most basic sense, to the effective width of a “band” perpendicular to the surveyor’s line of travel within which he or she can be thought to reliably spot artifacts (Banning et al. 2011). The width of this band changes depending on a number of factors, including the expertise of individual surveyors, the height of their detection devices (eyes, in this case) from the ground, the obtrusiveness of the artifacts themselves, the terrain, groundcover, lighting conditions, etc. In order to calculate these, several experimental runs were established and executed in order to calculate an average effective sweep width among team members in different terrain conditions.

These sweep width calibrations also took place with the help of the iPads (Figure 4). Transects were walked, with surveyors noting the distances along their line of travel and perpendicularly away from that line of travel where they thought they spotted artifacts of different classes that were created and planted by team members as stand-ins for real artifacts. These “calibration runs” were carried out in conditions that were thought to be close approximations to the conditions that would be encountered during survey. During these calibration runs, surveyors noted start and finish times in order to calculate the time spent walking transects of known distance (generally 150 m), time of day, and any positive identifications into the digital calibration database. This digital information was then easily manipulated using statistical software to come up with the appropriate sweep widths for the team, given different terrain and visibility factors. Coupling the results of the effective sweep widths of the survey team in different conditions with the length of transects walked during actual survey allowed for an area of coverage to be calculated and, after dividing this number by the area of target survey areas, the proportions of coverage could be calculated. Such a detailed survey strategy would not have been possible without the easy manipulability afforded by the digitally recorded data.

Additionally, we were also able to include such data as counts of different classes of artifacts along each survey transect. Tracking and recording these counts was accomplished so that artifact densities could be readily calculated in order that the identification of significant artifact clusters perhaps not recognized in the field could be identified in the lab. These were recorded on the tablet computers with the help of “counter buttons” in the FileMakerGo database, which, when pressed, would increment the number of certain artifact classes. These incremental counts were automatically associated with a particular segment of each transect, of which the particular length and sweep width were known. This made the calculation of artifact densities and thus the possible identification of archaeological sites efficient.

Thus, more importantly than the ease afforded by the elimination of several pieces of equipment, the digital recording method allowed, in our case, for the daily calculation of important metrics crucial to the experimental survey being conducted that would have been difficult to accomplish, from the point of view of time, effort, and efficiency, had we been using a traditional paper/map survey. These include the coordinates of the start and finish of each transect or transect segment, the length of transect walked, and the effective sweep width of each of those transects as they were being walked. Given that the survey methods we were experimenting with required all of these pieces of information to be readily calculated and input into spreadsheets containing mathematical algorithms for directing our survey and allocating our effort in the field as efficiently as possible, having them calculated in the field at the touch of a button and easily exportable and importable at the touch of another button for inclusion in these spreadsheets was invaluable.

As alluded to earlier, however, the adoption of digital recording methods was not without its own set of difficulties, which we
became aware of through our use of tablet computers as our primary recording devices in the field. While the disadvantages were few, and were outnumbered by the advantages that the tablets provided, especially given the survey methods that we employed, they certainly served to keep the field crew on their toes. One of the most glaring disadvantages of the use of tablet computers in the field was exactly that—glare. Often in the bright sun so prevalent in the Jordan Valley, the glare on the screen made the content of pages in the database difficult to read. Surveyors ended up having to spend time attempting to position themselves so that they could block the sun with their own bodies and provide appropriate shade to see the screen well enough to input their survey data. Much of the screen was rendered almost invisible in the direct sunlight, including the buttons that allowed for counts of different types of artifacts and the digital keyboard needed for taking notes on the terrain being surveyed or the artifactual evidence encountered. While this may not seem like too stressful a situation on the face of it, having to contend with this problem over a period of six or seven working hours on a very hot day can and did become quite frustrating for several of the crew members.

Another disadvantage was the difficulty that some crew members had in manipulating the digital keyboard on the iPad and the buttons created for data input within the database itself, even when they were completely visible. Such minor annoyances included the autocorrect function when trying to take notes, accidental zooming in on a page when trying to select a field (which occurred often when a button was not responsive at first, prompting team members to tap it again, effectively “double clicking” an area on the page and zooming in accidentally), difficulty getting the buttons to respond to finger taps, and difficulties navigating the different pages set up for transects, sites, and so on. Some of these issues were, of course, due to the glare mentioned above. Other times it was simply unfamiliarity with the tactile responsiveness (or lack thereof, in some cases) of the tablets themselves that led to these issues. In either case, these, too, often became annoyances for some crew members.

Because of these difficulties, typos in notes and the input of certain types of data, such as coordinates, transect numbers, and polygon numbers, in the incorrect fields was not uncommon. For this reason, even though not nearly as much transfer of data was required as would be from a strictly paper to a digital form, some level of corrections after exporting tables from the iPads was still necessary. However, as mentioned earlier, such corrections could be made in a much more timely fashion due to the original digital nature of the data. Simple cutting and pasting of data from the incorrect field into the correct one was certainly much more efficient and less time consuming than transferring data from one format to another would likely have been.

The most serious difficulty that we encountered was the loss of small portions of data due to either human error or errors on the part of the applications or hardware being used. The final cause of the loss of some transect data—that is, start and end coordinates of transect segments, as well as artifact counts along those transects—has yet to be fully discovered. However, one hypothesis is that the overheating of the machines in the hot Jordanian sun may have resulted in some glitches that did not allow the information to be stored correctly. Another hypothesis is that the accidental pressing of buttons by the surveyors, or errors in the transfer of data from the iPads to the main hub computer, may have been the cause. In any case, somewhere along the line between accumulating, recording, transferring, and viewing certain pieces of data collected on the tablet computers in the field, some digital information did indeed go missing. The likelihood that this was human error is high and is the digital equivalent to the possibility that human error could lead to the loss of data in a paper-based recording system for survey. Forgetting sheets of paper in the field, mis-
recording information during data transfer, and failing to record certain pieces of information in the first place are sources of error that can—and do—result in the loss of data when paper recording is the main method of recording data. Thus, although it was a disadvantage, loss of data was not a reason for the researchers to reject digital recording methods altogether.

In sum, there were several reasons why the move to a fully digital data collection and recording method was favored. Not least of these was the necessity of efficiently implementing daily survey results in an experimental method that resulted in the allocation of survey effort based on information gathered in previous days. This information needed to be easily manipulated so as to carry out the process of allocating survey effort. Despite several difficulties encountered during our trials with this new digital recording method in the field, such a process would not have been possible without it. The advantages of using tablet computers to implement a digital recording method in the field thus far outweighed any difficulties we may have encountered, including the difficulties posed by the sun and the intermittent loss of small portions of collected data. Moreover, the most serious of these difficulties, the loss of data, has largely been dealt with as our expertise with both the hardware and the software has increased during our seasons of fieldwork. Only with the use of tablet computers was such an experiment, which produced exciting results, possible.

