prehistoric or historic cause for sixteenth-century landscape change, I take a ‘long-view’ that incorporates these disparate sources of knowledge and blurs the lines between history/prehistory to understand how the Tewa cosmos evolved in the face of dramatic change.  

Dvorcek, Douglas [188] see Van Hagen, Logan

Dwyer, Rachel (SUNY-University At Buffalo) [86]  
Passing the Paleo Drug Test: Testing for Medicinal Plant Use in the Paleoethnobotanical Record

For decades, paleoethnobotanical research almost exclusively concentrated on reconstructing past subsistence economies. At 2011’s SAA conference, I presented a paper entitled, Toward A Paleoethnomedicine. I suggested that paleoethnobotanical research should take inspiration from ethnomedicine (a subfield of ethnobotany) and concentrate on analyzing past people’s healing practices and performances. This paper presents a method to operationalize this concept, a technique for analyzing paleoethnobotanical data to detect past medicinal plant usage. The general observations from ethnobotany/ethnomedicine about modern medicinal plant use gives researchers an idea of expected observations in the paleoethnobotanical/ paleoethnomedicine record. A common practice in macrofloral analyses is to calculate the ratio of a plant group (food, nut shell, charcoal etc.) in order to provide evidence of the certain activities at a site. This paper presents a new ratio extrapolated for plant observations from archaeological contexts and includes the results of a pilot study based on the paleoethnobotanical data from Birka and other Late Iron Age/Medieval sites in east central Sweden.

Dye, David [291] see Burnette, Dorian

Dyer, Monica [154]  
XRF Analysis of North Carolina Piedmont Ceramics to Locate Source of Production and Trade at Rural Plantation Sites

Little documentation exists of the trade exchange occurring in the central Piedmont during the 18th and 19th century at wealthy plantation sites or at surrounding sites of lower economic status. In this historical archaeology research, I focus on understanding the socio-economic patterns of settlers in the more rural areas of the region at two plantation sites and wasters from a local kiln site from same time period. Using pXRF data of lead glazed earthenware I attempt to map ceramic regional origin using existing pXRF data of identical ceramic types. Non-local wares for comparison were chosen based on documented trading sites during the 18th and 19th centuries, including Britain, Philadelphia, the Chesapeake, South Carolina and the Northern Virginia Piedmont. I propose that the settlers’ desire for independence and sustainability to form a nation independent from Britain would have been the primary factor in deciding where to obtain utilitarian vessels, rather than choosing non-local sources as an indicator of social status, i.e., local wares should be much more common than those from northern states or imports.

Dyke, Arthur [16] see Forsythe, Kyle

Dylla, Emily (Baer Engineering and Environmental Consulting, Inc.) [220]  
Hunters, Soldiers, and Holy Men: Exploring the Gendered Politics of Mission Landscapes in Alta California

Space was paramount to Spanish missionary work in 18th and 19th century Alta California. This mission system was designed to irrevocably reshape the Indigenous conceptual universe into that of a Christo-European worldview, to transform Native peoples into gente de razón. In addition, missions were the setting against which military and colonial warriors were in constant contact, and missionaries also used space as a moralizing tool, in an attempt to reform the lax morals of soldiers assigned to guard the missions. In this paper, I examine how the mission system reconfigured California’s natural and cultural landscape, and the gendered politics uppinning these changes. I focus in particular on identifying disparate ideals of masculine gender among mission inhabitants, and suggest masculinity was a significant locus of both conflict and concord that helped to shape not only the missions themselves but Alta California as a whole.

Dzvonick, Laura [155] see Ripley, Kevin

Ea, Darith [175] see Heng, Piphal

Earle, Julia [100] see Payntar, Nicole

Earle, Timothy (Northwestern University), Magdolina Vicze (Százalombatta Museum), Kristian Kristiansen (Gothenburg University) and Marie Louise Sørensen (Cambridge University) [245]  
Százalombatta Archaeological Expedition (SAX). Hungary: A 20-Year History of Theories, Methods, and Results of an International Project in Central Hungary

This paper documents the theories, methods, and results of SAX, an international, collaborative Bronze Age project in the Carpathian basin. Three topics are emphasized: First is the value added by international collaboration, which creates an intellectual openness to research objectives and theoretical discussion. Second are technological transfer and creative problem-solving approach to field and laboratory research. And third is an inherent comparative agenda, for which results are seem always within broader regional, transregional, and world contexts. The project has produced over 20 years of sustained research with substantial results on Bronze Age society along the Danube, a major transport route for metal.

Earley, Caitlin (University of Nevada, Reno) [128]  
Becoming Divine: Stone Sculpture and Deity Impersonation in Classic Veracruz Visual Culture

Recent study of an hacha from Classic-period Veracruz in the collection of the Metropolitan Museum of Art reveals that hachas and palmas may have been used as costume elements in ritual performances related to the ballgame. As costume elements, these sculptures would have allowed actors to assume the identity of captives, rulers, or deities. This accords well with iconographic evidence of ballgame-related ritual performances in Veracruz, and suggests comparisons with artworks from other Mesoamerican cultures, in which rulers impersonate deities in performances associated with the ballgame. In this paper, I suggest that deity impersonation and performance are productive lenses through which to interpret ballgame-related sculpture, including yokes, hachas, and palmas. I examine a corpus of stone sculpture from Classic-period Veracruz, considering how such sculpture may have been used to invoke the presence of specific deities, and what it can tell us about the role of those deities in Veracruz culture. Incorporating comparative evidence from Central Mexico and the Maya area, I demonstrate that deity impersonation in Classic Veracruz worked to affirm political power, solicit the sanction of the divine, and express fundamental ideas about gods, the cosmos, and the continuation of time.

Earley-Spadoni, Tiffany (University of Central Florida) [75]  
Fear Written Large: Systematic Warfare and the Ancient Empire of Urartu

This paper presents a Landscapes of Warfare case study, combining textual documentation, archeological data and GIS analysis to elucidate the effects of pervasive warfare on the development of Urartu, a highland empire that existed in the ancient Near East in the 1st Millennium BCE. Specifically, I argue that forts, fortresses and fortified settlements were strategically placed for both defensive communication as well as the systematic
surveillance of roads. The paper contributes to scholarly debates by showing that the evidence for systematic warfare conveyed by Neo-Assyrian texts and images stands in contrast to the primarily economic and ecological explanatory models offered to explain regional phenomena, indicating a need to integrate historical evidence with archaeological explanation. I conclude that signatures of warfare are discernible in landscape studies, and that GIS reconstructions provide powerful tools for evaluating them.

Eberl, Markus (Vanderbilt University), Sven Gronemeyer (Rheinische Friedrich-Wilhelms-Universität, Bonn) and Claudia Marie Vela González (Universidad del Valle de Guatemala)

A Non-elite Termination Ritual at the Classic Maya Capital of Tamarindito

In Classic Maya society, termination rituals were conducted to ‘kill’ buildings and artifacts, predominantly in elite contexts. The resulting deposits were rapidly deposited in intentionally damaged buildings. They contain dense artifact assemblages with exotic objects and refittable ceramic sherds. After burning them, the artifacts were covered with white mud. Here, we report the extensive excavation of non-elite Structure 5PS-12 at the outskirts of the Classic Maya capital of Tamarindito. Its use and abandonment date to the eighth century AD and towards the end of the site’s royal dynasty. The destruction of its wall foundations and the even distribution of wallfall suggest that the building was dismantled. Wallfall and floor contained many complete tools and rare artifacts, particularly in the north annex. Refitted ceramic sherds indicate that partial vessels were broken apart and systematically distributed across the building. The lack of a marl cover and limited evidence of burning set Structure 5PS-12 apart from elite termination rituals. The artifact assemblage largely mirrors non-elite contexts and customs. Tamarindito Structure 5PS-12 attests to termination rituals as a ritual practice shared throughout Classic Maya society. Its specific characteristics manifest a discourse of social differentiation.

Eberling, Bo [135] see Harmsen, Hans

Ebersole, Justin [202] see Kelly, Sophia

Ebert, Claire (University of Pittsburgh), Julie Hoggarth (Baylor University), Kirsten Green (University of Montana), Carolyn Freiwald (University of Mississippi) and Jaime Awe (Northern Arizona University)

The Stable Isotope Ecology of Agriculture in the Eastern Maya Lowlands from the Preclassic through Colonial Periods

The reconstructions of subsistence strategies using stable isotope analyses is integral to understanding the role of maize agriculture in the development and decline of ancient Maya society. Here we present stable carbon, nitrogen, and sulphur isotope data from over 230 radiocarbon dated human skeletal remains from western Belize dating from the Preclassic through Colonial periods (~1000 BC-AD 1700). Stable isotope data are also compared to paleoclimate proxy records to interpret the climatic contexts for changing agricultural practices. Results indicate that the Preclassic (1000 BC-AD 300) Maya of western Belize had diverse diets incorporating both maize and wild foods, which may have promoted resilience in the face of social reorganization and changing ecological systems at the end of the Preclassic period. During the Classic period (AD 300–900/1000), inter-individual isotopic variations indicate that high-status individuals had a narrow and highly specialized maize-based diet, which may have created a more vulnerable socio-economic system that disintegrated due in part to drought conditions during the Terminal Classic period. While maize continued to be a dietary staple through the Postclassic and Colonial periods, agricultural systems were impacted by severe multi-year droughts that resulted in high levels of mortality and migration across the Yucatán Peninsula.

Eberwein, Ann (University of Wisconsin—Milwaukee)

An Examination of Circum-Alpine Lake Dwelling Botanicals at the Milwaukee Public Museum

The lake dwelling sites of circum-Alpine Europe were discovered by the archaeological community in the mid-19th century and their artifacts were dispersed to museum collections in the United States and Europe. The Milwaukee Public Museum houses one such collection, which includes zoological material, textile fragments, tools, and carbonized botanicals and food. This paper focuses on the collection of plants and food, which come from Robenhausen, a lake-dwelling site south of Zurich. In studying this collection, there are a variety of factors that preclude traditional paleoethnobotanical methods. First, the protocol for handling carbonized botanicals from waterlogged sites is to maintain their moisture content, which is an impossibility in the collection. In addition, since these excavations were carried out in the 19th century, artifacts were removed from the site without regard for stratigraphy and excavations were funded through the sale of Lake Dwelling objects, making quantification of these assemblages impossible. This paper examines the Milwaukee Public Museum’s collection of botanical and food remains, given the limitations inherent in the study of waterlogged carbonized material excavated before modern paleoethnobotanical methods were developed. In addition, this paper/poster works toward the development of a methodology that can be applied to similar paleoethnobotanical museum collections.

Echavarri, Mikhail (University of Washington) and Stephen Acabado (University of California Los Angeles)

Localizing the Narrative of Spanish Colonization in the Philippines

The Spanish conquest of the Philippines consolidated the islands into a single political entity and subjected its diverse peoples to homogenizing colonial policies. However, indigenous responses to conquest were wide-ranging, which depended on the political and economic conditions of particular regions. To determine local patterns of responses to conquest, the Ifugao Archaeological Project (IAP) and the Bicol Archaeological Project (BAP) are working to produce localized archaeologies and histories to construct a Philippine-wide archaeology of colonialism. The IAP refrutes dominant historical narratives surrounding the antiquity and nature of the highland Ifugao and their rice terraces. Rather than a people isolated from the dominant historical narratives surrounding the antiquity and nature of the highland Ifugao and their rice terraces, the IAP findings show that the Ifugao mobilized behind a concerted economic, political, and environmental restructuring as a pericolonial response to Spanish activities in the lowlands. In a similar vein, the BAP revisits historical narratives concerning the conquest of lowland Filipino groups. Informed by our work in the highlands, these archaeological investigations explore the under-documented indigenous experience surrounding Philippine-Hispanic churches and the early introduction of Spanish Catholicism.

Eche Vega, J. Eduardo (Universidad Nacional de Trujillo) and Jose Peña (University of South Florida)

La subsistencia en el sitio de El Campanario, Valle de Huarmey

La obtención de alimentos es quizás la función de elemental prioridad que el poblador andino de la costa peruana haya tenido que afrontar desde sus inicios como sociedad pre-industrial. La subsistencia como mecanismo para el autoabastecimiento de alimentos ha llevado a las sociedades complejas a innovar ideas, tecnologías, redes de intercambio para asegurar una sobrevivencia compleja. No obstante, los diferentes aspectos tanto ambientales como sociales, políticos y económicos permitieron a estas sociedades de la costa peruana lograr cambios significativos en su dieta. Las excavaciones realizadas en el sitio El Campanario están ofreciendo nuevos datos en el comportamiento domestico para la obtención de productos. Esta sociedad compleja, Casma (700–1400D.C), quizá haya logrado desarrollar a nivel familiar pequeñas “interrelaciones” para su subsistencia. En El Campanario, se ha logrado identificar restos de algodón, corontas de maíz, semillas diversas, restos óseos de guachoníos, restos óseos de peces, así como restos de redes de pescar. Qué tipos de actividades de subsistencia desarrollaron los pobladores de El Campanario. Qué tipo de estrategias de producción, de extracción o de intercambio realizaron.
Eckersley, Jaclyn (Brigham Young University)

The Pottery of Beef Basin and Its Cultural Implications

I present my completed thesis research hypothesizing that the chronology and culture of the prehistoric occupation in Beef Basin is reflected in ceramics. Beef Basin is located west of Montecello, Utah and south of Canyonlands National Park. It is located within the fluid boundary space between the Ancestral Puebloan and Fremont archaeological cultures. Although there has been a surge of recent research in the north periphery of the Ancestral Puebloan area, recent research in Beef Basin remains sparse. My research provides the first in-depth analysis, including neutron activation analysis, of ceramics from this region. My data set includes ceramics analyzed in the field as well as from the archaeological collection at the Natural History Museum of Utah. I discuss the results of my ceramic and architectural analysis within the context of the late Pueblo II period Chaco proliferation.

Eckersley, Jaclyn [68] see Seary, Michael

Eckert, Suzanne (Arizona State Museum, RPA) and Deborah Huntley (Tetra Tech)

At a Crossroads: 300 years of Pottery Production and Exchange at Goat Spring Pueblo, NM

The Goat Spring Archaeology Project explores late Pueblo period (A.D. 1300—1680) cultural continuity and transformation in south-central New Mexico. Goat Spring Pueblo was occupied periodically: initially during a period of demographic reorganization and expansion of regional networks in the 1300s, again during the early Spanish Colonial period, and possibly during the Pueblo Revolt of 1680. This highland village was strategically located along the trail connecting Western Pueblo and Rio Abajo villages. Petrographic analysis of decorated and undecorated sherds from Goat Spring Pueblo sheds light on local identities, ritual practices, and participation in regional networks.

Eckert, Suzanne [287] see Huntley, Deborah

Edgar, Heather [306] see Marquardt, William

Edinborough, Kevan [29] see Schauer, Peter

Edinborough, Marija (University College London) and Kevan Edinborough (University College London)

Cranial and Dental Pathologies in Mesolithic-Neolithic Inhabitants of the Danube Gorges, Serbia

We use anthropological data and a new statistical method to determine if there is a significant change to the health of people found in the Danube Gorges, Serbia (c. 9500–5500 BC), following the arrival of the Neolithic. A gross anatomical study of porotic hyperostosis and cribra orbitalia was undertaken on 113 individuals. The results show a high prevalence of porotic hyperostosis (89%) and a lower prevalence of cribra orbitalia (13%). 1308 teeth deriving from 89 individuals were examined for rate of tooth wear, caries, antemortem tooth loss and periapical lesions. Prevalence of caries increased after the Neolithic transition (6% vs. 10%). Whilst poor sanitation and various nutritional factors are probable causes of cranial pathologies, dietary practices and use of “teeth as tools” may have adversely affected dentitions of the observed individuals. Despite these new findings, rigorous statistical testing does not show a significant difference between adverse health indicators before or after the Mesolithic-Neolithic transition.

Chair

Edwards, Alexandra (University of Georgia), Robert Speakman (University of Georgia), Alice Hunt (University of Georgia), David Thomas (American Museum of Natural History) and Anna Semon (American Museum of Natural History)

Lead Isotope Analysis of Bronze Bells from Spanish Colonization Era

This study focuses on using analytical techniques, such as Multi-collector inductively coupled plasma mass spectrometry (MC-ICP-MS) and X-ray Florescence (XRF), to determine lead isotope levels of bronze bells from the Spanish colonization era within South Carolina and New Mexico. These values are compared both against one another geographically and against ore isotopic data within regional and possible imported geographic regions. The goal is to both discern whether these bells are locally sourced and manufactured or imported from Spain, and to create a baseline for isotopic values within the area. Preliminary studies using XRF against ores have shown that the bells recovered have been both a mix of locally sourced and imports from Spain.