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New Series: Principles of Archaeology

Each volume in this new series explores a specific topic of either practical or theoretical relevance to archaeologists. Written in an informal, conversational style, the books include such pedagogical elements as exercises, study questions, and suggested readings. The relatively low price, paperback format, and included teaching aids will make these primers ideal for adoption as supplementary texts in a wide variety of undergraduate and graduate courses.

A Primer on Modern-World Archaeology
by Charles E. Orser, Jr.
Despite its slow development, historical archaeology has been steadily maturing over the past three decades. Archaeologists today are exploring daily life in the post-1500 world at an increasing pace, investigating sites throughout the world, using a variety of complex theories and perspectives. Given the explosion of worldwide research, it is now possible to create a new historical archaeology: a modern-world archaeology that explicitly explores modern life in all its variations, extending from local to global scales of analysis. Focused on four overarching elements of the post-Columbian world (colonialism, Eurocentrism, racialization, and capitalism), this book is designed to introduce this new kind of historical archaeology.
172p, illus (Eliot Werner Publications, September 2014, Principles of Archaeology) paperback, 9780989824927, $29.95

Regional Settlement Demography in Archaeology
by Robert D. Drennan, C. Adam Berrey and Christian E. Peterson
Archaeological analysis at the regional scale investigates the past by studying how people distributed themselves and their activities across a landscape of hundreds or thousands of square kilometers. Archaeological field survey methods developed over half a century combine with powerful new quantitative tools for spatial analysis (including GIS) to unleash new potential for identifying and studying ancient local communities and regional polities. Field survey methods developed around the world are compiled from widely scattered sources and best practices for collecting archaeological data to sustain demographic analysis are delineated.
200p, illus (Eliot Werner Publications, September 2015, Principles of Archaeology) paperback, 9780989824941, $32.95

Forthcoming Fall 2016

Applied Zooarchaeology
Five Case Studies
by Steven J. Wolverton, Lisa Nagaoka and Torben Rick
c. 150p, illus (Eliot Werner Publications, Fall 2016, Principles of Archaeology) 9780989824965

Forthcoming titles in the series include: Chiefdoms: Political Evolution and Power Relations by Timothy Earle; Learning Lithics: A Primer for Flaked Lithic Analysis by Peter Hiscock; Bioarchaeology: A Primer – Theory, Method, and Data by Debra L. Martin; Ceramic Analysis for Archaeologists by Cathy Lynne Costin; Using Frames of Reference: A Guide to Binford’s Datasets, Program, and their Research Potential by Amber L. Johnson.

Advisory Editors
Robert L. Bettiger
University of California, Davis
Gary M. Feinman
The Field Museum, Chicago, Illinois
A t the SAA’s 80th Annual Meeting in San Francisco, California, the SAA Board approved the formation of the Teaching Archaeology Interest Group (TAIG). Before the 2016 membership renewals reach you, we want to introduce this group, our goals, and why we believe TAIG is an important addition to the Society.

Our Goals and the Road to Approval

TAIG is focused on teaching archaeology in a higher education setting, which can mean a traditional college classroom, an online classroom, or even a laboratory or field setting. Our three main goals are:

1. To serve as a network for archaeologists teaching in higher education to share resources, advice, and ideas,
2. To foster discussions on pedagogy and the ways that pedagogy can and does intersect with mentoring, research, and engaged scholarship,
3. To promote the inclusion of the Principles of Archaeological Ethics in archaeology courses.

TAIG grew out of a well-received session at the SAA 79th Annual Meeting in Austin, Texas in 2014. Inspired by a session on teaching that Heidi saw at the 2013 Annual Meeting of the American Association of Physical Anthropologists (AAPA), we decided to co-organize a similar forum. The 2014 session, entitled “The Engaged Classroom: Developing Activities for Archaeology Courses,” was sponsored by the Public Education Committee. We served as two of the discussants, along with Robert Connolly (University of Memphis) and Bonnie Pitblado (University of Oklahoma). After the discussants shared activities that they had used successfully in undergraduate classes, the audience was asked to brainstorm additional activities in small groups and share them with the other forum participants. The forum attracted several dozen participants and, as is often the case, conversations spilled into the hallway for some time after the forum had officially ended. Sensing an opportunity, we collected contact information from all of the participants, many of whom were eager to stay connected. It was at this point that the seed for an Interest Group was planted.

While we acknowledge that there have been earlier, successful initiatives to promote dialogue on teaching archaeology (e.g., Bender and Smith 2000), we thought that the interest group could facilitate connections and resource sharing among SAA members. In addition, a group focused on the many challenges and joys of teaching archaeology in higher education would complement, but not duplicate, efforts of the existing Public Education Committee and Committee on Curriculum. After the SAA’s 79th Annual Meeting, we drafted an Interest Group proposal and began planning a forum for the SAA’s 80th Annual Meeting in San Francisco, California, to continue the momentum from our successful 2014 forum. On Saturday, April 16, we co-chaired “The Engaged Classroom Continued: Selecting Teaching Materials for Archaeology Courses.” Once again, SAA’s Public Education Committee sponsored us. We served as discussants along with Nancy Gonlin (Bellevue College), Christine Dixon (Green River Community College), and Larkin Hood (Pennsylvania State University). The format was similar to the previous forum, with short presentations by the discussants followed by discussion. Participants considered common concepts taught in archaeology classes and brainstormed what engaging, accessible, and hands-on teaching materials could be used to help teach these concepts. After both forums, participants walked away armed with ways to teach archaeology better, lessons that truly stick, tips for engaging different learning styles, and teaching strategies to focus on the importance of archaeological research.
Also at the SAA’s 80th Annual Meeting, we hosted an Exploratory Meeting to bring together potential TAIG members. Here we had a room full of energetic participants who discussed their teaching experiences, their challenges and concerns, and their views about how TAIG could support those teaching archaeology in higher education. In all, the Exploratory Meeting left us with exciting new ideas for the classroom and potential partnerships for future meetings, including the Curriculum Committee and the Public Education Committee.

**Politics, Power, and Change in Higher Education and Archaeology**

We think that TAIG provides an ideal outlet not only for sharing resources and teaching strategies but also for discussing several trends that are shaping the terrain of higher education in the new millennium. These include changes in faculty staffing. Currently, only 33.5 percent of those teaching in higher education are eligible for tenure, while the remaining 66.5 percent hold adjunct or contingent faculty positions ineligible for tenure (Kezar and Maxey 2013).

A broader issue of concern to TAIG is academia’s devaluing of teaching in general, whether the teachers are tenure-track professors or adjunct faculty members. At times, it appears that excellence in teaching is valued less than research, even poor research. Yet Cobb and Croucher (2014) argue that research and teaching should not be seen as distinct categories and that students would be best served if colleges and universities gave more funding to pedagogical research.

Another important trend in higher education is the rise in online learning, including hybrid classes, fully online courses offered through brick-and-mortar universities, and online classes at fully online universities—a trend that has been shaped by the phenomenon of Massive Open Online Courses (MOOCs). Even though MOOCs have been around for less than a decade, they have already had an enormous impact on higher education. In the fall of 2013 alone, it was estimated that roughly 5.3 million students had taken at least one online course (Allen and Seaman 2015).

There are two different ways in which TAIG can serve as a resource for educators grappling with this swift and steady rise in online education. First, TAIG can help instructors to find ways to transfer instructional materials from traditional face-to-face classes to exclusively online or hybrid courses. Members can share pedagogical approaches appropriate for online courses and strategies for translating the physical, dirt-based nature of archaeology to the virtual online learning environment.

Second, given that many educators are pushing back on the idea that online learning is the inevitable future direction of higher education, TAIG offers members a forum for sharing ideas on how to advocate for the value of face-to-face learning in archaeology, including ways to demonstrate the value of learning venues such as field schools, which tend to attract a small number of students, to administrators focused on venues that attract higher numbers of students.

In addition to the larger institutional issues affecting higher education today, the politics involved in teaching about the past are also of concern to TAIG (Rainbird and Hamilakis 2001). Hamilakis (2004:287) urged archaeologists to challenge students “by devising pedagogical processes that create a space for critical reflection, reconnect subjectivity and experience with knowledge, and allow students not only to understand the material and social processes that generate and reproduce their own subjectivity, but also to question and even transform these processes and conditions.” As members of a discipline that prides itself on learning from the past, we should also use critical reflection to evaluate what has worked and what has fallen short in our own classes and to openly share these insights with others teaching archaeology. TAIG serves as a platform for this kind of critical reflection.

**It Takes a Village to Teach an Archaeologist**

From our own experience, we know that behind every practicing archaeologist, past and present, is at least one archaeology professor that helped ignite a spark or fan a flame. According to the blog *Doug’s Archaeology*, there are over 1,600 academic archaeologists in the United States (Rocks-Macqueen 2012). These archaeologists are vital to the discipline’s success because they recruit and train the next generation of archaeologists: the Millennials. Born between 1981 and 1997, members of this generation are currently between the ages of 18 and 34. Today, they are our undergraduates and graduate students; some are teaching assistants, and some are entering academia as professors. According to Novotney (2010), Millennials expect professors to use multimedia in the classroom, to find innovative ways of interacting with students both in and out of the classroom, to explain the relevance of the course material to everyday life, and to be creative with teaching methods and course assignments.

In the countless introductory-level archaeology classes taught each year, these 1,600 archaeologists have the opportunity to convince those who major in anything but anthropology or archaeology that we need (and even deserve) their attention and continued support. In a time when funding is being cut at every turn, every archaeologist should take note of these opportunities occurring every semester in lecture halls throughout the coun-
try. With this said, we urge those who teach archaeology and those who do not to come together through TAIG to find ways not only to recruit the next generation of archaeologists, but also to capture the hearts and minds of everyone else.

For those who do not teach archaeology, TAIG needs your support in many ways. Many professors are looking to make connections with local archaeologists in other sectors, such as CRM, local, state, or federal government, and museum settings. All sectors should come together to support and train archaeology students for the shifting demands of the workforce. Sharing new techniques used in the field or the laboratory, data from recent field seasons, or even legislation that may not find its way into textbooks for several years is a way for teaching and non-teaching archaeologists to collaborate together so that students can see just how the discipline is developing and shifting annually.

Our Plans for Orlando, Florida

We are excited for the SAA’s 81st Annual Meeting in Orlando, Florida in 2016, which will be our inaugural meeting as an approved Interest Group. In addition to a general meeting of TAIG members, we are currently planning the 1st Annual Teaching Slam, which will be organized in collaboration with the Committee on Curriculum and the Public Education Committee. The Teaching Slam will be a fast-paced, fun-filled event in which participants will offer mini-lessons on introductory archaeological concepts. For up-to-date information on the Teaching Slam, including information on how to register as a participant, like our Facebook page (Teaching Archaeology Interest Group—TAIG). We can also be reached via email at teachingarchaeologygroup@gmail.com. We look forward to your participation and support. In the meantime, when you renew your membership, please join TAIG (at no cost to you). Doing so will show your commitment to the future of archaeology.

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Erratum

In the March 2015 issue, the article entitled “Interview with John Francis on National Geographic and Archaeology Programming” incorrectly spelled the name of the archaeologist most recently awarded a National Geographic Society (NGS) research grant and his geographical area of study. The correctly spelled name of the NGS grant recipient is Matthew Piscitelli and his area of study is Cabrete, Peru.
Over the past several years a heated dispute arose over proposed residential property development on Grace Islet, a small (.75 ha) islet near Salt Spring Island on British Columbia’s south coast (Figure 1). This case has revealed deep divisions between heritage holders, land owners, and heritage policy makers in the province, and it highlights the need for new modes of intervention when more traditional methods of heritage protection are ineffective.

Grace Islet is home to an ancestral Coast Salish burial site where human remains and 16 burial cairns have been documented. Despite its recognition and registration in the 1960s as a heritage site (DiRu-009: Shiya’hw t village), the landowner, who had purchased the islet in 1990, received permits from the provincial Archaeology Branch to proceed with the construction of a residential dwelling. The start of construction in early 2014 triggered determined opposition from local residents of Salt Spring and other neighboring islands, conservation groups, and local First Nations, who called for an immediate halt to any alteration of the site. In response, the landowner argued his legal right to develop his property, a position supported by the provincial government. By mid-2014 all sides seemed dug into their positions, with little sign of movement or resolution (Petrescu 2014) (Figure 2).

The dynamic shifted in late 2014, when a local First Nation, the Cowichan Tribes, formally claimed title to the islet, arguing that their people had used it as a burial site long before the arrival of European settlers and that its conversion to private property had breached their Aboriginal title. In early 2015, officials announced that the Province of British Columbia had reached agreement with the landowner to purchase the site with the assistance of a land conservancy and was committed to developing a reparation and management plan to restore and protect the islet’s heritage and ecological values.