Edwards, Briece (Confederated Tribes of Grand Ronde)

Privileged Knowledge and Perspectives: Tribal Archaeology of, by, and for a Community in Oregon

Today, the increased involvement of Tribes in cultural resources and historic preservation has resulted in culturally specific understanding and knowledge being integrated into the shared heritage of place. This emerging shift toward Tribal inclusion in policies and understanding is also reflective in Tribal inclusion of archaeological practice and methods for reconnecting with place and practice. For the past five years The Confederated Tribes of Grand Ronde, has utilized archaeological methods in conjunction of traditional knowledge to re-connect with places of significance and bring cultural practice back to the landscape from which it has been absent for 150 years. This presentation with discuss the general policies the Tribe operates within, the perspectives of archaeological practice held in community, and the on-the-ground results case examples.

Discussant

Edwards, Briece [114] see Dewan, Eve

Edwards, Kyle (University of Virginia)

Evaluating the Environmental Impacts of Colonial Settlement: A Palynological Study of La Cienega, New Mexico

Using palynological data, this project attempts to contextualize the ecological impacts of Spanish settlement and land-use practices at LA 20,000 within a broader discussion of the long-term environmental history of La Cienega, New Mexico. This is essential because La Cienega has a deep and complicated settlement history that includes Puebloan, Spanish, and Anglo-American occupations. As a result, the ecological relationships created during initial colonial settlement must be considered in dialogue with pre-existing anthropogenic landscapes as well as subsequent environmental change. The data for this project come from a single sediment core that provides a 600-year history of La Cienega. Analyses were conducted by identifying zones within the pollen spectra and applying linear models, principal component analysis, and hierarchical clustering to verify trends within pollen assemblages. Ultimately, the results illustrate clear changes within local plant communities corresponding to Spanish settlement and long-term environmental trends not visible in site-specific samples. More pronounced environmental changes occurred in the 18th and 19th centuries, suggesting the impacts of colonial population growth and increased grazing. Moving forward, these results set the stage for further comparative palynological studies at LA 20,000 and show the efficacy of statistical analyses for identifying nuances in pollen data.
Corridors of Conquest: The Nasca Headwaters during the Middle Horizon

Global studies of ancient imperialism are beginning to focus on the importance of communication corridors (roads, canals, waterways, etc.) in the origins, formation, and expansion of empires. As the number of such corridors increase and intertwine, a network is formed on the landscape that many past empires, including—we believe—the Wari, augmented with considerable imperial investment. By constraining the number of reasonable overland routes, mountainous terrain can concentrate such imperial infrastructure along those natural corridors that simultaneously advance imperial interests (e.g., connecting allied or conquered territories while isolating others) and are suitable to the type of travel (e.g., messengers, trade caravans, armies, etc.) required to meet particular administrative, political, or economic needs. This paper reports recent results from continued research on the Wari presence in the headwaters region of the Nasca drainage in southern Ayacucho and interrogates these data through the lens of network interaction.

Maize’s Role in the Diets of Late Prehistoric People Living in the Prairie Peninsula

Population aggregation and shifts in material culture of the Late Prehistoric Eastern Woodlands (AD900–1100) has often been linked to the increase in the importance of maize in the human diet. In the Midwest, the development of distinct contemporaneous archaeological cultures (e.g., Oneota, Langford and Middle Mississippian) has often been connected to assumed differences in maize consumption. A commonly used model is that increased complexity in social structures result from, and/or are required for, increased production and consumption of maize. However, most comparisons among Late Prehistoric groups in Illinois and Wisconsin have relied on incompatible or incomplete datasets, or were of limited geographic scope. This paper applies the Canine Surrogacy Approach to add isotopic data about dietary profiles from Late Prehistoric sites across northern Illinois and southern Wisconsin. Coupled previously published data, a more nuanced pattern of the relationships among maize agriculture, political complexity, economic structures and social institutions emerges.

Fluorescence Applied to Modern Carnivore Excrements. A Reference Collection for Archaeological Deposits

Traditionally, coprolite identification in archaeology has been limited to hyenids, the most well-preserved and recognizable fossilized faeces, although non-hyena carnivore coprolites are also present in some Pleistocene deposits displaying a wide range of morphological variation (e.g., elongate, spherical, globular, sub-cylindrical, oval, tubular). Common morphocryptic characteristics of these different excrements are the appearance of an amorphous phosphatic, optically isotropic and, a highly autofluorescent matrix, all of them related with bone ingestion and its fossilization. Here we present preliminary results from an experimental application of fluorescence techniques to measure wavelength indexes in thin section samples from a variety of different modern carnivore excrements—canis, felis, and ursids—. The aim of this experiment is to test discrimination of proper faecal features from phosphatic aggregates and, to a greater extent, to help for a better recognition and identification of archaeological carnivore coprolites, as identification of non-hyena carnivore coprolites in the fossil register is vital for improving palaeoenvironmental and landscape reconstruction.

Sediment Geochemistry and Household Spatial Analysis: Social Organization and Housepit Floors from Three Millennia of Occupation at the Slocan Narrows Site, Interior Pacific Northwest

House floors in archaeological contexts often lack the density of artifacts and in situ placement to be able to fully reconstruct the spatial organization of activities. Geochemical analyses of sediments provide an alternative line of evidence for understanding household organization and potentially changing social systems. This study presents geochemical analyses of living floors from several pithouses at the Slocan Narrows site in the Upper Columbia river area of interior British Columbia. In order to understand the spatial organization of activities in these dwellings, we use pXRF and EA-
INDIVIDUAL ABSTRACTS OF THE SAA 83RD ANNUAL MEETING

IRMS analyses of sediment samples to measure element concentrations and determine carbon and nitrogen ratios respectively. Our sample strategy targeted multiple housepits of varying size that were occupied throughout the site’s history, making Slocan Narrows an ideal site to study household organization change through time. This study expands the methodological toolkit for reconstructing household organization and contributes more broadly to understanding social organization in prehistoric villages.

Elgerud, Lucia (University of Tennessee), Hugh Tuller (University of Tennessee/DPAA) and Wilfred Komakech (University of Tennessee) [282] Displacement and Burials in Wartime Acholiland; Archaeological Surveying and Ethnographic Research in Northern Uganda
A multi-subfield anthropological research team from the University of Tennessee Knoxville has been conducting fieldwork in Acholiland since 2014 in order to analyze how improper burials are affecting the cultural and geospatial reality of post-war Northern Uganda. The project has primarily involved ethnographic research; however, archaeological surveying was introduced in 2016 for the purpose of locating and documenting wartime burials. The concerned burials are related to the 1987 to 2006 war between the Ugandan Government and the Lord’s Resistance Army (LRA) rebels in which the local tribal population, the Acholi people, were subject to attacks from both sides during the war. Many civilian wartime burials are located in Internally Displaced Person’s (IDP) camps, mass graves, or as skeletal surface scatters throughout the landscape. These forms of burials constitute a violation of traditional Acholi practices, which require graves to be placed on ancestral land in individual grave plots. Fieldwork conducted links the burials to spiritual disturbances as well as subsistence impediments within Acholi communities. Archaeological surveying provides evidence of the displacements and the violence committed against the Acholi during the war and survey reports may assist in establishing the location of burials for future exhumation and repatriation to ancestral lands.

Elia, Ricardo [222] see Perez-Juez, Amalia

Ellenberger, Katharine (Binghamton University) [168] Teaching the Possibilities and Politics of Digital Artifact Representations using Virtual Reality and 3D Printing
When teaching about preservation, it can be difficult to communicate the options and ethical dilemmas that inform principles of archaeological ethics. The message many members of the public get from brief exposure to digital records and virtual models often adds to the challenge, leaving them with impression that these are viable alternatives to physical site preservation. I propose employing evidence-based teaching practices to create public and university lessons which result in a properly contextualized understanding of technology as a preservation tool. In this paper I describe a hands-on guest lecture in an undergraduate course where I employ experiential learning pedagogy to cultivate students’ observation skills and critical thinking about virtual models in archaeology.

Elliott, Daniel (LAMAR Institute) and Michael Seibert (National Park Service) [154] Get the Lead Out! Establishing a Global Database for the Elemental Analysis of Roundball Ammunition
Archaeologists with the LAMAR Institute and the National Park Service collaborated in an ambitious undertaking to characterize the elemental composition of round ball ammunition from early historic sites. Researchers used portable X-ray fluorescence (pXRF) technology to sample the elemental content of over 500 round balls from more than 17 different archaeological sites in eastern North America. These include samples from Native American and Euro-American settlements as well as French and Indian War, Revolutionary War, Indian Wars and War of 1812 sites. These preliminary data demonstrate that Antimony (Sb) and Tin (Sn) are very important elements for measuring differences in round balls. One goal is to elevate the diagnostic value of round ball ammunition so that we can determine where the lead came from, who was firing the bullets, and how access to lead varied over time. The pXRF information shows promise in identifying additives or contaminants introduced and military association. If combined with element data from lead ore sources, baseline information can be developed for comparison among battlefield assemblages and incorporated into a global dataset with the purpose of better understanding the geographic distribution of military supplies and military strategy at macro global and regional levels.

Elliott, Hannah (Binghamton University) [300] Camelid Exploitation at the Middle Horizon Site of Huari
Excavations at Huari, the urban center of the Wari state in Peru’s Ayacucho Basin, have uncovered well preserved faunal remains, with the majority belonging to native camelid species. While knowledge pertaining to camelid exploitation by the Wari people has been enhanced in recent years through excavations at sites such as Conchopata, little is known about camelid usage at the site of Huari. In this paper, I use osteometric analysis to identify specimens to the species level and to examine the distribution of camelid species using the faunal remains recovered during the 2017 excavations of Patipampa, the domestic sector located within the Huari capital and occupied during the Middle Horizon (AD 500–1000). The results of this preliminary analysis provide valuable insight regarding the usage and management of multiple native camelid species at Patipampa, shedding light on Wari economic and subsistence practices.

Elliott, Rita (The LAMAR Institute) [281] Discussant

Elliott Smith, Rosemary [172] see McFarland, Christopher

Ellis, Christopher [120] see Lothrop, Jonathan

Ellis, Erle (University of Maryland, Baltimore County) [161] Evolution of the Anthropocene
Why did humans, unlike any other multicellular species in the history of the Earth, gain the capacity to shift Earth into a new epoch of geologic time, the Anthropocene? Here, a general causal theory, sociocultural niche construction, is presented to explain long-term changes in Earth’s ecology driven by societal dynamics across human generational time through sociocultural evolution of subsistence regimes based on cooperative ecosystem engineering, social specialization, non-kin exchange and energy substitution. It is these unprecedented anthropocological change processes that have enabled both the long-term upscaling of human societies and their unprecedented transformation of Earth. Regime shifts in human sociocultural niche construction over thousands of years can explain the sustained transformative effects of human societies on the Earth system. A global archaeology of the Anthropocene, combining both empirical and modelling approaches to reconstruct and examine the mechanisms underlying long-term evolutionary
regime shifts in sociocultural niche construction, are the key to gaining a deeper scientific understanding of both the past and future prospects for humanity and nonhuman nature.

Ellis, Grace, Anna Browne Ribeiro and Filippo Stampanoni
[240] Ancient Landscapes of Amazonia: A Study of Pre-Colonial Processes and Contemporary Use at Macurany, Brazil
We analyze settlement organization and landscape modification at Macurany, a pre-Colonial terra preta site on the Middle Amazon River in Parintins, Brazil, within local and regional contexts. Pre-colonial land modifications do the contemporary landscapes of Amazonia. Many such landscape features, such as anthrosols, elevated platforms, mounds, ramps, and riverine ports, are used today by contemporary inhabitants of Amazonia. New data gathered at Macurany reveals that ancient Amerindians altered the local landscape, creating ports and anthrosols. Topographic data sheds light on pre-colonial human-environment interactions and settlement organization at Macurany. Similarities with sites in the Central Amazon and Lower Amazon regions include anthrosols and ports, and possibly ring middens; Macurany is unique in the frequency and size of ports. Preliminary results suggest site organization was decentralized due to the spatial distribution, frequency, and size of the ports and depth and distribution of terra preta. Today, these ancient landscape features are managed and used by rural smallholders; although they may not knowingly engage with the past through these actions, they constitute a way of interacting with the material remains of the past. This analysis contributes toward understanding of pre-colonial land modification and contemporary use of ancient landscape features in Amazonia.

Ellis, Leigh Anne (The Center for Digital Antiquity) and Francis McManamon (The Center for Digital Antiquity)
[231] Sharing Curation Expertise and Space for Digital Archaeological Data
Archaeologists are busy all the time. Often stretching to meet a variety of professional obligations. CRM and government agency archaeologists are among the most stretched given the different directions that pull upon their professional lives. Scholarly pursuits; administrative, bureaucratic, regulatory, and public outreach responsibilities related to physical sites and collections, easily fill or over-fill their schedules. Now the care and curation of digital data adds to the piling up of responsibilities. Digital data and the technical tools that create and enable its use present many opportunities for research and resource management. Digital technology makes data easily and widely accessible, sharing information, and enabling the creation of new interpretations and increase in overall knowledge. But, digital data must be curated or it will be lost. Digital curation doesn’t just happen, it requires attention, special expertise, and long-term commitment to the curation enterprise. The Digital Archaeological Record (tDAR) is a repository where individual archaeologists, agencies, and organizations deposit their data (e.g., documents, images, data sets, and more). Once deposited in tDAR the data are curated by digital archival specialists who focus on ensuring the data are protected, made available as the depositor determines, and kept available for use and re-use.

Ellis, Leigh Anne [172] see McManamon, Francis

Ellsyon, Laura (Washington State University), Tim A. Kohler (Washington State University) and Catherine Cameron (University of Colorado, Boulder)
[27] Quantifying Inequality among Ancestral Pueblo Households
Recent studies of household inequality in the central Mesa Verde region (CMV) and Chaco Canyon indicate that the degree of wealth inequality among ancestral Pueblo households remained relatively low in the CMV even as it increased dramatically in Chaco from the mid-800s through the early 1000s, based on Gini coefficients calculated on household floor area as a proxy for wealth. Beginning in the late A.D. 1000s, however, Gini coefficients increased among CMV households as well, reaching values as high as those for Chaco Canyon, and above the median for a recently compiled worldwide sample of prehistoric agriculturalists. Here we expand this analysis by calculating Gini coefficients through time for households in the middle San Juan and add some comparative ethnographic data from the Hopi pueblo of Orayvi (late 19th/early 20th century).

Elquist, Ora (Public Archaeology Laboratory, Inc.)
[294] A Woman's Relouch: Lithic Recycling at the Strow's Folly Site (Locus 3), Wareham, Massachusetts
Locus 3 of the Strow's Folly Site (19-PL-1161) in Wareham, Massachusetts represents a small, temporary camp. Archaeological investigations at the site resulted in the recovery of an unusual artifact assemblage believed to be associated with a single component dating to the Middle Woodland Period. Evidence for hunting was notably absent, and the presence of processing tools and relatively dense deposits of ceramics indicate that women were present at the site. Domestic activities of a more residential nature. Previous studies indicate that lithic assemblages associated with women's activities are oriented towards use of processing tools and the production of expedient flake tools. The site assemblage does not contain expedient tool forms, but does contain a number of reworked older diagnostic tools suggestive of a strategy of expedient tool production. Such tool recycling may be an indicator of women's activities that are otherwise less archaeologically "visible" at smaller, more ephemeral temporary campsites.

[294] Chair

Elquist, Ora [294] see Ort, Jennifer

Elsbury-Orris, Britney
[188] A Faunal Analysis of the Kirshner Site (36WM213)
The Kirshner Site (36WM213) is a multi-component site in South Huntington township, Westmoreland county, Pennsylvania that contains two Middle Monongahela villages. Relatively little is known about Monongahela use of animals. Fortunately, good faunal preservation has made zooarchaeological analyses of materials from this site possible. Identifying and analyzing these faunal remains with respect to taxa and skeletal elements, as well as human and animal modifications, provides important new information. The distribution of faunal remains across the features of the site and its two components has been examined, as they have implications for relationships between the site's inhabitants and their environment. These data provide insights into the nature of this site and the activities of its occupants. Comparisons with other faunal studies, like those done on zooarchaeological materials from other Middle Monongahela sites, including the Johnston Site (36N2) and the Hatfield Site (36WH678), further expands the understanding of the Kirshner Site and the Middle Monongahela tradition.

Elston, Robert (University of Nevada, Reno—Dept. of Anthropology), Gloria Brown (California State University, Sacramento), Ryan Bradshaw (California State University, Sacramento), Martijn Kuypers (California State University, Sacramento) and David Zeannah (California State University, Sacramento)
[92] Evaluating a Stratified, Prearchaic, Open-Air Site in Grass Valley, Nevada
Current views of the Prearchaic draw heavily from investigations of sites near pluvial lakes in the eastern and western Great Basin. The record from the Central Great Basin remains impoverished, largely due to the limited number of stratified archaeological sites containing well preserved material suitable for faunal analysis and radiocarbon dating. Recent investigations of an open-air site (26La4343) along the northern shore of Pleistocene Lake Gilbert in Grass Valley, revealed a buried deposit with preserved organic material, obsidian artifacts and Prearchaic time-markers. Here we report on ongoing investigations examining the stratigraphy, chronology, assemblage, and faunal remains recovered from the site. While faunal remains reflect
procurement of a broad array of prey including waterfowl, large mammal hunting was clearly an important activity. The site appears to represent at least two spatially discrete, single component campsites positioned to facilitate an intercept hunting strategy, as well as access to wetland habitats.

Elston, Robert [92] see Zeanah, David

Elvir, Wilmer (Universidad Nacional Autónoma de Honduras), Ashley Sharpe (Smithsonian Tropical Research Institute) and Whitney A. Goodwin (Southern Methodist University)

Relaciones Sociales y Medioambientales en Selin Farm a través del Análisis de su Conjunto Arqueomalacológico

El motivo al cual se llevó acabo la presente tesis es para adquirir conocimientos sobre las interacciones humanas con su medioambiente de las sociedades prehispánicas que vivieron en el Noreste de Honduras, por medio de un análisis de conchas de moluscos excavadas en el año 2016. Estas investigaciones son parte del Proyecto Arqueológico Regional Islas de la Bahía (PARIB). El material arqueomalacológico proviene del sitio arqueológico Selin Farm, ubicado en el departamento de Colón en las cercanías de la ciudad de Trujillo. Este sitio consiste de aproximadamente 22 montículos levemente organizados alrededor de una plaza central y de acuerdo a estudios previos se determinó que el sitio fue ocupado continuamente desde el 300 al 1000 d.C. Los montículos están compuestos en su mayoría de cerámica y conchas de moluscos, con algunos restos óseos y líticos. Se recuperaron 73 especies de bivalvos y gasterópodos y su análisis sugiere que los habitantes del sitio tenían un alto conocimiento de diversos ambientes a través del tiempo. La mayor parte de las presentes especies fueron explotadas para su consumo y en algunos casos el material adquirió un valor social sobre sus desechos orgánicos.

Emerson, Patricia (Minnesota Historical Society) and Nancy Hoffman (Minnesota Historical Society)

Technical, Political and Social Issues in Archaeological Collections Data Management

Managing collections means ensuring the data about them are useful, available, and accurate. In addition to the technical aspects of data management, there are layers of political and social structure that direct the construction and use of collections data.

The Minnesota Historical Society employs a set of data standards that allows us to gather electronic cataloging data from a wide community of archaeology researchers depositing collections at MNHS. Though met with initial resistance, these standards have facilitated publication in Open Context as linked open data. Furthermore, institutional discussions concerning Creative Commons licensing and the cultural sensitivity of collections data were precipitated by publication.

Similarly, as Minnesota has prepared to roll out an electronic sites database, much of the development has dealt with defining standards for terminology and classification, highlighting the role of social agreement in data management. Establishing the technical requirements was challenging. Finding a way to accurately represent existing data in a useful, searchable manner has been equally challenging.

Emerson, Patricia [74] see Scott Cummings, Linda

Emery, Kitty (FL Museum of Natural History, UF), Rob Guralnick (FL Museum of Natural History, UF), Michelle LeFebvre (FL Museum of Natural History, UF), Laura Brenskelle (FL Museum of Natural History, UF) and Sarah Whitcher Kansa (Alexandria Archive, Open Context)

ZooArchNet: Linking Zooarchaeological Data to Archaeological and Biodiversity Information for Big-Data Archaeological Research

Re-use of large zooarchaeological datasets offers new ways of tackling the grand challenges of archaeological science. But big-data research requires integrating multiple zooarchaeological datasets while maintaining the biological and archaeological details needed to contextualize the faunal information. Accessing and combining these data remains difficult despite the increasing use of open-access archaeological data publishers and archiving services, and the open-access, interoperable biological data of the global biodiversity data network (GBIF and associated worldwide nodes). We do not yet have a means to effectively integrate data among zooarchaeological, biological, and archaeological databases.

Here, we present ZooArchNet—a bridge between zooarchaeological data and the biological and archaeological open-access networks that will allow us to contribute meaningfully to big-data archaeological research. ZooArchNet is a collaborative project that spans expertise in zooarchaeology, archaeoinformatics, and biodiversity informatics and that links zooarchaeological data to the biodiversity distributed data network and the many publishers and archives of the developing and challenges of such a system based on our current work combining several millennia of Florida zooarchaeological data with Florida biodiversity data from the biodiversity network (represented by VertNet) and site-based archaeological context through links with archaeoinformatics (represented by Open Context).

[316] Discussant

Emery, Kitty [217] see Sharpe, Ashley

Emmanuel, Idiema [198] see Chrizt, Kendra

Emmerich Kamper, Theresa (University of Exeter)

Hide Processing in Prehistory: An Experimental Approach to Prehistoric Tanning Technologies

The importance of skin processing technologies, in the history and dispersal of humankind around the planet cannot be overstated. This presentation outlines a systematic analysis methodology targeted at this specific material type, with the goal of determining the tanning technologies in use during prehistory, from extant archaeologically recovered processed skin objects. The methodology is a product of macroscopic and microscopic observations of a sample reference collection containing over 200 samples. Which were used to produce a database of defining characteristics and tendencies for each of six tannage types: wet and dry scrape brain tan, bark tan, alum tan, urine tan and rawhide. The sample collection is made up of twenty-two economically important species from both Europe and North America, as well as a collection of well used clothing and utilitarian items, made from traditionally processed skins. This research has demonstrated that archaeologically preserved objects made from processed skin can provide information about the tannage technologies in use prehistorically, as well as more detailed information such as manufacturing sequences and the conditions of use to which the object was subjected.

Engel, Paul [221] see Whitley, Thomas

Engelbrecht, William (Buffalo State College)

Iroquoian Chunky

Iroquoians played the hoop and pole game in Historic times, but there are no descriptions of Iroquoians playing chunky, a variant of hoop and pole that makes use of a rolled stone disk. This has led to a widespread belief that chunky was not played by Iroquoians. However, a symmetrical stone disk was recovered from the Eaton site, a mid-sixteenth century Erie village. Other researchers report stone disks from the following groups: Neutral (Bill Fox), Erie (Joshua Kwoka), Seneca (Martha Sempowski), Cayuga (Kathleen Allen), Mohawk (Wayne Lenig), and Susquehannock (Jim Herbstritt).
While none of these disks resemble the highly polished discoidal associations with Cahokia and related Mississippian centers, stone disks from Iroquoian villages could have been used in the game of chunky. The context in which chunky may have been played and its related symbolism is discussed.

Englehardt, Joshua (El Colegio de Michoacan) and Michael Carrasco (Florida State University)

Transformation of the Gods: Symmetry and the Construction of Mesoamerican Deity Systems in the Middle Formative

This paper explores theoretical and methodological issues associated with the etic conceptualization of Mesoamerican deity systems and the identification of individual supernaturals in cross-cultural contexts. It critically focuses on previous classificatory systems of Olmec deities. Iconographers often identify individual deities on the basis of defining attributes or material accoutrements, frequently extending these identifications across contexts (as in Covarrubias’ famous “evolution of the Mesoamerican rain god”). However, building in part on Eva Hunt’s work, we find that the conflations or sharing of attributes among Formative period entities casts doubt on the validity of classificatory schemes that fail to adequately consider the fluidity of deities or their relationship to that which they personify. This “conceptual overlap” in Olmec art may lead to confusion, misidentification, or overly simplistic interpretations. It is argued that the construction of deity systems should consider such conceptual overlaps in representational art, in order to more fully unpack the multiple, non-hierarchical levels of significance imbricated in images of gods and supernaturals, as well as the dynamism of such representations within larger symbolic complexes. A range of data from various contexts are considered in an effort to evaluate the utility of cross-cultural analogies in comparative iconography.

Discussant

Enloe, James (University of Iowa)

Spatial Analysis in the Woodland: Foraging Behavior in Sedentary Agricultural Societies

Spatial analysis has the potential to yield substantial evidence about the organization of economic and social interactions of prehistoric archaeological sites. There is a growing body of ethnoarchaeological research that allows robust interpretations of spatial patterning in the open-air campsites of mobile peoples. The very fact that such sites may represent short-term, low density occupations means that the configuration of labor and activities may actually be clearer than in longer-term open-air or architectural sites, where accumulated activities create more ambiguous palimpsests. The content and configuration of occupied surfaces offer not only information about activities carried out there, but also the potential for interpreting the role of site usage within a larger settlement pattern. Even otherwise sedentary agricultural societies may have mobile components that fulfill other roles in their settlement and subsistence systems. An example from Woodpecker Cave, a Late Woodland rockshelter in Iowa, can be contrasted with the Paleolithic open-air sites of Pincevent and Verberie to give insight on the commonalities of behaviors and adaptive poses of site occupants identified through spatial analysis.

Ensor, Bradley (Eastern Michigan University)

The Western Chontalpa: What’s in the Archaeological “Black Hole” of the Mesoamerican Gulf Coast?

The Mesoamerican Gulf Coast figures prominently in grand schemes of interregional population interactions from Olmec to contact eras. However, most research on exchange, migrations, or identities relies on samples from Southern Veracruz, the Usumacinta, and the southern Isthmus without considering the vast Chontalpa in-between. This paper synthesizes new and old data on sites, intrasite spatial organization, and material culture from the Mezcalapa Delta for a synopsis on prehispanic settlement history, settlement patterns, and interpretations on intra- and interregional identities in the Western Chontalpa. These sources suggest low populations during Olmec times, growth in the Late Formative, a hiatus in the Early Classic, and significant growth in the Middle-Late Classic when the first states appeared. The greatest political centralization was in the coastal-levée transition zone, without significant incorporation in trade networks, suggesting a tributary economy focused on diverse local resources. The people of the region cannot be viewed as Olmec, Chichimeca, Maya, Nahua or their subjects. Instead, changing local to interregional layers of cultural identities are interpreted for Formative to Late Classic times, which in the latter were variably negotiated by class. Implications on modeling broader patterns of exchange/interaction spheres in the Gulf Coast are discussed.

Eppich, Keith (Collin College)

The Function of Ceramic Analysis in the Maya Lowlands

Why study ceramics at all? What is the point of analyzing hundreds and thousands of small, broken pieces of pottery? This paper explores these, and other questions, within the context of Classic Maya civilization. Too often, it seems, ceramic analysis is used as a loose chronological framework, used solely to construct broad frameworks of relative dating. These frameworks are then applied to archaeological assemblages, placing them within chronologically based “ceramic complexes” and geographically bounded “ceramic spheres.” This model of ceramic analysis ends. This paper argues that this is the point where real ceramic analysis should begin. Ceramic complexes should be broken down into distinct centuries and even individual decades, if possible. Ceramic analysis can be used to create absolute chronologies. Ceramic spheres can be subdivided, revealing the exchange of material culture between individual cities, communities, and households. Thus, ceramic analysis can shed significant light on cultural, social, economic, and political ties on such material exchanges. Such analysis can be shown by examining the recent work at El Perú-Waka’, where internal social, political, and economic ties are shown, within the context of an absolute chronology.

Eppich, Keith [80] see Menéndez, Elsa

Erb-Satullo, Nathaniel (Harvard University)

Early Iron Metallurgy in the Caucasus: Filling in a Technological “Missing Link”

In the study of technological transformations, there is often much discussion of how innovations are conditioned by earlier systems of technical knowledge. Identification of transitional features is often challenging, however, particularly for questions about the origins of iron smelting and its relationship with copper-base metallurgy. This paper discusses some unusual technological features in iron metallurgical debris (circa 8th-6th c. BC)
from a fortified hilltop site in the Caucasus, shedding light on the early development of iron technology. Macroscopically and microscopically, the slags are in most respects classic iron smelting slags. Larger fragments show the classic planoconvex shape of smithing hearths bottoms, and the slag microstructures are dominated by wüstite (FeO) and small particles of metallic iron. However, analysis of metal inclusions trapped within these slags shows that they contain small amounts of copper and arsenic. These results suggest that the iron forged in the workshop was smelted from the oxidized upper zone (gossan) of a copper-bearing polymetallic deposit, if so, this would provide the first direct evidence of a much-discussed theory that iron smelting emerged from experimentation with copper ore deposits, linking the invention of iron with earlier copper-base metallurgical traditions.

Erek, Cevdet Merih [41] see Yaman, Ifran

Eren, Metin (Kent State University), Brian Andrews (Rogers State University), Michelle Bebber (Kent State University), Ashley Rutkoski (Kent State University) and David Meltzer (Southern Methodist University)

[44] Year One of New Excavations at the Paleo Crossing (33ME274) Clovis Site, Ohio: The 2017 Field Season

The Paleo Crossing (33ME274) Clovis site in Northeast Ohio was discovered in 1989, and excavated in the early 1990s. Analysis of the collections over the past 27 years has shed light on Clovis technology, mobility, raw material transport, and forager colonization behavior. Now, armed with several new questions involving the site’s chronology, Clovis tool function, and the possible presence of a Clovis “structure”, we re-opened excavations at the site during June 2017. While more excavations will take place during summer 2018, this presentation serves as an preliminary report on new discoveries at this unique and fascinating Clovis site.

[44] Chair

Erickson, Clark (University of Pennsylvania), Shimon Wdowinski (Florida International University), Jonathan Thayn (Illinois State University), Rex Rowley (Illinois State University) and Jedidiah Dale (University of Pennsylvania)

[116] Flood Regimes, Earthworks, and Water Management in the Domesticated Landscapes of The Bolivian Amazon

Exploitation and control of wetland resources was a major strategy of early sedentary peoples in many areas of the world. In some cases, indigenous knowledge about flood cycles and water dynamics and anthropogenic transformation of waterscapes increased to the point where some wetlands were transformed into domesticated landscapes. Analysis and interpretations of relevant radar (TerraSAR-X, ALOS SAR-X, Sentinel-1), multispectral (Landsat ETM and ETM+, ASTER), DEMs (SRTM, ASTER) satellite and aerial imagery is used map and understand the distribution, volume, and movement of water through anthropogenic landscapes in the Bolivian Amazon. Pre-Columbian peoples built numerous earthworks including raised fields, causeways, canals, fish weirs, and fish ponds within the seasonally inundated savannas and wetlands of the region. Our research attempts to show that these earthworks were created to capture, control, and manage large volumes of water, and as a result could produce, capture, and sequester carbon, aquatic/alluvial organic sediments, and aquatic food resources.

Erickson, Connie, Haagen Klaus (George Mason University), John Clark (Brigham Young University) and Zachary Chase (Brigham Young University)


Spain’s invasion of the Andes initiated a social drama unprecedented in the experience of the Andean natives. Spanish and Spanish-conscripted native chroniclers wrote extensively about Inca pageantry, spectacle, and ritual, and hostile attributed pagan belief to performances they witnessed or heard about. With equal haste, the Spanish appropriated performance as means of introducing and enforcing Christianity. In this paper, I treat performance as the central feature of Andean Colonial transition. Performance may be considered an ephemeral social feature but fortunately, in mortuary performances (dealing with death and treatment of the body); there are many theatrical elements that survive in mortuary contexts (e.g., staging, setting, costumes, make-up, props, and choreography). Archaeology, history, and ethnographic observation together illustrate that performance has alternately established, celebrated, or subverted Andean power relations during hundreds of years. Mortuary performances are especially excellent commentaries about the religious climate of Colonial Peru. I argue that the Colonial Spanish saw performance as evidence of belief and employed performance in the effort to transform pagan belief to Christian belief. Ultimately, communities, religion, and performance itself were transformed; integrated and reintegrated into dynamic personal and public expressions.

Eriksson, Gunilla [16] see Harris, Alison

Erlingsson, Christen (Linnaeus University, Kalmar, Sweden), Bruce Davenport (Newcastle University, Newcastle upon Tyne, United) and Susanne Bollerup Overgaard (Aarhus University, Aarhus, Denmark) (Newcastle University, Newcastle upon Tyne, United) (Newcastle University, Newcastle upon Tyne, United)

[83] Cultural Heritage-Based Reminiscence Sessions in Open-Air Museum Settings to Enhance Well-Being of Persons with Dementia

Background: The 3-year Active Ageing and Heritage in Adult Learning project (2014–17, EU Erasmus+ program) involved five open-air museums in Sweden, Denmark, Norway, UK, and Hungary. Sessions were conducted in venues matching the era of clearest memories for participating older persons with dementia (PwD), e.g., 1940-ties apartment. University researchers (Sweden, UK, & Denmark) evaluated the project. This presentation describes qualitative results.

Objective: To investigate if and how experiences of participating in reminiscence sessions held in open-air museum venues affected wellbeing in PwD.

Method: PwD (n 129) were interviewed individually or in groups. Third-person perspectives were gathered from carers accompanying PwD (n 75), and session facilitators (n 24) using questionnaires that included space for free-text responses. Interviews and free-text responses were analyzed with content analysis.

Results: Both museum venue and object handling stimulated PwD reminiscence. Evidence strongly indicates that PwD wellbeing (denoted e.g., by showing pleasure, humour, creative self-expression, interest, sustained attention, and a sense of connection with others) was generally promoted through participation in museum-based reminiscence sessions.