Although the Grace Islet case was perhaps more contentious and high profile than most, such disputes are not rare in British Columbia. Indeed, site-specific conflicts between land developers and those working to protect Indigenous heritage sites are common, particularly on the south coast, where such heritage sites are widespread and where land development pressures are high (Sayers et al. 2014). All too often First Nations come out on the short end of such disputes, especially when human remains and cultural artifacts are quickly removed and development is allowed to proceed. Typically, private property rights have trumped the rights of Indigenous people to protect their cultural heritage. For their part, as evidenced by the Grace Islet case, property owners are often caught in the middle of disputes and in some cases may bear considerable cost in their resolution. These experiences point to a need to rethink the provincial government’s approach to managing and protecting First Nations cultural sites, as well as the importance of increasing general public awareness as to what is at stake in such disputes (Gordon 2015).

In this article, we use the Grace Islet case as an entry point to consider the broader challenge of protecting First Nations heritage sites in British Columbia. To do so, we draw on the work of a group of cultural heritage experts—one that includes the authors of this article—who sought to intervene in this particular dispute. Our goal was to encourage greater understanding of the underlying causes of such conflicts and to support the reform of provincial heritage policies and practices such that they better reflect the importance of recognizing and protecting First Nations heritage values. In addition to examining the deeper and broader roots of the Grace Islet conflict and other similar conflicts, we highlight one strategy employed in our intervention—the creation and promotion of a new declaration calling on the protection of Indigenous burial grounds as sacred sites and cultural landscapes—and reflect on the utility of such an approach.
Underlying Causes

After much debate and protest, the Grace Islet dispute was resolved when the provincial government committed to purchase the land from the landowner, at considerable public expense, and also to protect the site for its ecological and heritage value (BC Newsroom 2015a). However, the apparent “victory” in the case of Grace Islet should not overshadow a concerning pattern in similar disputes in which site-specific conflicts arise and are resolved in an ad hoc fashion. The Grace Islet case differed from the norm in that a commitment to protect the site was eventually secured and the proposed development was halted—albeit after significant irreparable cultural and ecological damage was incurred. The more typical outcome has been that heritage experts and local First Nations representatives are brought in when human remains and cultural artifacts are found, the material is removed from the site, and development continues.

The costs borne by First Nations in all such cases are high in terms of disturbance of ancestors and degradation of cultural sites. Indeed, even where burial sites are eventually protected, First Nations leaders express dismay at the effort it takes to arrive at such a resolution. The Grace Islet case is a good example, taking years of concerted protest, petition, and, finally, threat of legal action before there was a commitment to protect the site. As noted earlier, developers and landowners may also incur substantial costs in such cases, associated with the expense of hiring heritage consultants to carry out site assessment and assist with the removal of material, as well as costs associated with the delay of development activity. Beyond the purchase price, the costs to restore Grace Islet to its pre-construction state will also be significant for those who are committed to its protection.

Throughout much of the Grace Islet conflict, provincial officials argued that existing laws and policies worked well to balance the protection of heritage sites with the interests of landowners who seek to develop their properties. However, the Grace Islet case highlighted serious gaps in British Columbia’s policy and legislative framework concerning heritage, especially when it comes to Indigenous burial sites. For many observers, both Indigenous and non-Indigenous, it belied belief that a landowner was given a permit to build a house on top of an identified...
Indigenous burial site. This approach hardly seemed to strike a reasonable balance between heritage protection and property development. A common question asked by many observers was whether a similar development would be permitted on a non-Indigenous burial site (Figure 3); the answer to this rhetorical question was usually an emphatic “no,” as such burial sites—or cemeteries as they are better known—are fully protected under the provincial Cremation, Interment and Funeral Services Act.

The gap in protection afforded to Indigenous, as compared to non-Indigenous, burial sites is a legacy of the province’s colonial past. In British Columbia, First Nations burial grounds that pre-date 1846 are not considered cemeteries but, rather, are defined as archaeological sites and thus are managed under the Heritage Conservation Act. The date 1846 reflects the signing of the Oregon Treaty, considered the onset of British (and later Canadian) sovereignty over what is now British Columbia. The assertion of 1846 as the onset of British/Canadian sovereignty has myriad effects; with respect to our central concern here, taking this date as a benchmark serves to draw a line between the remains of humans that receive full and respectful protection, namely those buried after 1846, and those laid to rest prior to this date who may be unearthed or otherwise disturbed because they are defined as being part of an archaeological site. It must be noted here that Canada’s assertion of sovereignty over the territory of what is now British Columbia is subject to First Nations challenge on a variety of fronts, including in numerous court cases.

While the Heritage Conservation Act affords some protection to pre-1846 burial sites, this protection is limited and subject to interpretation. For example, the Act states that a person “must not damage, desecrate or alter a burial place that has historical or archaeological value.” There is an implication here that not all burial places have historic or archaeological value, never mind other values that may be inherent in such places. In addition, the Act requires interpretation of the value of such sites, raising a number of critical questions, including who decides what value such burial places have and who decides what sites are worthy of protection.

Despite the fact that over 90 percent of heritage sites in British Columbia can be traced to First Nations, decisions about valuing and protecting these sites are made largely in keeping with Euro-Canadian conceptions and values. More particularly, such decisions reflect Euro-Canadian concepts of property that often prioritize the rights of landowners and the objectives of land and resource development over the protection of heritage values. Indigenous conceptions and values of cultural heritage are not well represented in current legal and policy regimes at provincial, national, or international levels. For some First Nations, for example, ancestral entities in burial sites are very real and present, existing in relationship with current-day descendant communities who are responsible for physical and spiritual ancestral protection (McLay et al. 2008). There may also be concerns about how site desecration could impact the spiritual and physical well-being of deceased ancestors, First Nations descendants, and others who come into contact with such potent cultural sites.

In British Columbia, some level of consultation with affected First Nations is required before development decisions affecting Indigenous heritage sites on private or public lands are made. In addition, Canadian courts have stipulated that some form of accommodation of First Nations interests may also be required. However, many First Nations assert that such consultations are inadequate given the increased pressures of development and because they are designed to expedite decision-making rather than to explore and accommodate diverse rights and interests. Concerns raised by First Nations may not be satisfactorily incor-
porated into the final site alteration or management plans. In some cases, the number of referrals received for review is substantial, with First Nations lacking the resources and capacity to respond effectively. In the end, without significant public pressure on governments or clear direction from Canadian courts, private property rights and resource extraction tend to trump First Nations interests.