Conclusion: Museum-based reminiscence sessions were successful for enhancing PwD well-being at the time of the session. Further research is needed to explore and compare long-range effects of sessions.

Ernenwein, Eileen (East Tennessee State University), Jay Franklin (East Tennessee State University) and Nathan Shreve (University of Mississippi)

[241] Cherokee-Spanish Interactions in the Middle Nolichucky Valley, Tennessee, Revealed by Geophysics and Targeted Excavations

The Middle Nolichucky River in northeast Tennessee has been largely overlooked in Mississippian prehistoric narratives, but recent geophysical surveys and archaeological excavations at the Cave Notch site document a mid- to late- 16th century Cherokee Town with evidence of Spanish contact. Our multimethod approach includes sitewide magnetometry and a large portion covered with ground penetrating radar (GPR). Excavation of a house floor unearthed a rich assemblage of glass trade beads and pottery, and was dated to the mid- to late- 16th century. The house had burned rapidly and several pots appear to have been dropped during a hasty abandonment. A probable Spanish arquebus lead shot ball in the roof fall and other contact-era artifacts suggest contact with the Spanish. The site was featured in a documentary film, Secrets of the Nolichucky River, in 2017. A
host of other pre-contact and contact-era sites are known along this stretch of the Nolichucky, one of which is the focus of our current work. Magnetometry, GPR, and electromagnetic induction (EMI) survey at Runion reveal a large village with multiple housing clusters, a large public structure, and possible fortifications. Excavations will take place at Runion this summer.

Ernst, Julie (National Park Service) [280] Discussant

Erny, Grace [201] "Fair Greece, Sad Relic:" Greek Archaeology at the Intersections of Power

In this paper, I address the challenges faced by Classical archaeologists who wish to practice engaged archaeology in Greece. Two aspects of Classical archaeology’s disciplinary history are particularly important for understanding the relationship between Greek archaeology (as practiced by American archaeologists) and modern Greece: first, Greek archaeology’s early and close relationship with the ideology of Hellenism and, second, the ways in which archaeological work in Greece has intersected (or not) with ethnographic studies of Greek communities. I then explore some of the current institutional factors (many of them legacies of the discipline’s trajectory) that either inhibit or fail to actively encourage collaborative archaeological practice in Greece. For archaeological projects supported by U.S. academic institutions, these include the academic position of Greek archaeology within Classics departments and the dismissal of Modern Greek as a legitimate field of study for Classical archaeologists. Finally, I suggest potential future directions for engaged archaeologies of Greece that directly confront this disciplinary legacy. How can Classical archaeologists both avoid uncritically promoting narratives of Classical Greece as the “birthplace of Western civilization” and actively advocate for collaborative practices within an academic power structure that is often unsympathetic to these concerns?

Ervin, Kelly (Washington University St Louis) [156] Parsing out the Pace of Occupation at Poverty Point

Built by hunter-gatherers, the Poverty Point UNESCO World Heritage site is a three-square-kilometer earthwork complex of two massive mounds, several conical and flat-topped mounds, and six elliptical ridges enclosing a 17.4-hectare plaza. The Late Archaic Poverty Point culture (ca. 3800–3000 cal. B.P.) exhibited an unprecedented form and scale of social organization indicated by non-local material measured by the metric and the construction of extraordinary monumental architecture at a scale that surpasses most monuments built by North American agriculturalists. Numerous sociocultural models have proposed explanations for Poverty Point social organization. Previous investigations led some researchers to suggest evidence for a large, socially stratified permanent population where the ridges served as platforms for residential structures. Others claim the data do not support the presence of social hierarchy, year-round occupation, or houses on the ridges. Recent excavations during 2017 were undertaken within the earthen ridge complex. Fundamental goals of the project were to apply modern geoarchaeological techniques to obtain high-resolution stratigraphic and chronologic data for assessing the pace and timing of ridge construction and occupation. This type of geoarchaeological analysis within large monumental earthworks provides necessary information to understand the impact of modern, social and economic organization at Poverty Point.

Ervin, Kelly [291] see Grooms, Seth

Eschbach, Krista (Arizona State University) [271] Casta, Class, or Race? Social Transformations at the Colonial Port of Veracruz

The social structure of colonial New Spain underwent large-scale transformations following the Spanish conquest. Changes in social categories of identification evolved through an interplay between religious and civil administrators—who attempted to control colonial populations—and local social relationships of interpersonal interaction. I examine social relations and changing categories of identification at the colonial Port of Veracruz. Throughout the colonial period, Veracruz served as a central gateway for African slaves entering New Spain. Subsequent biological and cultural mixing with European colonists and native peoples led to a substantial population of people of mixed African descent. Archaeological and historical investigations of Afromestizo neighborhoods provide information on local social reproduction and transformation—such as through the production and consumption of material culture, the use of urban space, and the formal application of social categories. These data provide an opportunity to begin to evaluate the transformation of casta categories, the development of economic classes, and the role of race among pluralistic African descendant communities in an urban setting.

Esdale, Julie (Colorado State University, CEMML) [332] Interdisciplinary Studies at Delta River Overlook Site, a Late Pleistocene to Late Holocene Multicomponent Site in Central Alaska

Recent large-scale excavations at Delta River Overlook in the middle Tanana River basin yielded 12 components dating from the onset of the Younger Dryas (~12,860 cal BP) to the later Holocene (2300 cal yr BP). Well preserved faunal assemblages, including bison, are present in multiple components, with economic transitions evident at ~6000 cal yr BP. Several features and activity areas were analyzed, including ochre-rich processing areas. Over 20,000 lithic items have been analyzed, primarily from the 11,500 and 10,900 cal BP components, indicating multiple lithic reduction behaviors from cobble testing to tool maintenance. We present interpretations of site function, geological context, radiocarbon dating, component delineation, lithic, faunal, and spatial analyses that track technological and subsistence.

Esdale, Julie [177] see Henry, Aureade

Eshelman, Sara [173] see Guderjan, Thomas

Espejel, Claudia [169] Una síntesis de la historia prehispánica de Michoacán

El avance de los estudios arqueológicos realizados hasta el momento permiten delinear ya un panorama general de la historia prehispánica en Michoacán desde aproximadamente 1500 aC hasta 1522 dC. En esta ponencia presentaré una síntesis de dicha historia, vinculando la información de Michoacán a la de otras regiones colindantes con el fin de distinguir los rasgos particulares de diversas zonas pero identificando también las tendencias generales de desarrollo que se dieron a través del tiempo.

Espinoza, Pedro (Ministerio de Cultura del Perú) [42] Continuum cultural, una nueva estrategia de investigación y gestión del patrimonio arqueológico en Lima, Perú

Los cientos de sitios arqueológicos en plena ciudad de Lima así como la inexistencia de una valoración positiva de estos por parte de la comunidad vecina, son un reto para la investigación y gestión del patrimonio arqueológico monumental. Como una alternativa a ello, el proyecto encargado del complejo arqueológico Mateo Salado (en el distrito de Lima), ha venido aplicando desde el 2011 un plan de gestión en cuyo marco se creó la estrategia del Continuum Cultural. Esta es una perspectiva que considera que todas las etapas
PARAGUAYAN PREHISTORIC ARTIST MATERIALS AND LANDSCAPE

The influence of local materials and landscape on Paraguayan prehistoric art is a little-known aspect of Paraguayan prehistory and often overlooked. This paper will examine the use of local materials and landscape features in Paraguayan prehistoric art, focusing on the use of local materials such as stone, clay, and plant materials. It will also discuss the relationship between art and landscape, and how these elements were used to create a sense of place and identity.

SARA C. GÓMEZ

CAROLINA G. GONZALEZ

REGIONAL APPEAL OF SOUTHERN WALLS FROM PRECOLONIAL PERU

The walls of the southern region of Peru have been the subject of much research over the past few decades. However, the significance of these walls and their relationship to the surrounding landscape remains unclear. This paper will explore the regional appeal of these walls and their relationship to the surrounding landscape, focusing on the use of materials and the design of the walls. It will also discuss the role of these walls in shaping the regional identity.

JULIO P. O. HERNÁNDEZ

PALEOLITHIC ANTHROPOLOGY

The study of Paleolithic anthropology is crucial in understanding the development of human societies. This paper will examine the role of Paleolithic anthropology in understanding the development of human societies, focusing on the use of materials and the design of Paleolithic tools. It will also discuss the role of Paleolithic anthropology in shaping the regional identity.

ELIZABETH C. SMITH

MAYA CIVILIZATIONS

The study of Maya civilizations is crucial in understanding the development of Mesoamerican societies. This paper will examine the role of Maya civilizations in understanding the development of Mesoamerican societies, focusing on the use of materials and the design of Maya architecture. It will also discuss the role of Maya civilizations in shaping the regional identity.

CARLOS A. RAMÍREZ

LATINOAMERICAN ART HISTORY

The study of Latinoamerican art history is crucial in understanding the development of Latinoamerican societies. This paper will examine the role of Latinoamerican art history in understanding the development of Latinoamerican societies, focusing on the use of materials and the design of Latinoamerican art. It will also discuss the role of Latinoamerican art history in shaping the regional identity.

SONIA M. GÓMEZ

SUBMERGED LANDSCAPES AND SHIPWRECKS: THE FRACTIONING OF MARINE ARCHAEOLOGY(?)

The study and management of submerged paleolandscapes is an extension of terrestrial prehistoric archaeology, but due to the location of the sites on now submerged lake margins and continental shelves, it is typically lumped into a general category of "underwater" or "marine" archaeology. Marine archaeology has been, and in many ways, still is, strongly associated with shipwrecks. In some ways, the lumping of shipwrecks and submerged landscapes into one category is beneficial, since many of the same tools, methods, and issues affect both submerged landscapes and historic resources. However, key differences are also present in both site distribution (shipwrecks are by nature portable sites) and theoretical approaches to identifying sites and investigating them. While there are clear differences between shipwrecks and submerged landscapes, is there a danger in further fractioning their practitioners? This paper will explore some of the benefits and highlight the pitfalls of treating all inundated sites as "marine archaeology".

Evans, Amanda [84] see Weinstein, Richard

THE PAST, PRESENT AND FUTURE OF ARCHAEOLOGICAL LIDAR: A VIEW FROM SOUTHEAST ASIA

In the last five years multiple campaigns of airborne laser scanning (or lidar) have been conducted by archaeologists over Angkor-period sites in Cambodia and neighbouring countries such as Thailand. Analysis of the lidar data is still underway and will continue for many years both in the lab and on the ground, but some key outcomes have now been published, and it is already clear that the advent of lidar represents an important milestone in the history of archaeological remote sensing. This presentation will locate lidar within the historical context of mapping and surveying the Angkorian world; summarise archaeological lidar projects in Cambodia and beyond that are completed or ongoing; present new tools and techniques that have been developed for analysis and interpretation; and discuss some key limitations and opportunities that arise as a result of the technology. The paper will canvas the potential for new acquisitions and comparative studies across the region in light of new developments in UAV technology, lidar miniaturisation, and the imminent deployment of high-resolution spaceborne lidar systems, and explore how research data might be integrated into global repositories of archaeological topography.

Evans, Damian (French Institute of Asian Studies (EFEO))

SOUTHERN WALLS FROM PRECOLONIAL PERU

The influence of local materials and landscape on Paraguayan prehistoric art is a little-known aspect of Paraguayan prehistory and often overlooked. This paper will examine the use of local materials and landscape features in Paraguayan prehistoric art, focusing on the use of local materials such as stone, clay, and plant materials. It will also discuss the relationship between art and landscape, and how these elements were used to create a sense of place and identity.

González, Estella

LUANHUA-PILOSYAkre

This paper will examine the role of these walls and their relationship to the surrounding landscape, focusing on the use of materials and the design of the walls. It will also discuss the role of these walls in shaping the regional identity.

JULIO P. O. HERNÁNDEZ

REGIONAL APPEAL OF SOUTHERN WALLS FROM PRECOLONIAL PERU

The walls of the southern region of Peru have been the subject of much research over the past few decades. However, the significance of these walls and their relationship to the surrounding landscape remains unclear. This paper will explore the regional appeal of these walls and their relationship to the surrounding landscape, focusing on the use of materials and the design of the walls. It will also discuss the role of these walls in shaping the regional identity.

JULIO P. O. HERNÁNDEZ

PALEOLITHIC ANTHROPOLOGY

The study of Paleolithic anthropology is crucial in understanding the development of human societies. This paper will examine the role of Paleolithic anthropology in understanding the development of human societies, focusing on the use of materials and the design of Paleolithic tools. It will also discuss the role of Paleolithic anthropology in shaping the regional identity.

ELIZABETH C. SMITH

MAYA CIVILIZATIONS

The study of Maya civilizations is crucial in understanding the development of Mesoamerican societies. This paper will examine the role of Maya civilizations in understanding the development of Mesoamerican societies, focusing on the use of materials and the design of Maya architecture. It will also discuss the role of Maya civilizations in shaping the regional identity.

CARLOS A. RAMÍREZ

LATINOAMERICAN ART HISTORY

The study of Latinoamerican art history is crucial in understanding the development of Latinoamerican societies. This paper will examine the role of Latinoamerican art history in understanding the development of Latinoamerican societies, focusing on the use of materials and the design of Latinoamerican art. It will also discuss the role of Latinoamerican art history in shaping the regional identity.

SONIA M. GÓMEZ

SUBMERGED LANDSCAPES AND SHIPWRECKS: THE FRACTIONING OF MARINE ARCHAEOLOGY(?)

The study and management of submerged paleolandscapes is an extension of terrestrial prehistoric archaeology, but due to the location of the sites on now submerged lake margins and continental shelves, it is typically lumped into a general category of "underwater" or "marine" archaeology. Marine archaeology has been, and in many ways, still is, strongly associated with shipwrecks. In some ways, the lumping of shipwrecks and submerged landscapes into one category is beneficial, since many of the same tools, methods, and issues affect both submerged landscapes and historic resources. However, key differences are also present in both site distribution (shipwrecks are by nature portable sites) and theoretical approaches to identifying sites and investigating them. While there are clear differences between shipwrecks and submerged landscapes, is there a danger in further fractioning their practitioners? This paper will explore some of the benefits and highlight the pitfalls of treating all inundated sites as "marine archaeology".

Evans, Amanda [84] see Weinstein, Richard

THE PAST, PRESENT AND FUTURE OF ARCHAEOLOGICAL LIDAR: A VIEW FROM SOUTHEAST ASIA

In the last five years multiple campaigns of airborne laser scanning (or lidar) have been conducted by archaeologists over Angkor-period sites in Cambodia and neighbouring countries such as Thailand. Analysis of the lidar data is still underway and will continue for many years both in the lab and on the ground, but some key outcomes have now been published, and it is already clear that the advent of lidar represents an important milestone in the history of archaeological remote sensing. This presentation will locate lidar within the historical context of mapping and surveying the Angkorian world; summarise archaeological lidar projects in Cambodia and beyond that are completed or ongoing; present new tools and techniques that have been developed for analysis and interpretation; and discuss some key limitations and opportunities that arise as a result of the technology. The paper will canvas the potential for new acquisitions and comparative studies across the region in light of new developments in UAV technology, lidar miniaturisation, and the imminent deployment of high-resolution spaceborne lidar systems, and explore how research data might be integrated into global repositories of archaeological topography.

Evans, Damian (French Institute of Asian Studies (EFEO))
INDIVIDUAL ABSTRACTS OF THE SAA 83RD ANNUAL MEETING

Evin, Allowen [212] see Dobney, Keith

Ewing, Josh (Friends of Cedar Mesa) [96] Discussant

Fajardo, Blanca [299] see Morales, Ridel

Farahani, Alan (University of Southern California) [4] Change and Continuity in Agricultural Production in Iraqi Kurdistan, ca. 4000 BCE–1000 CE

The archaeological site of Kani Shaie is a small (~3ha) tell site located in Iraqi Kurdistan not far from contemporary Sulaymaniyah. Archaeological evidence as well as radiocarbon dates procured from excavations at the site indicate in-habitation from at least 3500 BCE until the Middle Islamic period, ca. 1400 CE. Excavations in 2015 and especially 2016 included a substantial archaeological sampling component, which entailed the sampling of every archaeological deposit and the subsequent spatial recording of those samples using electronic digital mapping methods. The paper presents the analysis of over 150 samples collected at the site, comprising about 800L of analyzed archaeological sediment. The paper identifies continuities and discontinuities in major food crops (emmer wheat, barley, fig, etc.) through time and the inferred relationships of Kani Shaie communities with the site in terms of agricultural production and food consumption, especially with respect to new foods that appeared in the later historic periods such as rice. The shifts in Kani Shaie’s different modes of agricultural production, especially ca. 3500 BCE and later in 500 CE, reflect the interplay of new modes of social organization and local environmental realities.

Farahani, Lane (Centro de Investigación y de Estudios Avanzados del IPN) and Richard Blanton (Purdue University) [257] Multietnic Landscapes, Inclusive Identities, and Collective State Building

In small-scale societies, including territories of failed states and peripheries; regional landscapes are chaotic and rife with interpersonal violence, slaving, and social disorder, etc. Accordingly, organizing for collective defense and the management of common pool resources is vital for the survival of small communities occupying these zones. In such contexts, ethnic identities, constructed around concepts of blood, race, language, or locality, are important for achieving cooperation because they heighten trust that group members are willing to comply with the costs associated with collective action. Members “signal” their ethnicity and, thereby their commitment to costly moral values associated with cooperation by consuming ethnically appropriate material culture, speaking local dialects, and participating in community rituals. However, when such regions shift toward more centralized administration, multiethnic landscapes appear to pose impediments to achieving collective action at larger spatial scales. In such cases, larger more inclusive identities are hypothesized to be an important ingredient in overcoming inter-community distrust and the unwillingness of individuals with local identities to collectively bear the costs of regional public goods and/or collective defense. In this paper, I consider this supposition using cross-cultural data, as well as the case of the Late pre-Hispanic State of Tlaxcallan, in central Mexico.

Farmer, Alyssa [157] see Kilgore, Gertrude

Farmer, James [73] Recontexting, Decontexting, and Un-Contexting the Great Gallery: “Alternative” Iconography and Romantic Exploitations of the Archaic Barrier Canyon Style

The Barrier Canyon Style (aka. Barrier Canyon Anthropomorphic Style) is widely regarded as one of the more prominent and significant pictographic rock art styles in North America, and the Great Gallery from Horseshoe Canyon in Utah has long been recognized as both the type-site and arguably most prominent and complex of all Barrier Canyon Style sites. It is also the most overly exploited and often visually abused site in popular visual culture. Beyond scholarly reproduction, images of the Great Gallery are routinely co-opted through modern cinema, major museum exhibitions, and commercial branding. Such borrowings and exploitations typically show little concern for stylistic or archaeological accuracy, and in fact often intentionally distort or invent alternative histories to perpetuate agenda driven interpretations of the ancient style. This presentation considers the impact such “recontextualizations” have on both popular and scholarly perceptions of the specific style, rock art in general as an ancient form of human expression, and the role of factually accurate translation of documentary evidence into the popular realm.
Farnsworth, Paul (Temple University)

[67] The African-Caribbean Landscape of Wallblake Estate, Anguilla

Historical archaeologists have explored the plantation landscapes of the Caribbean for more than 50 years, and there have been archaeological excavations at historical sites on every major island. However, there are still questions about when there have not been any previous excavations at historic sites, including plantations. Anguilla was one such island until June 2017 when archaeological survey and excavations began at the Wallblake Estate to understand the plantation landscape and the major activity areas of the estate. The research project is focused on understanding the development of African-Anguillan culture from its origins in the boom and bust plantation economies of the seventeenth and eighteenth centuries, through the nineteenth and twentieth centuries. The research in the summer of 2017 has identified the site of the African village and excavated a sample of materials from it to compare to samples excavated at both the extant main house and kitchen. The results of the excavations and preliminary interpretations will be presented.

Farr, R. Helen

[54] Implications for Submerged Prehistoric Archaeology: Coastal Geomorphological Mechanisms on the Local Scale in the San Pasquale Valley, Bova Marina, Reggio Calabria

Marine reconnaissance off the coast of San Pasquale, Calabria in southern Italy revealed a dense offshore terrestrial peat deposit dating to the mid Holocene. Subsequent radiocarbon dating of samples revealed a conflict with regional relative sea level curves and local patterns of terrestrial uplift. As such, initial analysis suggests that these deposits result from a local hyperpycnal flood event and are not subaerial drowned deposits resulting from Holocene coastal evolution and rapid marine transgression. This paper presents new palaeo-botanical analysis that provides insight into the local coastal environment. Additionally, with increasing recognition of the importance of studying submerged prehistoric landscapes, it documents a cautionary tale about the need to fully understand taphonomic processes and coastal dynamics on the local scale where systematic investigations are rare.

Farrell, Mary, Brian Bates (Longwood Institute of Archaeology), Craig Rose (Longwood Institute of Archaeology) and Walter Witschey (Longwood Institute of Archaeology)

[159] The Longwood Vulnerability, Potential, & Condition (VPC) Assessment Method: A Case Study from a Hurricane Sandy Project in Virginia

Where cultural resources are increasingly threatened by the effects of changing climate, the old model of preservation in place is no longer sustainable. For resource managers charged with the preservation of our cultural heritage, effective stewardship demands that managers are in a position to make data-driven decisions to prioritize the deployment of scarce financial resources to the most vulnerable cultural resources. Nowhere in Virginia are the effects of climate change more apparent than along the shoreline of the Chesapeake Bay, and nowhere else is scientifically derived data on those impacts more urgently needed. To generate this data, the Institute of Archaeology developed the Longwood Vulnerability, Potential, and Condition (VPC) Assessment method and applied it to the Hurricane Sandy Shoreline Survey in Lancaster, Northumberland, Middlesex and Mathews Counties. By triangulating the data from site vulnerability to quantify annual shoreline change rates, potential for undocumented resources through predictive modeling of the study area and the observed condition of known sites, the Longwood VPC Assessment method provides resource managers with a powerful tool for making informed, data-driven management decisions about archaeological sites and the level of threat to which each may be subjected.

Farrell, Sean (Texas State University)

[127] New Investigations of Bone Bed 1, Bonfire Shelter: A High-Resolution Analysis of Late Pleistocene Deposits

This paper reports the results of new excavations of Late Pleistocene deposits at Bonfire Shelter, a stratified rockshelter in the Lower Pecos Canyonlands of Val Verde County, Texas. Previous excavations identified three bone deposits. Bone Bed 1, the oldest deposit, yielded a single uncalibrated radiocarbon date of 12,460 +/- 490 BP. Investigators in the 1960s and 1980s argued that the patterned distribution of megafaunal elements associated with large limestone cobbles in Bone Bed 1 suggests human subsistence activity. However, no formal artifacts were recovered. Mounting evidence for earlier than Clovis occupations elsewhere in Texas, combined with advances in dating technology and spatial analysis, catalyzed new research into Bonfire Shelter’s deepest deposits. In the summer of 2017, Texas State University archaeologists excavated a 3x1m2 trench into intact Bone Bed 1 deposits. A three-tiered approach was implemented to identify evidence of human activity: targeted sampling for microdebitage in association with Pleistocene megafauna, a Structure from Motion (SIM) photogrammetry based spatial analysis of faunal remains, and a column sample addressing the depositional environment of the shelter over 12,000 radiocarbon years ago. If human activity is confirmed, these analyses have the potential to elucidate the subsistence strategies of southern Texas’s earliest inhabitants.

Farrow, Clare (University of Alabama), Jessica Conway (Millersville University) and Haley Hoffman

[334] The Pennsylvania Precontact Predictive Model

In 2015, the Pennsylvania Department of Transportation and the Federal Highway Administration sponsored the development of a predictive model for prehistoric site locations in Pennsylvania. Since the development and release of the model, numerous surveys have been performed across the state, and many new prehistoric archaeological sites have been identified and mapped. During the 2016 and 2017 summers, undergraduate and graduate archaeology students participating the Pennsylvania Department of Transportation’s ESTI (Engineering, Scientific, and Technical Internship) program tested the efficacy and accuracy of the model. The 2016 interns mapped 132 phase 1 survey report results, locations and associated data into Pennsylvania’s Cultural Resources Geographic Information System (CRGIS), and subsequently conducted analysis with this new data. In 2017, the interns concentrated on new phase 1 survey and Pennsylvania Archaeological Site Survey (PASS) site data from eight counties: Erie, Delaware, Lancaster, Berks, Bucks, Chester, Lehigh, and Cumberland. While the conclusions we have reached in this paper are preliminary and will require more years of analysis to fully understand, they reveal several interesting trends in cultural resource management (CRM) archaeological testing methods and model accuracy in different topographic regions of the state.

Farrow Ferman, Teara (Confederated Tribes of the Umatilla Indian Reservation)

[253] Partnerships Developed during the Ancient One History and Next Steps to Building Better Partnerships—A Tribal Perspective

The Claimant Tribes worked whole-heartedly together for 20 years for the return of the Ancient One to his homelands. Throughout those twenty years, many partnerships were made with academia and federal agencies. However many challenges were encountered during the NAGPRA process. These challenges provided unexpected hurdles and trials for the Claimant Tribes in their fight for a cultural affiliation determination with the U.S. Army Corps of Engineers.

The range of challenges the Claimant Tribes faced and continue to struggle with encompasses: demonstrating a continuous, documented history dating from 9000 years ago to present, absence of artifacts and analysis data from Columbia Plateau collections, maintaining collaborative and inclusive relationships between researchers and Tribes, conducting meaningful consultation, and ethical interpretations of NAGPRA. From a tribal perspective, the challenges can be overcome but will require outreach, training, research, ethical guidance, development of guidance documents, and possible legislative changes to NAGPRA’s inadvertent discovery regulations.
This presentation will provide an overview of the challenges and partnerships the Claimant Tribes made which resulted in examples and recommendations to remedy those challenges for the benefit of all our ancestors today and in the future.

Fash, Barbara [293] see Fash, William

Fash, William (Harvard University), Nawa Sugiyama (George Mason University), Barbara Fash (Peabody Museum, Harvard University), Mariela Pérez Antonio and Alexis Hartford (Harvard University) [293] Maya-Teotihuacan Relations Viewed from Front D at the Plaza of the Columns
Two distinct excavation contexts from Front D in the Plaza of the Columns Complex yielded pictorial representations in different artistic media that strongly suggest the presence of Maya artists in Plaza 50, decades prior to the famous Teotihuacan “Entrada” of 378 C.E. in the Petén. Excavations at this civic-administrative structure at the heart of the ceremonial core of Teotihuacan have revealed a sequence of numerous plaster floors in Plaza 50 associated with Structure 44, whose form is reminiscent of Classic Maya “palace” structures. Hundreds of small mural fragments painted in Maya style were scattered beneath the deeper plaza floors, suggesting they were discarded there after the ritual destruction of at least one elaborately decorated earlier building. A contemporaneous termination ritual offering found nearby, adjacent to Structure 25C, contained incised ceramics that are also clearly executed in Early Classic Maya style, with seated human figures bearing elaborate adornments and plumed headdresses. Together these new data and their dating and contexts will allow scholars to address the problem of Maya-Teotihuacan relations in greater specificity and with more time depth than had previously been possible.

Faugère, Brigitte (University Paris 1) [59] Paleolithic and Archaic in North Centre and Western Mexico
The Highlands of North Center and Western Mexico were occupied from the lithic period as testify paleo Indian vestiges (Clovis and Agate Basin points) found in several sectors. From the beginning of Holocene, only the excavations of some sites allow to recognize typological characteristics and to know how the archaeological material change through time. In this presentation, I will examine the available data, in particular the cases of the States of Querétaro and Michoacan, to show the specificity of lithic industry in the region during preceramic time.

Faugère, Brigitte [262] see Darras, Véronique

Faulkner, Charles [90] see Baumann, Timothy

Faulkner, Ivy (University of Minnesota) [197] The Ritual Performance of Gift Exchange in Archaic Greece
Gift exchange is most often discussed as an economic transaction. Whether goods are exchanged for social, political or cultural capital, the model for examining the practice is based on a commodity framework. However, gift exchange is also a performance, often with prescribed behaviors based on the culture and the individuals participating in the exchange. This behavior clearly falls within the realm of ritual as much as that of trade or economics. In this paper, I discuss gift exchange as a performed ritual both within and across cultural groups. Furthermore, while gift exchange is a behavior between individuals, it often has larger ramifications for the communities these individuals inhabit. For example, gift exchange between political leaders may influence the lives of everyone within their society. This link between social organization and gift exchange is an important aspect of its power as a ritual behavior. In particular, I will discuss how ancient Greek elites used gift exchange as an important unifying ritual in order to connect disparate communities in order to maintain cooperative relationships.

Faulsult, Ronald [155] see Ripley, Kevin

Fauvelle, Mikael (University of California, San Diego) [19] A Tale of Two Peripheries: Recent Excavations at Fracción Mujular, Chiapas, Mexico
Fracción Mujular is a modest residential site located on the Pacific Coast of Chiapas, Mexico. Long known for the Central Mexican iconography found on its carved stelae, investigations conducted during the winter of 2017 represent the first excavations of the site. This paper presents the results of these excavations, as well as subsequent laboratory analysis. We now know that Fracción Mujular has a history that covers over one thousand years of occupation, from the Early Classic to the Late Postclassic periods. Situated on top of the natural coastal choke-point of Cerro Bernal, Fracción Mujular would have had close access to important trading routes used throughout Mesoamerica’s history; a detail that is evident in the material culture recovered in excavations. With a diverse ceramic assemblage and obsidian from at least 14 different sources, it is clear that Fracción Mujular was connected to trading partners from across Mesoamerica. I argue that despite its position on the periphery of several Mesoamerican exchange spheres, Fracción Mujular maintained preferential ties to Central Mexican centers—first Teotihuacan and then Cantona—throughout much of its history.

Favier Dubois, Cristian [2] see Politis, Gustavo

Fecher, Franziska (University of Zurich) [299] Cultural and Economic Interaction at Postclassic Guadalupe, Northeast Honduras
The Postclassic settlement of Guadalupe is located on the northeastern coast of Honduras, near Trujillo. With its location inside the interaction sphere between Mesoamerica, Lower Central America and the Caribbean, it lies within a culturally dynamic region that has received influences from various areas during different times. With respect to the Postclassic period, it has been demonstrated that access and distribution patterns of resources and goods changed and new networks of interaction emerged. Communication routes along the coast gained importance. In Guadalupe, many objects were found that point to cultural and economic relations with Mesoamerica and Lower Central America, suggesting that the settlement might have functioned as a coastal trading center. The goals of the Proyecto Arqueolóógico Guadalupe, which has carried out archaeological investigations since 2016, are to find out what role Guadalupe played in these newly emerging networks and with what regions its inhabitants interacted.

[299] Chair

Fecher, Franziska [299] see Reindel, Markus

Feder, Kenneth [203] “An Ever Widening Circle”: The Lighthouse Site State Archaeological Preserve
When John Elwell died in the late nineteenth century, newspapers characterized him as the “last of the Lighthouse tribe.” When Sol Webster died in 1900, newspapers said he was the “last of the Lighthouse tribe.” Before Mary Matilda Elwell died in 1928, she called herself the “last of the Lighthouse tribe.” In fact, however, hundreds of descendants of the founding couple, the Narragansett Indian James Chaughm and his white wife Molly Barber, survive and, as historian Lewis Mils phrased it, have spread across the U.S. “in an ever widening circle.” As a result of archaeological and genealogical
research, many people in that ever widening circle are now aware of the place where their ancestors sought sanctuary in northwestern Connecticut in the mid-eighteenth century. Their village has been the subject of an archaeological excavation and honored as a State Archaeological Preserve (SAP). That designation led to the publication of a booklet and the erection of signage. Inspired in part by the SAP program, more than sixty descendants of James and Molly made a pilgrimage in the summer of 2015, visiting the place that is much more than an archaeological site; it is their ancestral home.

[160] Discussant
[203] Chair

Fedick, Scott (Anthropology, University of California, Riverside), Gerald Islebe (Biodiversity Conservation, ECOSUR Chetumal, Quinta) and Louis Santiago (Botany & Plant Sciences, University of California)

A review of 28 ethnographic, ethnobotanical, and botanical studies published since the 1930s identified 497 species of indigenous food plants used by the Maya in the lowlands of southeastern Mexico and upper Central America. This consideration of the Maya cornucopia focuses on the relative food values of the plants and the visibility of the species in the archaeological record. The diversity of food plants has significant implications for the reconstruction of ancient foodways, agricultural ecology, and the resilience of subsistence systems under stresses of demographic flux and climate change during both ancient and modern times.

[254] Discussant

Feest, Christian (Herr) and Viviane Luiza da Silva (University of Manitoba)

Between Enlightenment and Structuralism: Bororo and Kadiwéu Collections outside Brazil, 1791–1938

From the Philosophical Voyage to Brazil of Alexandre Rodrigues Ferreira in 1791 to the Brazilian fieldwork of the young philosopher Claude Lévi-Strauss from 1936 to 1938, nearly 4000 Bororo artifacts and more than 300 Kadiwéu pots were collected for museums in Europe and the United States by naturalists, anthropologists, missionaries, artists, and adventurers. What began as part of the project of the Enlightenment to catalog the world based on the principles of Linnaean taxonomy turned into a salvage operation to preserve vanishing traditional cultures. The objects filled the shelves of the storage rooms of museums, were more rarely seen in their exhibition halls, and almost never engaged the productive curiosity of scholars. This paper uses the Bororo and Kadiwéu cases to illustrate aspects in the history of ethnographic collecting and shows how the virtual gathering of this now widely scattered monumental corpus may at last be put to some beneficial use for new anthropological approaches and for the benefit of the source communities.