There are other important factors influencing the Grace Islet and other disputes, including lack of funding, understaffing of the provincial Archaeology Branch, enforcement of permit violations, and the question of who should bear the costs of protecting important heritage sites located on private property. But the underlying critical issues here are an absence of understanding—and often lack of respect—for First Nations laws, values, and practices relating to burial sites and ancestral remains. Also overlooked is the need for descendant communities to have a say and meaningful involvement in how their ancestral sites are managed and protected.

In summary, the Grace Islet dispute points to significant inequities in how Indigenous and non-Indigenous burial sites are identified, valued, and protected. These inequities stem both from the reliance on an arbitrary reference date (1846) to distinguish between cemeteries and archaeological sites and from the dominant role played by a Euro-Canadian value system in shaping heritage legislation, policies, and practices. More fundamentally, such culture- and race-based inequities are rooted in a colonial perspective that has long privileged Euro-Canadian ideas and practices at the expense of those of Indigenous peoples.

Intervention

Observing the Grace Islet controversy at a distance, we came together with a diverse group of heritage experts in an effort to intervene in the controversy in a useful manner by drawing upon our collective scholarly and applied work. The group emerged out of the Intellectual Property Issues in Cultural Heritage (IPinCH) Project, an interdisciplinary and international research project involving collaboration between scholars, practitioners, and Indigenous communities (www.sfu.ca/ipinch). Based at Simon Fraser University, one key goal of the IPinCH Project is to explore new approaches to understanding and protecting Indigenous cultural heritage. As scholars and practitioners working on Indigenous cultural heritage in a variety of disciplines (e.g., archaeology, anthropology, law) and at a variety of scales—from local to global—we felt that a broader perspective was needed on what the media portrayed as a localized dispute. Our first step was to draft an open letter to key officials within the provincial government stressing the need for the Province to reassess its approach to protecting and managing Indigenous burial sites.²

Our letter, sent to provincial authorities and others on September 2, 2014, pointed to the need to view the Grace Islet controversy from larger provincial, national, and international perspectives, arguing that the minimal level of protection offered by British Columbia’s heritage legislation runs contrary to emerging trends in Canadian Aboriginal rights law, which increasingly recognize preexisting Aboriginal occupation and legal regimes and seek to reconcile these with the assertion of Crown sovereignty. We also noted that the favoring of land and site alteration over the protection of Aboriginal rights and interests is inconsistent with the aspirations of international Indigenous rights and cultural heritage law, including the United Nations Declaration on the Rights of Indigenous Peoples, which Canada has endorsed. In seeking to resolve such cases, we argued, governments, Indigenous peoples, and cultural heritage experts are all called upon to work within both Indigenous and State laws. Our intention was to highlight how British Columbia’s current legal and policy framework with respect to heritage sites was outdated and failed to reflect emerging national and international norms related to the recognition of and respect for Indigenous legal and cultural traditions.

In an effort to make our intervention in the dispute more concrete and broaden its application to other sites within British Columbia, a larger group of IPinCH team members subsequently developed a document that would more clearly articulate the growing global consensus around the importance of recognizing and protecting Indigenous ancestral burial sites and that would call on a wide range of actors in Canada, including all levels of government, to work together to ensure that such sites are not subject to alteration or damage. One of our key

Figure 3. “No House Here” protest by Joe Akerman and Briony Penn. (photo courtesy of Gary McNutt; nohousehere, Facebook).
DECLARATION ON THE SAFEGUARDING OF INDIGENOUS ANCESTRAL BURIAL GROUNDS AS SACRED SITES AND CULTURAL LANDSCAPES

We are archaeologists, lawyers, anthropologists, ethnobiologists, ethicists, indigenous community members, students, educators, writers, human rights specialists and scholars of cultural heritage who came together in a focus session on indigenous ancestral burial grounds that was organized as part of an international gathering convened by the Intellectual Property Issues in Cultural Heritage Project that took place November 7–9, 2014 on the unceded traditional territory of the Musqueam Nation, Vancouver, British Columbia, Canada.

Sharing a common concern about the safeguarding of indigenous ancestral burial grounds,

Convinced that there are reasons for particular concern over the fate of indigenous ancestral burial grounds in British Columbia, Canada,

Emphasizing that ancestral burial grounds are both the tangible and intangible cultural heritage of indigenous communities as sites of historical and religious importance integral to their traditions and spiritual beliefs as unique cultural landscapes,

Affirming that cemeteries are unique repositories of human history, the resting places of human remains, and witness to the continuity of human life, and that the cultural heritage to which burial sites bear witness must be maintained to ensure the historical record for future generations, such that prohibiting the relocation of cemeteries is an emerging norm,

Confirming protection of cultural heritage as of crucial value for communities and their identities such that its destruction may have adverse consequences on human dignity, human rights and human well-being,

Appraising the increasing affirmation by the world community of indigenous rights, the recognition of cultural rights as fundamental human rights, and the specific rights of indigenous communities that are based upon their fundamental rights to control their cultural heritage,

Recalling that international human rights instruments stress the importance of indigenous communities both defining and stewarding their cultural heritage as practices essential to their cultural survival and identity as peoples with living traditions,

Upholding the human rights principle that States must respect the rights of Indigenous Peoples to their cultural heritage and to maintain and strengthen their spiritual relationships with their ancestral lands,

Affirming ethical guidelines developed by the World Archaeological Congress, the International Society for Ethnobiology, the Canadian Archaeological Association, the American Anthropological Association, and the Society for American Archaeology for guiding interactions with Indigenous Peoples and cultural heritage, including principles of respect, stewardship, consent, partnership, mutuality and do no harm, while recognizing the interconnections between the spiritual, physical, emotional and cognitive dimensions of heritage in diverse cultural traditions,

Avoicing that States have a duty not to destroy, damage or alter cultural heritage without the free, prior and informed consent of concerned communities, and are obliged to take measures to safeguard cultural heritage from destruction or damage by third parties,

Reminding the federal government of Canada and the provincial government of British Columbia that Indigenous Peoples possess collective rights recognized and affirmed by the Canadian Constitution and in international human rights law that are indispensable for indigenous existence, well-being and integral development as peoples, and that both governments are obligated to respect these rights,

But, recognizing that the heritage-based rights of First Nations communities in British Columbia have for too long gone unrecognized, been neglected, violated, or ignored,

We hereby declare the following:

First, ancestral burial grounds are both the tangible and intangible cultural heritage of indigenous communities as places of historical and religious value and integral to their traditions and spiritual beliefs as unique cultural landscapes,

Second, human remains, regardless of origin, should receive equal treatment under law,

Third, to the extent that British Columbia Heritage legislation demands physical evidence of ancestral burial practices recognized by archaeologists solely on the basis of evidentiary forms and scientific categories that do not accord with or take into account the oral histories and cultural values of the Indigenous Peoples concerned, it violates fundamental principles of both indigenous rights and cultural rights recognized in Canadian constitutional and international law,

Fourth, the oral histories of Indigenous Peoples as provided by cultural experts are essential primary sources of credible evidence of ancestral burial sites that must be considered alongside scientific evidence of burial practices,

Fifth, there is urgent need for federal, provincial and local authorities to recognize and find legal means to protect ancestral burial grounds, skeletal and other physical remains and funerary belongings as integral parts of indigenous cultural landscapes interconnected with the health and well-being of indigenous societies,

Sixth, indigenous communities who maintain caretaking responsibilities must be directly involved in all aspects of decision-making regarding indigenous tangible and intangible cultural heritage, including the treatment of indigenous ancestral burial grounds, ancestral remains and funerary belongings,

Seventh, legally and ethically, there are professional, corporate, and political obligations and duties to recognize, assist and support indigenous communities in the care-taking, safeguarding, protection and preservation of ancestral burial grounds, ancestral remains and cultural landscapes, and therefore

We respectfully call upon:

The Federal and Provincial governments of Canada, local governments, local authorities, First Nations leaders, public and private sector stakeholders and civil society to:

act immediately in protecting First Nation ancestral burial grounds and heritage sites; and uphold the requirement for free, prior and informed consent of First Nations communities in approving any project that has a potential to impact their cultural heritage rights and responsibilities.
objectives was to remind non-Indigenous governments in Canada of their existing legal and ethical obligations with respect to First Nations sacred sites on which human remains of cultural and spiritual significance are interred. The result was the Declaration on the Safeguarding of Indigenous Ancestral Burial Grounds as Sacred Sites and Cultural Landscapes. The declaration was released on December 10, 2014, International Human Rights Day, with copies sent directly to key provincial officials as well local governments, First Nations authorities, and conservation groups involved in the Grace Island controversy. The declaration was released to the media in early January 2015, with an open invitation for individuals and organizations to endorse it. The declaration is reprinted in its entirety in the sidebar.

Following its public launch, we have received a growing number of endorsements in support of the declaration. Importantly, these include endorsements from such organizations as the Society for American Archaeology, the American Anthropological Association, the BC Association of Professional Archaeologists, the International Society of Ethnobiology, Salt Spring Islanders for Justice and Reconciliation, the David Suzuki Foundation, the Union of BC Indian Chiefs, and others. In addition, we have received endorsements from individuals throughout British Columbia, and indeed the world. We continue to accept and also solicit endorsements in support of the Declaration and hope that it will encourage a more complete and lasting resolution of outstanding heritage-related issues in British Columbia.

Resolution?
An initial resolution to the Grace Islet conflict was announced by the government of British Columbia on January 15, 2015, with the government negotiating a framework agreement with the landowner to purchase the land, compensate the landowner, and transfer title of the islet to the Nature Conservancy of Canada. That the immediate threat to the burial grounds has halted to the satisfaction of local First Nations is undoubtedly a good thing (BC Newsroom 2015b). There are, however, two troubling aspects to the agreement. First, the importance of the ancestral burial grounds does not feature prominently in the settlement, which instead emphasizes the ecological values of the islet, consistent with transferring the title to the Nature Conservancy. While the parties will undoubtedly work together to disassemble and restore the cultural and ecological damage from the housing development to the extent possible, once the purchase is completed, it has yet to be seen how the burial cairns can be protected over the longer term. Will First Nations be permitted to keep the site private for cultural practices, or will the islet be maintained as an ecological reserve open to the public?

Second, the agreement simply addresses this one case, with the government yet to indicate how, if at all, it will address the underlying problems that cause such disputes. Coincident with the settlement, the provincial government promised a review of its approach to heritage designation and protection, including applicable laws and policies, but no details have been released. Without such a review, and without a partnership with First Nations and the archaeological community in the process, these conflicts will continue to flare up, leading to further damage to burial sites, further distress for First Nations, further costs for landowners and governments, and further ad hoc solutions.

There are alternatives to this piecemeal approach. A full review of existing legislation, policies, and practices is a necessary first step. Our own scholarly and applied work suggests that collaborative, community-based approaches to decision-making provide a means of balancing values, interests, and perspectives. Conflict may be inevitable, but there are many alternatives to the current process used to comply with the Heritage Conservation Act, which too often results in the clear identification of winners and losers and which requires First Nations to fight for equality in how their ancestors and ancestral sites are treated. We see a new approach based on co-governance (POLIS Project 2014) that facilitates this kind of collaboration as critical to achieving a true balancing of development needs with the protecting of heritage values.

Grace Islet offers an opportunity for British Columbia to reassess its approach to protecting and managing such sites in light of the deeper understanding of underlying causes. We advocate for inclusive, long-term, and sustainable management
policies and practices recognizing Indigenous intellectual and material property, traditional cultural expressions, and ancestral remains. We must acknowledge the value of respecting Aboriginal rights, Indigenous laws, and heritage sites for all British Columbians and Canadians. After all, shouldn’t all Canadians, Indigenous and non-Indigenous, be able to expect that the burial grounds of their ancestors and loved ones remain fully protected and that they will have a say in any decisions made about their protection?

References Cited

BC Newsroom

Gordon, Katherine

McLay, Eric, Kelly Bannister, Leah Joe, Brian Thom, and George Nicholas

Petrescu, Sarah

POLIS Project on Ecological Governance

Sayers, Judith, Maureen Grant, Dave Schaepe, Robert Phillips, and Murray Brown

Notes
1. For a total of $5.45 million ($840,000 for property; $4.6 million for “losses suffered”).
2. For the full text of the open letter, see http://www.sfu.ca/ipinch/resources/declarations/open-letter-grace-islet.
3. The full declaration, including the names of the 27 signatories, can be found at http://www.sfu.ca/ipinch/resources/declarations/ancestral-burial-grounds.