Fehren-Schmitz, Lars [337b] see Schaffer, William
Feibel, Craig [41] see Hubik, Sarah
Feinman, Gary M. [43] see Lapham, Heather
Feinzig, Kristi (Harvard University)
Tracing Sixteenth-Century Beads in South America to Understand Their Impact on Indigenous Ritual Practices and Material Culture at the Time of the Spanish Conquest

Studying beads and changes in use of beads in a given population provide insight into the impact of outside influences on people in a given population. This research identifies bead types that were valued by indigenous cultures in South America prior to the Spanish Conquest in the Sixteenth-Century, and compares their frequency in six geographic regions within Peru, Ecuador, Venezuela, and Colombia with the frequency of glass beads brought by the Spanish to the same regions. This study examines close to 4000 beads across 50 bead attributes from several museum collections, primarily from the Peabody Museum of Archaeology and Ethnology at Harvard University and The Field Museum in Chicago. The frequency of bead colors and materials is analyzed to help determine the value of glass beads in these regions. If there were no cultural preferences or significance by color or material, the analysis should provide a random distribution of Spanish introduced glass beads throughout each region. However, statistical analysis of bead distribution shows that indigenous people did not replace pre-existing shell and stone beads with glass beads. This reveals that people in different regions rejected European glass beads presumably because of existing value systems and preferences.

[36] Chair
Feit, Rachel [44] see Seikel, Katherine
Feltz, William

A Study of 3D Photogrammetry and Oneota Ceramics

3D photogrammetry is the process of creating a manipulable 3D model using only photos from a high-resolution camera that are then processed through computer software to extract 3D data and create a wireframe and mesh. This process can be accurate enough to measure a hairline fracture along the surface of prehistoric pottery with .1mm accuracy. Analyze the benefits of such methods, a study was conducted using Oneota ceramic artifacts of the La Crosse, Wisconsin locality that have been curated at the Mississippi Valley Archaeology Center, with the data compiled into a virtual database. Using typology, archaeologists have recognized differences in Oneota culture. Distinctive characteristics of Oneota ceramics are the motifs created by trailing along the surface of the still moist clay. The pot shape and contours can be recorded by taking photographs at multiple angles to be processed on a computer to create a digital replica that can be studied by anyone with internet access, data no longer restricted to a site whose physical artifacts are exclusively stored within the curation facility. 3D models can also be printed to be used as aids for teaching and studying different methods of analysis, such as typology.

Feltz, William [332] see Herbert, Joseph
Fenn, Thomas (Cal Poly Pomona), Brett Kaufman (Institute of Historical Metallurgy and Materials.), Ali Drine (Institut National du Patrimoine), Hans Barnard (Cotsen Institute of Archaeology, UCLA) and Sami Ben Tahar (Institut National du Patrimoine)

Preliminary Results of Ground Penetrating Radar (GPR) Geophysical Prospection at the Neo-Punic/Roman Period Site of Zita, Tunisia

During the summer of 2016, preliminary geophysical prospection survey using ground penetrating radar (GPR) was conducted at the Neo-Punic and Roman period site of Zita, Tunisia. Since the time available for the fieldwork was limited to two weeks, the survey focused on examining specific areas of the site to document certain architectural features, and in several locations where industrial activities were known to have occurred based on previous limited excavations. Additionally, a region identified as a “tophet”, a sacred burial precinct for infants, was examined during the survey. Goals for the GPR survey were different in each area examined, and the results will aid in future excavations and paleoecological reconstructions. Results from all survey areas will be briefly mentioned, but the paper will emphasize two main target areas. Two industrial sectors were surveyed, where iron metallurgy was practiced, and total slag volumes are estimated to assess the ecological legacy of the industry. A second area of emphasis
was the “tophet” burial precinct, for which the GPR survey produced unexpectedly clear results that enable analysis of the mortuary landscape. Implications of all the results will be briefly discussed, and directions for future GPR survey and excavation will be presented.

Fenn, Thomas [137] see Dussubieux, Laure

Fennelly, Katherine (University of Lincoln) [87] Educating Children of the Labouring Poor: Neepsend School and the Industrial City of Sheffield at the End of the Nineteenth Century
In the nineteenth century, the northern city of Sheffield in England developed significantly as the city’s traditional manufacturing output—metal and metalworking—was industrialised on a mass scale. To support this rapidly growing industrial city, services like railways and gasworks were constructed around the city perimeter, along with housing, shops, and other services and institutions. Neighbourhoods like the industrial colony of Parkwood Springs were home to long term residents, and a growing population of families. The city authorities became concerned with the formal education of these children of the industrial city, children of the ‘labouring poor’. Built initially for the children—boys, girls, and infants—of men employed in the metal trades, the Neepsend School near Parkwood Springs attracted subscribers from across the city, as well as from within Parkwood itself. The school’s situation, amongst the works of Neepsend, firmly embedded the children’s education within the industrial cityscape. As an institution for the care as well as education, the building was carefully spatially divided and managed, communicating social behaviour as well as industrial training. Employing standing building survey, GIS, and archival research, this paper will examine the site of Neepsend School.

Fenoglio, Fiorella [209] see Nielsen, Jesper

Fenomanana, Felicia [114] see Douglass, Kristina

Ferguson, Haylie (Brigham Young University) [11] A GIS Approach to Settlement Patterns and Predictive Modeling in Chihuahua, Mexico
In this study I analyzed the pattern of settlement for known Medio period (A.D. 1200–1450) sites in the Casas Grandes region of Chihuahua, Mexico. Locational data acquired from survey projects in the Casas Grandes region were evaluated within a Geographic Information Systems (GIS) framework to reveal patterns in settlement and site distribution. Environmental and cultural variables such as elevation, topographic aspect, slope, soil, distance to nearest water, and distance to nearest known ballcourt were calculated for each site in this region. It was expected that the relationships of correspondence between known sites and these variables would provide a quantitative framework that could be used to model the locational probability of unknown sites in the region. Through the use of GIS and statistical analyses, the results of this study were used to produce an archaeological site sensitivity map for this region of northern Mexico.

Ferguson, Jeffrey R. (University of Missouri) [246] Discussant
Ferguson, Jeffrey R. [51] see Neiman, Fraser

Ferguson, Leland (University of South Carolina) [278] Discussant

Ferguson, T. J. (University of Arizona) [72] Chair

Ferguson, Terry, Andrew Ivester (University of West Georgia) and Christopher Moore (Savannah River Archaeological Research Program / S [90] A Geoarchaeological Investigation of Site Formation Processes and Late Pleistocene and Holocene Environmental Change at the Foxwood Farm Site (38PN35)
The Foxwood Farm site (38PN35) is deeply stratified (4.8 m) sedimentary sequence located on the Oolenoy River, near the boundary between the Piedmont and Blue Ridge in Pickens County, South Carolina. The lowermost sediments, (4.8 to 3.2 m), consisting of channel gravels, lateral accretion sands, and clays, were deposited during the late Pleistocene prior to 12.6 ka. These sediments exhibit a fining upward sequence from channel gravels and sands, through bar sands, to a cap of clays. The upper alluvium (3.2m to surface) exhibit a well-defined series of discrete fluvial strata separated by three buried A-horizons. These strata are composed, primarily of overbank sands and indicate episodic deposition and erosion throughout the Holocene. The upper 2/3 of the Holocene strata contain multiple cultural components spanning 11ka to present. Radiocarbon and OSL dating of upper alluvium produce several distinctly different chronological models. The presence of an apparent peak in Pt is consistent with similar anomalous peaks found recently at several sites across North America at the onset of the Younger Dryas. 38PN35 not only provides a record of Holocene cultural adaptations but provides insight into the history of a fluvial system in the non-glaciated southeastern US from the late Pleistocene.

Ferland, Laurence (Université Laval) [29] Substances in Transition: Tell Construction in Chalcolithic Bulgaria
Tell s are living places continuously constructed and transformed by their inhabitants through their actions on the matter and objects constituting these places. In effect, the accumulation of clay, rubble and refuse on which houses are built and lives lived reflects daily actions, cultural events happening on longer cycles as well as environmental considerations. Therefore, the blend of things and matter that transited from the riverbed to houses, pots, and aggregated rubble and rubbish requires a special consideration: in this blend, things are not things and clay is no natural matter either. However, the breaking down of aggregates needs to be a means to understand their formation as the aim is to consider the lump of clay and objects as a whole, a tell being more than the sum of its parts. In order to investigate the intricate and flowing matter of the Chalcolithic tell of Petko Karavelovo, this paper focuses on the input of micromorphology. This approach allows comparing matter and its accumulation inside and outside the village’s limits along with the natural soils. Artefacts belonging to the houses are also considered since dirt alone cannot tell the story of the tell people and their interactions with things and matter.

Fernandez, Arabel (Fundación Augusto N. Wiese) [216] Entre símbolos de poder y género. Nuevas Interpretaciones sobre la Señora de Cao
Excavaciones en el segundo templo de la Huaca Cao Viejo del Complejo Arqueológico El Brujo (valle de Chicama, costa norte centroandina), revelaron un hallazgo sin precedentes en la arqueología peruana. Este sector fue el lugar de enterramiento de tres personajes de alto estatus social, acompañados de otros dos individuos de menor jerarquía. En esta oportunidad presentaremos los resultados del proceso de apertura del fardo del personaje femenino conocido como la Señora de Cao. Diversos factores, tanto naturales como antropicos, favorecieron la conservación excepcional del fardo, siendo posible realizar un registro detallado de su conformación. Se propone que el fardo presenta tres etapas de elaboración, siendo la
diferencia de contenido indicador de las mismas. La lectura de esta conformación ha permitido realizar diversas interpretaciones sobre el rol social y simbólico que envuelve a este personaje femenino.

Fernandez, Rachel (Center for Digital Antiquity) and Leigh Anne Ellison (Center for Digital Antiquity) [238] Hidden Threat: Issues with Confidentiality and Protection of Digital Data

With every stroke work, archaeologists expose layers of the past, allowing for the preservation of material while using destructive methods. Fortunately, with the formulation of research and documentation methods over the years, our destructive behavior has been offset with the increase of data and research possibilities. In more recent years, this data has taken on a digital format which has accumulated exponentially. As the amount of data produced from archaeological investigations increase every year, likewise has the threat of data loss and confidentiality issues. We have seen this in the last few years with cases of ransomware and the release of personal celebrity information. Although the archaeological record may not seem to match up to celebrity and corporate prestige, issues with sensitive cultural materials being exposed is of great concern. Without the proper standards in place to secure and safeguard data it will lead to a host of issues in the present and for future it will render. Using the Digital Archaeological Record (DAR) as a case study, in this poster we hope to illustrate proper management and protection tools vital to ensuring archaeological data is safeguarded against security breaches and protected for the long-term preservation of data.

Fernandez Diaz, Juan (University of Houston / NCALM), Anna Cohen (Utah State University), Christopher T. Fisher (Colorado State University), Ramesh Shrestha (University of Houston / NCALM) and Alicia M. Gonzalez (Independent Scholar) [299] New Insights into Honduran Archaeology from the Recovery and Reanalysis of an Antique Lidar Dataset

In response to the widespread destruction caused by Hurricane Mitch in 1998, the US Geological Survey conducted an extensive survey of 15 modern cities in Honduras. This 2000 survey was carried out by the Bureau of Economic Geology of the University of Texas, and the resultant data were used to generate flood risk maps. The survey also produced the first lidar data collection of a Maya site; however, in the early 2000s, lidar algorithms were not capable of performing the same tasks as today. The final elevation rasters that were archived by the USGS were low resolution and had very basic ground/non-ground classification which made archaeological interpretation difficult. Over the past two years semi-raw lidar data was recovered from old magnetic tapes. We have been able to reprocess these data using current algorithms at a level suitable for archaeological investigation. The newly processed data provides unique insight into Honduran archaeological sites as well as settlement patterns throughout a large part of the country. This paper discusses these lidar data from better-known locations such as Copan, the Sula and Comayagua Valleys, and from less-studied areas along the Atlantic Coast, the Aguan and Olancho Valleys, and the southern gulf of Fonseca region.

Fernandez Diaz, Juan [299] see Solinis-Casparius, Rodrigo

Fernandez Souza, Lilia [162] see Peniche May, Nancy

Fernandini, Francesca (Stanford University) [295] The Timespace of the Pre-Hispanic City of Cerro de Oro

This work uses the concept of timespace (Schatzki 2010) to follow the construction and habitation of the prehispanic city of Cerro de Oro within the lower Cañete valley between ca. 500–900 AD. The concept of timespace assumes that the temporality and spatiality of the social are considered as intertwined elements that form the dynamic infrastructure where social phenomena such as power, social organization or coordinated action are constituted. These timespaces are embedded within a “deep time” approach that follows the entangled formation of a city through time and space, allowing to integrate the multiple dimensions and facets that characterize social processes. Moreover, this study proposes to reevaluate the concept of time, criticizing its use as an independent variable which is reduced, molded or extended to fit within “concise” or “logical” narratives of past events, in favor of a view that holds time as embedded within daily practices.

Fernandini, Francesca [211] see Varillas, Rosa Maria

Fernstrom, Katharine (Towson University) [58] Embodying Identities: The Human Figure in Pre-European Native American Art

Two- and three-dimensional human figures, and disembodied parts of figures, are commonly found across North America, and are considered important dimensions of Native American art. Figures appear in diverse media and sizes including stone, copper, shell, earthen effigy mounds, and petroglyphs/petrographs. In the literature, they are most frequently addressed as examples of art for the regions in which they are found, but rarely as pan-North American phenomena. A solely regional perspective implies that they only had local audiences. Human figures and disembodied parts are rarely examined, or compared/contrasted with reference to wider geographic regions as potentially having had diverse and travelling audiences. This regionalism has developed despite Omaha self-identification as having relocated several times, and the patchwork distribution of linguistic groups across North America for example, speakers of Siouan languages are found in both the Great Plains and South East. This research looks at full figures, hands, and hand and arm postures as one example of such widespread imagery. Hand and arm postures are significant not only for their variation in visual imagery, and in disembodied formats, but also their use in historic American Indian gestural sign language.

Ferrante, Lindsay [231] see Blewitt, Rosemarie

Ferring, Reid [41] see Coil, Reed

Fetterman, Liv (USDA Forest Service) [193] Discussant

Feuerborn, Tatiana [16] see Harris, Alison

Fiedel, Stuart (Louis Berger US) [21] Chasing Red Herrings Down the Kelp Highway: Paleoindian Migration via the Pacific Coast is Unproven and Improbable

Over the past two decades, migration of Paleoindian ancestors along the Pacific coast has become the dominant origin hypothesis mainly because: 1) arrival at Monte Verde by 14,300 cal BP (or even 19,000 cal BP, as recently claimed) requires a still earlier emigration from Beringia and 2) the alternative “ice-free corridor” ostensibly was not habitable by large herbivores before 13,000 cal BP. However, the coastal hypothesis cannot account for many inconvenient facts. These include: absence of pre-13,000 cal BP sites on long expanses of habitable and archaeologically visible coast, from the Aleutian Islands to the Atacama Desert; genomic evidence of all Native Americans’ descent from interior-adapted South Siberian and Clovis populations; and absence from coastal East Asia of both any credible ancestral non-microlithic archaeological complexes and the expected ancestral haplotypes (e.g., the Q-L330 male lineage) in ancient and recent genomes.
Evidence for Forest Clearance and Food Production in Lapita and Post-Lapita Fiji

Investigations at the site of Qaraqara have sought to determine the antiquity of forest clearance and food production in Fiji. Located over 25 km inland from the coast, archaeological excavation has indicated that the site was used for habitation and cultivation, producing a ceramic-rich deposit that extends to a depth of 250 cm. Geoarchaeological analyses of sediment cores from Qaraqara reached 500 cmbs, and document the formation of stable soils by 3000 BP, during the Lapita period. Plant microfossils identified through scanning electron microscopy analysis trace a synchronous decline in forest taxa, and a concurrent marked increase in grass taxa, providing a context for the sudden appearance of cultivated banana (Musa sp.) phytoliths. Radiocarbon dates obtained from identified charcoal and ceramic residues, as well as phytoliths and indicators for soil formation and stable carbon isotopes, further trace the history of habitation and food production at Qaraqara for the following millennium. Combined, these data provide critical evidence for the clearance of forest in the interior of Viti Levu, and the immediate commencement of food production in the late Lapita period.

Field, Julie (Ohio State University), Christopher Roos (Southern Methodist University) and Rebecca Hazard (Idaho State University)

Chaco Connections to Mesa Verde: An Engagement with Interregional Landscape Relationships

Ideas of spiritual landscapes and aligned site orientations are gaining traction within the Chacoan archaeological community, and stand as strong examples of intentionally constructed macro-landscapes in the prehispanic Southwest. In this poster, these landscape relationships are extended towards a better understanding of interregional relationships in the four-corners, particularly to investigate inferred and intended relationships between Chaco Canyon and Mesa Verde. This analysis focuses on northern Chacoan outliers like Aztec and Holmes Group as demonstrations of intermediary locations between larger, more distinct cultural regions. Site relationships are investigated through several avenues: 1) geospatial analyses, with a focus on viewsheds, road orientations, and linear alignments; 2) site specific and remotely sensed data; and 3) chronological habitation data. These data demonstrate fluctuations in the northern reaches of Chaco and southern extensions of Mesa Verde throughout the PI and PII periods, to postulate a diachronic and landscape scale perspective of relationships in the Southwest.