CALENDAR OF EVENTS

2015

September 28 Online Seminar: Introduction to Digital Repositories for Archaeological Materials: tDAR (the Digital Archaeological Record)

November 5–7 SAA/EAA Joint Meeting: Archaeological Perspectives on Slavery, Trade, and Colonialism

November 17 Online Seminar: Archaeological Curation for the 21st Century

2016

April 6–10 SAA 81st Annual Meeting: Orlando, Florida

August 3–6 La Conferencia Intercontinental de la SAA: Oaxaca, Mexico
CALL FOR AWARD NOMINATIONS

The Society for American Archaeology calls for nominations for its awards to be presented at the 2016 Annual Meeting in Orlando, Florida. These awards are presented for important contributions in many different areas of archaeology. If you wish to nominate someone for one of the awards, please review the award’s description, requirements, and deadline. This information is posted on the award’s PDF Fact Sheet on the SAA website (follow links to About the Society/Awards page, or go directly to the page at http://saa.org/AbouttheSociety/Awards/tabid/123/Default.aspx). Each awardee is recognized by the SAA through a plaque presented during the Business Meeting held at the Annual Meeting, a citation in The SAA Archaeological Record, and acknowledgment on the awards page of the SAA website. Certain awards also receive monetary or other compensation. Please check the award’s online Fact Sheet for details, and contact the Chair of each committee with questions.

Here is a list of the award deadlines, followed by a brief summary of each award.

1) Award for Excellence in Archaeological Analysis / January 4, 2016
2) Book Award / November 20, 2015
3) Crabtree Award / January 3, 2016
5) Award for Excellence in Curation, Collections Management, and Collections-based Research and Education / January 11, 2016
6) Dissertation Award / October 15, 2015
7) Fryxell Award for Interdisciplinary Research for 2016 / February 4, 2016
8) Geoarchaeology Interest Group M.A./M.S. Research Award / December 4, 2015
9) Institute for Field Research Undergraduate Student Awards / March 1, 2016
11) Dienje Kenyon Memorial Fellowship / December 15, 2015
12) Award for Excellence in Latin American and Caribbean Archaeology / January 4, 2016
13) Lifetime Achievement Award / January 3, 2016
14) Fred Plog Memorial Fellowship / November 1, 2015
15) Award for Excellence in Public Education / January 10, 2016
16) Student Paper Award / March 1, 2016
17) Student Poster Award / March 1, 2016

Award For Excellence In Archaeological Analysis

This award recognizes an archaeologist whose innovative and enduring research has made a significant impact on the discipline. The 2016 award will be presented in the General category.

Nomination deadline: January 4, 2016
Committee chair: Susan D. deFrance, e-mail: sdef@ufl.edu

Book Award

This award honors two recently published books, one in the scholarly category and the other for a book written for the general public.

Nomination deadline: November 20, 2015
Committee chair: Elizabeth Arkush, e-mail: arkush@pitt.edu

Crabtree Award

This award recognizes an outstanding avocational archaeologist.

Nomination deadline: January 3, 2016
Committee chair: Michael Shott, e-mail: shott@uakron.edu

Award For Excellence in Cultural Resource Management

This award recognizes lifetime contributions and special achievements in cultural resource management. The 2016 award will be presented in the Research category.

Nomination deadline: January 10, 2016
Committee chair: Joseph Schulprenin, e-mail: joseph.schulprenin@gra-geoarch.com

Award for Excellence in Curation, Collections Management, and Collections-based Research and Education

This award recognizes outstanding efforts and advancements in the curation, management, and use of archaeological collections for research, publication, and/or public education. The 2016 award for will be presented in the Curation and Collections Management category.

Nomination deadline: January 11, 2016
Committee chair: Lynne Sullivan, e-mail: lsulliv2@utk.edu

Dissertation Award

This award recognizes a recent graduate whose dissertation is original, well-written, and outstanding.
CALL FOR AWARD NOMINATIONS

Nomination deadline: October 15, 2015  
Committee chair: Jason Yaeger, e-mail: jason.yaeger@utsa.edu

**Fryxell Award for Interdisciplinary Research for 2016**

This award recognizes interdisciplinary excellence of a scientist whose research has contributed significantly to American archaeology. The 2016 award will be presented in the Plant Sciences category.

Nomination deadline: February 4, 2016  
Committee chair: Lee Newsom, e-mail: lan12@psu.edu

Nomination deadline: January 4, 2016  
Committee chair: Tomas E. Mendizabal, e-mail: tomas_mendizabal@yahoo.com

**Lifetime Achievement Award**

This award recognizes the truly extraordinary, lasting, and positive accomplishments of an archaeologist.

Nomination deadline: January 3, 2016  
Committee chair: Barbara Voorhies, e-mail: voorhies@anth.ucsb.edu

**Geoarchaeology Interest Group M.A./M.S. Research Award**

This award ($500) provides support for thesis research for graduate student at the M.A./M.S. level in the earth sciences and archaeology.

Submission deadline: December 4, 2015  
Committee chair: Susan M. Mentzer, e-mail: susan.mentzer@ifu.uni-tuebingen.de

**Institute for Field Research Undergraduate Student Awards**

These awards recognize an outstanding student paper and poster, each with a $1,000 prize provided by IFR.

Submission deadline: March 1, 2016  
Committee chair: Wes Bernardini, e-mail: Wesley_bernardini@redlands.edu

**Douglass C. Kellogg Fund for Geoarchaeological Research**

This award ($500) provides support for dissertation research for a graduate student at the Ph.D. level in the earth sciences and archaeology.

Submission deadline: December 4, 2015  
Committee chair: Susan M. Mentzer, e-mail: susan.mentzer@ifu.uni-tuebingen.de

**Dienje Kenyon Memorial Fellowship**

This award ($1,000) provides support for a woman archaeologist in the early stages of her graduate training who is pursuing research in zooarcheology.

Submission deadline: December 15, 2015  
Committee chair: Frank E. Bayham, e-mail: fbayham@csuchico.edu

**Award for Excellence in Latin American and Caribbean Archaeology**

This award recognizes an individual who has made a lasting and significant contribution to archaeology in Latin America or the Caribbean.
World archaeology lost an active participant and widely loved contributor on June 9, 2015, when Akira Matsui passed away. Akira's research reached across a wide sweep of modern archaeology, and his professional community was truly international. The fact that he seemed both youthful and professionally and personally dynamic makes the loss especially poignant.

Although born and raised in Osaka, Akira began his career in archaeology at Tohoku University in Sendai, where he joined Chosuke Serizawa's active research community. Like his peers, Akira mastered the skills of lithic and ceramic analysis, but early on he decided that faunal assemblages and other “ecofacts” were understudied in Japan. To broaden his horizons and develop skill in zooarchaeology, he came to the University of Nebraska–Lincoln in 1977. With help from Carl Falk and Cal Calabrese, Akira became engaged in a research community that provided opportunities for laboratory analyses and fieldwork in exotic locations. He loved it all and deeply valued interaction with Native American communities. Returning to Sendai, he finished his MA and gained admission to the Ph.D. program but was soon off for further international experience. In 1979 and 1980, he was in Denmark and England, where he enjoyed fieldwork and the opportunity to meet Graham Clark and other scholars he greatly admired. At that time he also discovered the potential of wetlands archaeology.