Figueiredo, Camila

Tapajó Group Routes Networks, Santarém and Belterra Region, Lower Amazon, Brazil

From the 10th until the 18th century, the Tapajó Indians inhabited the present city of Santarém and the surrounding region. The material culture associated with this group is distributed between the Trombetas and Xingu rivers—west/east—and Almeirim until the middle Tapajós Rivers—north/south. Archaeological and ethnographic data demonstrate that the Tapajó produced the elaborate Santarém pottery. This particular region is characterized by a rich and varied archaeological modified landscape consisting of inland wells, Amazonian Dark Earth (ADE), anthropogenic forest and trail networks. For this presentation, archaeological sites located on the Belterra Plateau and inside the National Forest of the Tapajó are considered. The presence of old indigenous paths connecting archaeological sites on ADE soils on the plateau to the riverine environment and between settlements on the plateau suggest that archaeological sites located on different landscape types were interconnected and complemented each other in the Tapajó domain. In addition, a model created using ArcGIS spatial analyst toolbox proposes how the settlements in these peripheral areas were integrated and connected through a network of pathways and river to the Porto site, the heartland of the Tapajó group, in Santarém.

Figueira, Alejandro (Southern Methodist University)

The Multiple Meanings of the Rock Art Landscape of Central and Southern Honduras

The physical landscape of Honduras was and continues to be home to a diverse group of indigenous groups, each with distinct cultural traditions, artistic styles, and sociopolitical configurations. In prehistory, this landscape was imbued with cultural meaning in a variety of ways, from the monument of the perishable. This paper presents and discusses what we know about the rock art of central and southern Honduras, which contains a variety of iconicographic rock art styles within a very limited spatial scale. The location and content of these sites suggest the inhabitants of this part of Honduras assigned multiple, often overlapping meanings to major features of the landscape, particularly caves and waterways. While preliminary, the results of the work done so far in this region indicate strong symbolic connections with Mesoamerican groups to the north and Lower Central American groups to the south.

Figuti, Levy [2] see Bachelet, Caroline

Filyk, Megan [323] see Chinique De Armas, Yadira

Fine-Dare, Kathleen (Fort Lewis College)

Discussant

Finley, Judson (Utah State University), Erick Robinson (University of Wyoming), R. Justin Derose (Utah State University) and Elizabeth Hora-Cook (Utah Division of State History)

Fremont Maize Cultivation and Latest Holocene Climate Variability in the Cub Creek Archaeological District, Dinosaur National Monument

The Cub Creek Archaeological District in northern Utah’s Dinosaur National Monument was an early center of Fremont maize cultivation and village settlement AD 450–850. Cub Creek lies near the northern limit of maize cultivation in western North America in the foothills of the Uinta Mountain Range. We couple a Bayesian analysis of radiocarbon-dated pithouses and roasting features with a 2,115-year tree-ring reconstruction of August-July precipitation to explore relationships between Fremont subsistence and settlement strategies and climate variability. We propose a multi-stage model where the adoption of maize cultivation and development of pithouse hamlets was a response to regional drought ca. AD 500. Fremont subsistence and settlement reorganized during nearly a century of climate stability moving away from a focus on intensive maize cultivation and pithouse hamlets. During the Medieval Climate Anomaly, we suggest Cub Creek residents shifted strategies to a more foraging-dominated subsistence focus that still incorporated small-scale maize cultivation, but intensified collection of wild plant foods evident by numerous roasting features in the Cub Creek uplands. Our results challenge notions of regional abandonment and narratives of collapse and suggest that flexibility in subsistence options that strategically incorporated maize cultivation was a successful adaptation to climate variability.

Finley, Judson [105] see Byers, David
Fischer, Lisa (Jamestown Rediscovery Foundation)

The Search for Jamestown’s 1617 Church: How Digital Technologies are Providing New Insights into an Old Site

Digital technologies are changing fundamental approaches to archaeological excavation and analysis. The Jamestown Rediscovery project to examine James Fort, the first successful English settlement in North America, has been ongoing for more than 20 years. Recently the team has been working on re-excavating the site of three of Jamestown’s 17th-century churches, the earliest of which is significant for having been the site of the first representative assembly meeting in English America in 1619. Today the site is incredibly complicated because the fragmentary remains of the three buildings have been “cut” into small pieces by the numerous grave shafts dug into the church floors over time as well as the 20th-century archaeological test units. Digital technologies, from drone imaging to 3D modeling, are changing how the site is being recorded, assessed, and visualized, in ways simply not possible a century ago. The one thing that cannot be replaced by technology, however, is the examination of the features and subtle stratigraphic relationships by the archaeologists as they work to define and tease apart the three structures.

Chair

Fish, Paul (Arizona State Museum) and Suzanne Fish (University of Arizona)

Dimensions of Multi-ethnicity in Hohokam Society

We examine multi-ethnicity as a persistent and integral dimension within an overarching concept of Hohokam as a holistic archaeological tradition centered on O’odham peoples in central and southern Arizona. Internal and external multi-ethnic relationships of many sorts abound in the ethnography, oral history, and ethnography of descendant O’odham peoples in former Hohokam territory. Post-contact O’odham sources document the expansive geographic range and the multi-faceted nature of such interchanges, with intriguing implications for pre-Hispanic times. As in the pioneering approach of Cal Riley, insights from all these sources are sought to better recognize and understand multi-ethnic relationships and interactions in the Hohokam archaeological record. We explore two contrasting arenas in which multi-ethnic participation may have been key elements: 1) subsistence intensification and sustainability, and 2) institutional transfer and innovation.

Fisher, Chelsea (University of Michigan)

Three Walks Through Tzacaoil: Engaging the Rural Landscape of Central Yucatán 2000 Years Ago, 1000 Years Ago, and Today

Tzacaoil is a small archaeological site in the hinterlands of Yaxuná, a major center in the central Yucatán region of the northern Maya lowlands. Excavations of Tzacaoil’s nine house groups suggest that a community formed here twice: first during the Late Formative period (250 BCE—250 CE) and again in the Terminal Classic period (700—1100 CE). Both of these occupations coincide with population peaks at nearby Yaxuná. Judging by the ample open spaces surrounding the site’s house groups, people living “out there” at Tzacaoil may have been drawn to the opportunities presented by the distinctive malpaís landform.

Fisher, Christopher T. (Colorado State University)

Characterizing Purépecha Urbanism

At the time of European contact the Lake Pátzcuaro Basin (LPB) was the geopolitical core of the Purépecha (Tarascan) Empire (A.D. 1350–1520), and has long been recognized as a Mesoamerican core region. Cities were an important component of Purépecha statecraft but comparatively little is known about their general characteristics, organization, and evolution. Here I explore the use and division of space within the ancient city of Angamucó to document the development of social complexity, complex societies, and urbanism in the Michoacán region. I rely heavily on airborne LiDAR data to document the ‘urban plan’ to show that 1) Angamucó is hierarchically organized in space; 2) These spatial arrangements are associated with commoner and elite residential sections, ceremonial zones, and large public spaces; 3) Angamucó is multi-noded and vertically organized on a distinctive malpaís landform.

Fisher, Christopher T. [31] see Harris, Edwin

Fisher, Christopher T. [31] see Simpson, Nick

Fisher, Lynn (Univ of Illinois Springfield)

Lithic Production and Consumption in a Chert-Rich Upland: Exploring Local Patterns on a Neolithic Landscape in Southern Germany

The intensity of extraction activities at Neolithic quarries and mines in Central Europe has fueled debate about the scale and organization of chert and flint extraction and consumption during this period. However, most studies of stone consumption and exchange in the region have been based on lowland settlement assemblages at some distance from stone sources. This paper presents results of a regional project combining survey, remote sensing, analysis of private collections, and test excavation to explore Neolithic use of locally abundant chert on the Swabian limestone uplands in southwest Germany. At the center of the studied region is a quarry landscape of pits and debris piles extending over 6 hectares. Radiocarbon dates on charcoal in pit fill indicate that the quarry was used in several episodes from 5000 to 2500 B.C. We combine attribute analysis of the quarry assemblage with comparisons to excavated and surface assemblages from surrounding locations to explore local variations and change through time in the use of the quarry and in the spatial distribution of lithic production activities across a settlement landscape. Results of this project contribute to an understanding of diversity in local patterns of lithic production, consumption, and exchange in the Central European Neolithic.

Chair

Fissel, Mark (Augusta University)

Marine Archaeology’s Influence on Interpretations of Early Modern Warfare, 1975–2020

Each succeeding generation of historians discovers and taps new types of evidence, prompting reconceptualization of what constitutes “history” and spawning new fields of study. Marine archaeology (and the overlapping fields of maritime archaeology and conflict archaeology) are instrumental not only in recovering new primary materials, but also in reconstructing historical interpretation and historical debates. To cite a solitary example, the teaming of marine archaeologist Colin Martin and historian Geoffrey Parker in evaluating artifacts recovered from wrecks of the Spanish Armada (1588) altered the courses of the military revolution debate and the relatively new theoretical fields of counterfactuals and virtual history (in the latter cases perhaps a fortuitous intersection of archaeology and postmodernism). This paper offers (1) a brief consideration of how marine archaeology has transformed the writing of the history of early modern warfare, and (2) a more substantial report on how marine archaeology is currently enhancing the
study of early modern amphibious warfare in riverine, lacustrine, and littoral physical environments. The purpose is to spark interdisciplinary and cross
disciplinary discussion of how marine archaeology is shaping the interpretation of the past in the 21st century.

Fitton, Tom [University of York, UK]

[210] Comparative Evidence of Maritime Activity in the Early Swahili Harbours of Zanzibar

The Swahili of East Africa are regarded historically as a maritime culture, whose coastal sailing networks and prosperous Indian Ocean trade
connections can be dated back to at least the 7th century CE. Archaeological investigations have demonstrated that maritime elements were
deliberately embedded in the architecture of the famous second millennium Swahili stonetowns, but a focus on urban areas has sometimes been at the
expense of areas of potential maritime infrastructure within settlements, or of the broader maritime cultural landscape.

This paper presents the results of the author’s recent PhD on the development of harbour areas and maritime activity in the coastal settlements of the
Zanzibar Archipelago, using a GIS comparison of archaeological data drawn from previous investigations, remote sensing, and geophysical surveys.

The research has demonstrated a pattern of harbour features and the preservation of a series of shoreline maritime activity areas through multiple
phases of urbanisation, settlement decline, and redevelopment. The paper offers a hypothetical perspective on the development of a common spatial
organisation within these settlements, as well as the growingmaritimity of Swahili society, based around the activities and roles of communal maritime
areas.

Fitts, Mary [NC Office of State Archaeology] and John Mintz [NC Office of State Archaeology]

[228] Transcending Borders: A New Approach to Prehistoric Contexts in North Carolina

The North Carolina Office of State Archaeology reviews information about hundreds of newly-identified archaeological sites each year and advises the
State Historic Preservation Office regarding their ability to provide important information about the past. The need to synthesize accumulated data so
that assessments of site significance can better reflect our potential state of knowledge is both pressing and daunting. Updating prehistoric contexts for
North Carolina is a particularly challenging task due to the state’s regionally diverse ecological settings and its position at the intersection of distinct
sociopolitical networks centered to the north, south, and west. In this paper, we review existing spatiotemporal systems used to organize the study of North Carolina archaeology and propose modifications that take into account the research potential of border regions. By calling explicit attention to such boundary zones through time, we invite site assessments to address the potential for studying how American Indian communities in North Carolina creatively negotiated cultural, political, and economic differences. While such an approach requires the synthesis of a considerable amount of information, the rewards in our understanding of past social dynamics will be considerable.

Fitts, Mary [231] see Blewitt, Rosemarie

Fitzgerald, Curran [Department of Anthropology, University of North Carolina at Greensboro], Cyrus Banikazemi [Department of Anthropology, University of North Carolina] and Donna Nash [Department of Anthropology, University of North Carolina]

[211] A Galactic Empire: Celestial Bodies and Imperial Ideology on the Wari Frontier

The consolidation of Wari imperial power in the Osmore Valley was predicated on the perceived legitimacy of a common ritual ideology that situated
elites and their subjects within an ordered cosmos. Recent archaeoastronomical surveys of the administrative and ceremonial citadel on Cerro Baúl
and elite contexts on neighboring Cerro Mejía have identified alignments of ceremonial architecture with recurrent astronomical phenomena at both
sites, suggesting that observation of the heavens reinforced the ritual power structure of imperial Wari society. The celestial alignments of Cerro Baúl’s
Temple of Picchu Picchu and Temple of Arundane represent a hegemonic syncretism, subsuming the worship of local apo into the imperial orthodoxy
of the Wari cosmos. Additionally, a newly identified solar calendrical complex on the summit of Cerro Mejía may have further served to expand the
ideological authority of Wari elites. By structuring a social and ritual calendar around the observation of astronomical phenomena, the elite class
legitimized their cosmological paradigm through elaborate public ceremony.

Fitzgerald-Bernal, Carlos [Universidad Santa Maria La Antigua]

[260] El Gran Chiriquí desde Veraguas: dinámicas fronteras y definición subregional

Se presenta una re-evaluación de la frontera oriental del Gran Chiriquí y su relación con la sub-región de Veraguas del Gran Coclé en Panamá
Central. A partir de hallazgos recientes de petrograbados en el sur de Veraguas y una revisión de la literatura, se reconocen las limitantes inherentes a
una definición estática de fronteras culturales y se analiza la “chiricanidad” de la cultura material veragüense como ejemplo de las dinámicas históricas
en la conformación de entidades regionales. Se contrasta la información lingüística, genética y etnohistórica con el registro arqueológico no publicado
contenido en Estudios de Impacto Ambiental a fin de reconocer particularidades subregionales relevantes. Finalmente, se analizan las interpretaciones
sobre la conformación de sociedades jerárquicas en Veraguas y se comparan con las trayectorias mejor conocidas de los cacicazgos del Gran Coclé a
fin de evaluar si la singularidad iconográfica y simbólica evidentes en la orfebrería, cerámica y lítica de Veraguas durante el último milenio antes de
la conquista española son un correlato de identidad sociopolítica subregional.

Fitzhugh, Ben [83] see Gjesfjeld, Erik

Fitzhugh, William

[79] Shock and Awe: An Insider’s View of the “Stanford Phenomenon”

In the early 1970s Clifford Evans created a “Paleoindian Program” at the Smithsonian’s National Museum of Natural History. Clovis was well-
established in the literature, but its origins and antecedents were mysterious. Dennis Stanford had just received his PhD on Thule culture studies in
Barrow, Alaska, but his real love was Paleoindians. After arriving at the SI he picked up the mantle of the Institution’s pioneering Paleoindian
researcher, Frank Roberts, and instituted large-scale projects at Jones-Miller, Dutton-Selby, and other sites. Decades of federal funding provided
resources for long-term research. Year-after-year, his papers, reports (many to amateur and popular audiences) generated solid data and tested
intriguing and sometimes highly controversial hypotheses. He served as chair of the Anthropology Department, trained students, and built a
Paleoindian collection that became a national resource and attracted worldwide attention. This paper presents an insider’s forty-year perspective of the
“Stanford Phenomenon”—how it changed Smithsonian science, challenged his colleagues, and brought public awareness to America’s first peoples.

Fitzpatrick, Scott [University of Oregon]

[170] Banking on Stone Money: The Influence of Traditional “Currencies” on Blockchain Technology

Centuries ago in western Micronesia, Yapese islanders began traveling to the Palauan archipelago to carve their famous stone money from limestone,
which they then transported back to use in a variety of social transactions. While commonly referred to as ‘money’, these disks were not currency in the
strict sense, though their value is not dissimilar to other traditional and modern objects where worth is arbitrary based on both real and perceived
attributes (e.g., size, shape, quality, pedigree, or other factors). These characteristics have corollaries in today’s society for material culture and
electronic cryptocurrencies that use blockchain technology—essentially, digital ledgers that track financial transactions in real time across a computer
network to ensure that they are seamless and incorruptible. Here I argue that transactions involving traditional forms of ‘money’ or exchange valuables are the precursor to Bitcoin and other technologies that demand a unified and continuous chain of information to ensure that the value is known and ownership indisputable. This research suggests that Yapese stone money is just one of many cases in the ancient past of humans, through social networks, attempting to create accurate and unbroken lines of communication so that economic relationships can be established, maintained, and rectified.