The skills that Akira had developed matched the interests of Makoto Sahara and other innovative leaders of Japanese archaeology. In 1982, when he was 29 years old, Akira was selected for a research post at the Nara National Cultural Properties Research Institute (Nabunken) to develop a program in zooarchaeology and environmental research. He moved ahead with gusto and eventually became one of the Institute’s directors. His position linked him to projects and researchers across Japan. As a collaborative scholar, Akira supported this network with resources, guidance, and personal encouragement. Working with others, he produced a steady flow of papers that expanded understanding of ancient Japanese economy and ecological adaptations. He contributed to a steady stream of technical reports, but he also loved to present archaeological information in popular magazines, publishing on topics like diet, animal use, and lifestyle. These publications increased public appreciation of archaeology in Japan and made Akira something of a star, but he always remained a scholar. Many of Akira’s publications aimed to illustrate innovative research techniques, and he composed a number of synthetic works, including his 2007 masterwork, *Fundamentals of Zooarchaeology in Japan and East Asia*. That work and a series of others were published in English because Akira wanted to engage and inform the international archaeological community.

Akira held visiting posts at the British Museum and Harvard and proudly served on the editorial boards of *World Archaeology* and the *Journal of Wetland Archaeology*. Because of his broad connections, Akira was selected to head the assessment of the cultural resource impacts of the terrible 2011 tsunami that devastated the Tohoku coast. He also spent research time in Korea, China, Laos, and West Africa, and in recent years was actively engaged with wetlands projects in Oregon, Washington, and British Columbia.

As easy as it is to be impressed with Akira’s professional achievements, the clear basis of his accomplishments was his winning personal style. He was fun to be with. He worked long hours, but always with a relaxed and joyful manner. His office at Nabunken served as the break room for the students who worked in his lab. A meal with Akira was always an adventure in which he would discuss the fare, its presentation, and its archaeological signature. A car trip always included time for a break to romp with his beloved dog. As a collaborative scholar, Akira Matsui freely shared his gifts and enriched the lives of the people he met. He worked hard to learn from others, and he will be deeply missed by colleagues across the world.

—Peter Bleed, with input from Rika Shinkai, Naoto Yamamoto, and Junko Habu
The Southw est Symposium pro-
motes new ideas and directions in
the archaeology of the United
States Southwest and the Mexican North-
west. The 2016 symposium focuses on
Engaged Archaeology, showcasing collabor-
ative and participatory work with
descendant groups and local communi-
ties, public archaeology, and interdiscipli-
nary work, in spoken and poster ses-
sions. The conference will be held on the
campus of the University of Arizona in
Tucson, January 14–16, 2016. For more
information and registration, please visit:
https://www.regonline.com/builder/

Searching for original artwork?
Abalone earrings? How about a
souvenir to commemorate your
meeting visit? Or are you just looking to
support a good cause? Every year at the
SAA’s annual meeting, the Native Amer-
ican Scholarships Committee holds a
silent auction to raise money for six com-
petitive scholarships awarded annually to
Native students and employees of Native
cultural preservation programs. Silent
auction earnings are combined with an
endowment fund, individual donations,
book royalties, and grants to support the
Arthur C. Parker Scholarship, three
National Science Foundation scholar-
ships for archaeological training, and
awards in support of undergraduate and
graduate archaeology education. Can’t
make it to the auction? Consider donat-
ing items to the next silent auction at the
81st Annual Meeting of the Society for
American Archaeology in Orlando! For
questions about the silent auction, con-
tact Dr. Tsim Schneider, Department of
Anthropology, UC Santa Cruz; E-mail:
tdschnei@ucsc.edu; phone: (831) 459-
2472. See you in Florida and look for arti-
cles in forthcoming issues of The SAA
Archaeological Record featuring the
accomplishments of past scholarship
recipients.
¡La SAA llega a la América Latina de nuevo!


La convocatoria para ponencias y carteles (posters) está disponible ya en el SAAweb (http://bit.ly/SAAConferencia). Los resúmenes entregados serán revisados por expertos de la región, quienes escogerán entre las propuestas ya que se tiene restricción de espacios—sólo se cuenta con 46 espacios para ponencias y 30 para carteles. La Conferencia tendrá tres temas: (1) Intercambio y comunicaciones; (2) Saqueo y Tráfico Ilícito; y (3) Cambio climático y relaciones sociales. Únicamente se recibirán resúmenes por correo electrónico. Para mayor información en cuanto al proceso de postular una ponencia o un cartel, visite http://bit.ly/SAAConferencia.

La capacidad máxima para la Conferencia es 250 asistentes. La inscripción empieza en el SAAweb el 18 de abril de 2016. No habrá posibilidad de inscribirse en la Conferencia misma y todos los asistentes deberán hacerlo antes del evento. Se ofrecen descuentos especiales para los colegas latinoamericanos y caribeños.

Para mayor información en cuanto a la Conferencia, visite al sitio de SAA en la red http://bit.ly/SAAConferencia. Si tiene cualquier pregunta, no dude en contactar a Tobi Brimsek por teléfono a +1-202-789-8200 ext. 102 o por correo electrónico a (tobi_brimsek@saa.org). ¡Esperamos verlos en la tercera Conferencia Intercontinental de la SAA!
Curaçao, November 5–7, 2015

Archaeological Perspectives on Slavery, Trade, and Colonialism

Registration Deadline: October 27, 2015

Check online for the Final Program and Abstracts www.saa.org

The first-ever joint EAA–SAA meeting! Join us in Curaçao for an unforgettably enriching experience.
We Want You! Volunteers Needed for the Annual Meeting!

SAA is seeking enthusiastic volunteers for the 81st Annual Meeting in Orlando, Florida, who are not only interested in archaeology but who are also looking to save money and have fun.

To continue to give volunteers flexibility, SAA will again require only 8 hours of volunteer time! The complimentary meeting registration is the exclusive benefit for your time.

Training for the April 6-10 meeting will be provided via detailed manuals, along with on-the-job training. Training manuals and the volunteer schedule will be sent out via email on Monday, March 7, 2016. As always, SAA staff will be on hand to assist you with any questions or problems that may arise.

For additional information and a volunteer application, please go to SAAweb (www.saa.org) or contact Ahryel Tinker at SAA: 1111 14th Street, Suite 800, Washington, DC 20005, Phone +1(202) 559-7382, Fax +1(202) 789-0284, or e-mail ahryel_tinker@saa.org.

Applications will be accepted on a first-come, first-served basis until February 1, 2016.