Fitzpatrick, Scott [13] see Kingrey, Haden

Flad, Rowan (Harvard University) [181] 
Little Bronze Things: What They Do and How They Do It in the Early Bronze Age in NW China
Small bronze objects, some tools, others ornaments, and yet others of undetermined function, are the earliest known Bronze objects in China. Many of these objects are found in sites from Northwest China that date to the early part of the second millennium BC. Their manufacture seems to have been conducted locally on a small scale in this region, and yet the transformation of matter that their production entailed played a role in large scale transformations of society—ultimately culminating in the massive production of metal later in the same millennium by the expansive, highly centralized, literate state of the Shang. What did these little bronze things do in the Qiujia and other cultural contexts in which they are found during this early stage? Did they play a role in transformations of political power? Or did they remain rather ineffective in the political realm until later manifestations of metallurgy emerged? How do the roles of these things relate to similar objects in imperial contexts?

Flad, Rowan [45] see Wu, Xiaotong

Fladd, Samantha (University of Arizona, University of Cincinnati), Saul Hedquist (University of Arizona), E. Charles Adams (Arizona State Museum) and Stewart B. Koyiyumptewa (Hopi Cultural Preservation Office) [122] 
Symbolic Associations: Assessing the Co-occurrence of Ash and Turquoise in the Ancient U.S. Southwest
Ash provides a ritually meaningful medium through which to alter or close spaces. In the U.S. Southwest, the patterned deposition of ash in archaeological contexts has been linked to practices of purification and the preservation or suppression of social memory. Turquoise also carries important symbolic meanings in the region, with notable links to moisture, sky, and personal and familial vitality. In archaeological contexts of the Pueblo Southwest, turquoise is often associated with ash or related features like hearths, suggesting an intentional link. This material linkage may represent a broader North American pattern as the association of ash/hearths and turquoise is apparent in multiple cultural contexts. We explore evident connections throughout North America before intensively examining co-occurrences at sites in the Homol’ovi Settlement Cluster, a late prehispanic series of ancestral Hopi pueblos in northeastern Arizona. We address the prevalence and contextual patterning of ash, hearths, and turquoise within the Homol’ovi pueblos to assess their potential role in feature and structure closure practices. We consider the likely symbolism of archaeological patterns using traditional Pueblo perspectives.

Fleischer, Malu (Ilisimatusarfik University of Greenland) and Michael Nielsen (Ilisimatusarfik University of Greenland) [15] 
Ersersaaneq Project: Creating Knowledge Through Images
In 2016, the Ersersaaneq project was instigated by three students from the University of Greenland to create an online repository of 3D models of the Gustav Holm collection. In Greenlandic the word ersersaaneq captures the idea of producing knowledge through the creation of visual images. The goal is to digitally re-unify parts of the collection and develop coherency within a global context. Project partners include Greenland National Museum, The Smithsonian Institution and The National Museum of Denmark. These institutions house parts of the collection and will make the artifacts

Flegenheimer, Nora (CONICET-Área Arqueología y Antropología, Museo de), Celeste Weitzel (CONICET-Área Arqueología y Antropología, Museo de) and Salomón Hocsman (CONICET- UNT) [120] 
Recycling on Fishtail Points: Morphological and Fatty Acids Analysis
Fishtail points constitute a flexible type that exhibits morphological variability, in part unrelated to spatial and chronological factors. Assemblages from the Argentinian pampas include small, medium and large points, produced either on a flake blank or by bifacial thinning on a biface, with or without fluting, with rounded or angular shoulders, that is, presenting variable sizes, design and manufacturing techniques. These variations were partly the result of the production of objects intended for different functions and partly of point life history. Regarding this life history, we here address a conservative strategy affecting Fishtail points in several localities in South America: recycling. Under the term recycling, we consider points modified by retouch to produce a different tool. Fifteen artifacts recovered at Cerro El Sombrero Cima, representing 16% of the point assemblage at the site, are considered recycled tools made on Fishtail points. They were identified through macroscopic observation of traits on edges and tips and the general artifact shape; possible uses of these recycled tools are studied through fatty acid analysis. Although points are transformed into different artifacts, such as side scrapers, knives, notches or drills, the characteristic Fishtail shape is recognizable, reinforcing the importance this design played in early societies.

Fleet, Paige [21] see Cottreau-Robins, Catherine (Katie)

Fleischner, Nora (CONICET-Área Arqueología y Antropología, Museo de Ciencias Naturales, Necochea), Natalia Mazzia (CONICET-Área Arqueología y Antropología, Museo de de), Celeste Weitzel (CONICET-Área Arqueología y Antropología, Museo de de) and Salomón Hocsman (CONICET- UNT)

Flegenheimer, Nora (CONICET-Área Arqueología y Antropología, Museo de), Celeste Weitzel (CONICET-Área Arqueología y Antropología, Museo de) and Salomón Hocsman (CONICET- UNT)

Flegenheimer, Nora (CONICET-Área Arqueología y Antropología, Museo de), Celeste Weitzel (CONICET-Área Arqueología y Antropología, Museo de) and Salomón Hocsman (CONICET- UNT)

Flegenheimer, Nora (CONICET-Área Arqueología y Antropología, Museo de), Celeste Weitzel (CONICET-Área Arqueología y Antropología, Museo de) and Salomón Hocsman (CONICET- UNT)

Flegenheimer, Nora (CONICET-Área Arqueología y Antropología, Museo de), Celeste Weitzel (CONICET-Área Arqueología y Antropología, Museo de) and Salomón Hocsman (CONICET- UNT)
available for the project.

The Ersersaan eq team has tested and developed a cost-effective strategy to create an online database of 3D images to be a universally accessible educational resource. Brief descriptions accompany the images in both English, West Greenlandic and East Greenlandic to provide historical and cultural context, ensuring the local community easy accessibility. Making these materials universally accessible also demonstrates that these materials are not only important to Greenlandic history, but are also part of a larger global collection of indigenous world heritage.

**Fleisher, Jeffrey (Rice University) and Stephanie Wynne-Jones (University of York)**

The Copper Coins of the Kilwa Region, Tanzania, AD 1000–1500: Creating a Regional Currency in an Indian Ocean World of Coins

The residents of Swahili coastal towns across East Africa were among the earliest African Swahili coins to circulate across travel networks stretching from the Indian Ocean to the Sahel and the interior of the continent. Our research, which includes an inventory, as well as the estimation of sex, age, and minimum number of individuals, indicate that half of the individuals from the Avery's Rest site were male. In addition, they revealed that approximately half of the individuals were of African ancestry. Ancient DNA (aDNA) analysis was subsequently undertaken to identify the phylogeographic origin of and possible kinship between individuals at the site. We successfully extracted and sequenced the mitochondrial DNA (mtDNA) control region for all 11 individuals. Our results confirmed the geographic ancestry assigned to these individuals through osteological analysis. In addition, they revealed that half of the eight European individuals shared the same mtDNA haplotype, suggesting they were maternally related, while the three African individuals appear to have originated from different areas of Africa. Together, the aDNA data and burial organization of Avery's Rest provides insights into the organization of labor at the site, suggests that kinship was an important influence during the early colonization of the New World, and reveals new details about slave trade origins on the 17th century Chesapeake frontier.

**Fleming, Arlene (World Bank)**

Challenges for Archaeologists: A Changing Climate Is Only One Development

There is general awareness among cultural heritage professionals, including archaeologists, that a drastically changing climate requires re-examination of our responsibilities and practices for identifying, documenting and managing sites and objects. The occurrence and effects of phenomena such as warming temperatures, sea-level rise, desertification, violent storms, and flooding, are frequently discussed. However, the socio-economic ramifications of a changing climate and severe weather events, and their potential effect on heritage and archaeology, are less often considered. These effects include conflict, migration and displacement of populations, and economic dislocation, as well as weakening governmental authority and structures. Such effects are already apparent, and they may worsen as climate disturbances become more severe. Most international agreements relating to these situations are based on national governing authority and date to a time when climate change and its effects were not considered. What are the limitations of these agreements, and how effective are they for current and future stewardship of heritage and archaeological resources?

**Fleskes, Raquel (University of Pennsylvania), Frankie West (University of Tennessee-Knoxville), Gracila Cabana (University of Tennessee-Knoxville) and Theodore Schurr (University of Pennsylvania)**

Ancient DNA Perspectives on Kinship and Racialized Labor at a 17th Century Delaware Frontier Site

The Avery's Rest archaeological site near Rehoboth Beach, Delaware, represents an early phase of European colonization in North America. Previous archaeological and osteological analysis conducted by the Archaeological Society of Delaware and the Smithsonian Institution, respectively, indicated the presence of two burial clusters containing 11 excellently preserved individuals, one containing individuals of European ancestry and the other individuals of African ancestry. Ancient DNA (aDNA) analysis was subsequently undertaken to identify the phylogeographic origin of and possible kinship between individuals at the site. We successfully extracted and sequenced the mitochondrial DNA (mtDNA) control region for all 11 individuals. Our results confirmed the geographic ancestry assigned to these individuals through osteological analysis. In addition, they revealed that half of the eight European individuals shared the same mtDNA haplotype, suggesting they were maternally related, while the three African individuals appear to have originated from different areas of Africa. Together, the aDNA data and burial organization of Avery's Rest provides insights into the organization of labor at the site, suggests that kinship was an important influence during the early colonization of the New World, and reveals new details about slave trade origins on the 17th century Chesapeake frontier.

**Fletcher, Beatrice (McMaster University), Aubrey Cannon (McMaster University), Scott Martin (McMaster University) and Eduard Reinhardt (McMaster University)**

Revealing Woodland Period Landscape Use at Rat Island, Hamilton Ontario Using Itrax™ XRF Soil Chemical Analysis

With its ability to identify slight changes in chemical signatures from small easily obtained soil cores, Itrax™ core scanning provides an unparalleled opportunity to understand anthropogenic impacts on soils and explore the history of landscapes. Located in Lake Ontario less than 500 meters off the shore of Cootes Paradise, Rat Island (AhGx-7) enabled the integration of multi-element x-ray fluorescence analyses into a traditional excavation program. This small island, initially surveyed and excavated in 1969, 2001, and 2002, yielded artifacts representative of the surrounding Princess Point Archaeological Complex. Our project produced evidence of variable intensities of occupation across the site and within specific strata. This method minimizes environmental impact and field collection time while extending the boundaries of site investigation beyond those typical of small-scale traditional excavation. The method's low impact and ease of collection has also allowed us to compare Rat Island to other sites in the area and contrast patterns of landscape use between Archaic and Woodland time periods. Overall, our study shows how Itrax™ core scanning can extend site-based research and develop a basis for articulation with regional landscape-based research programs.

**Fletcher, Brittany (Barnard College of Columbia University), Aliya Hoff (School of Human Evolution and Social Change, Arizona), Samuel Mijal (California State University, Chico), Jason King (Center for American Archeology) and Jane E. Buikstra (School of Human Evolution and Social Change, Arizona)**

Processing Personhood: Mortuary Activity from the Middle to Late Woodland in the Lower Illinois River Valley

While archaeological engagement with the body as a locus of embodied agency has proliferated in recent years, this study is the first to rigorously apply theories of personhood to the lengthy burial rituals documented within interment facilities of Woodland burial mounds from the North American Midcontinent. This study aims to explore conceptions of the body, divinity, embodiment, and personhood through the analysis of skeletal material from the Middle Woodland Gibson Mounds Site (n=19) and the Late Woodland Helton Mounds Site (n=2). Osteological data gathered in this study includes an inventory, as well as the estimation of sex, age, and minimum number of individuals. The study of skeletal material recovered from these sites, we show are prevalence of hand and foot bones in Middle Woodland processing pits as well as the continued prevalence of extended treatment for adult males. These trends, as well as those concerning long bone frequency and the positioning of final interments, are explored through theoretical frameworks of embodiment, performativity, and divinity. Our analyses provide insights into Woodland peoples' perceptions of personhood and contribute to the growing body of literature that embraces the benefits of a thoroughly social approach to the interpretation of archaeological and osteological data.
Fletcher, Roland (University of Sydney)  
[213] Low-Density, Dispersed Urbanism in the Tropical World: Some Global Implications  
Though low-density, dispersed urbanism is conventionally understood as a feature only of modern industrial societies there was actually substantial low-density, dispersed urbanism in the agrarian world of Central America, Sri Lanka and SE Asia during the late 1st and early 2nd millennia CE. These cities, such as Tikal, Anuradhapura and Angkor with areas between 200 and a 1000 sq km, substantially altered their natural environment and were dependent on massive infrastructure. They were then impacted by severe climate change which picked out their basic operational vulnerabilities. The trajectories of agrarian-based large, low-density cities tell a disturbing story. Despite their diverse histories and economies the demise of the great cities led to a similar outcome. Their entire urban heartland regions, covering thousands of square kilometres, reverted to village-scale life. Low-density urbanism never recovered. The long-term story of large, low-density settlements is not an encouraging indicator of the long-term viability of the giant, low-density, industrial-based urban agglomerates of the 21st century. Our present-day circumstances are disturbingly similar. We should beware if the same outcome were to happen to our present-day, giant low-density cities.

Flood, John [S] see Herrmann, Edward

Flores, Atasta [173] see Smith, J. Gregory

Flores Esquivel, Atasta [252] see Reese-Taylor, Kathryn

Flores-Fernandez, Carola (Center for Advanced Studies in Arid Zones), Veronica Alcalde (Department of Anthropology, Universidad de Tarapac), Laura Olguín (Department of Anthropology, Universidad Católica), Jimena Torres (Universidad de Magallanes, Chile) and Diego Salazar (Department of Anthropology, Universidad de Chile)  
[34] Shell Fishhooks on C. chorus Mussel Shell (7500 to 4500 Years BP) from the Atacama Desert Coast (Chile)  
Fishing was a crucial aspect in the lifeway of ancient coastal societies. Along the Pacific Coast, the appearance of shell fishhooks has been interpreted as part of different contexts of growing population, economic specialization, and social complexity, among others. Along the coast of the Atacama Desert (18° to 26° Lat. South), fishhooks on Choromytilus chorus shells (mussel) appear in archaeological sites located along 1.6 thousand kilometers of coast with dates around 7500 years BP. Around 4500 BP, shell fishhooks disappeared from the Chilean archaeological record and were replaced by hooks made of cactus spines and animal bones. During the ~3000 years that hooks on mussel shells were present, archaeological deposits show evidence of increasing social complexity, specialized maritime economy and semi-sedentary settlement systems. Changes in hook’s shapes are also identified. Observed changes in fishing technology suggest deep changes within ancient fishing communities of South America, which were probably linked by long distance movements of people along thousands of kilometers. The present work will discuss the archaeological context of mussel shell fishhooks within the transitions experienced by Middle Holocene fishing communities of the Northern Coast of Chile.

Fleurs, Kataryna (University of North Carolina at Charlotte)  
[241] Inequality and Consumption Patterns in the North Carolina Piedmont  
Rural farmstead archaeology is often overlooked in favor of research into larger, urban centers. Rural archaeology is an important area of research because for most of American history, the majority of the population lived in rural settings. In addition, the late-19th and early-20th centuries were periods of rapid change in the American South. Farm modernization and southern urbanization affected people at all levels of the socioeconomic ladder. This poster will display the results of an economic scaling analysis of ceramic assemblages from two different late-19th century sites in the piedmont of North Carolina. The analysis will include both locally produced ceramics as well as non-local wares that were mass produced and available commercially throughout the U.S. A statistical comparison of the overall value of the ceramics at each site will be used to explore how patterns of consumption in the rural South were affected by commercialism, socioeconomic status, and inequality.

Flynn, Erin (PAL)  
Semi-lunar knives, or ulus, have been considered a diagnostic tool of the Laurentian Late Archaic in the Northeast since William Ritchie’s 1940 report on the Robinson and Oberlander No. 1 sites in upstate New York. Archaeological research conducted since Ritchie’s definition of the Laurentian Aspect demonstrate semi-lunar knives were used in New England long before, 5,000 B.P. and occur in both coastal and interior settings. Recently identified semi-lunar knife fragments from a coastal Laurentian site on Block Island, Rhode Island resulted in a new research project addressing the introduction, dispersal, and functions of this tool form. PAL reviewed archaeological literature and artifact collections containing semi-lunar knives from southern New England. Our analyses included basic attributes, such as use wear, material types, manufacturing process (chipped vs. ground), decoration, and hafting elements, combined with site location, cultural attribution, and radiometric dating, where available. Use wear analyses were supplemented by protein, starch, and phytolith residue analyses of two specimens from curated collections. Although semi-lunar knives can no longer be considered “diagnostic” of the Laurentian Late Archaic, their broader association with northern fishing and maritime cultures remains.

Foecke, Kimberly (The George Washington University), Douglas Meier, Edward Vicenzi, Russell Graham and Adam Creuziger  
[77] Microanalysis of Taphonomic Alteration on Skeletal Material—A Novel Approach to Identifying Damaging Sulfur Compounds  
The geochemistry of taphonomic alterations affecting buried bone has been little studied, yet has vast implications for scientific interpretation of archaeological and paleontological specimens in a world now embracing chemical methods in geoarchaeology. This investigative study of black surface staining on mammalian sub-fossil bone excavated from the bed of the Santa Fe River in northern Florida exemplifies the need to carefully evaluate post-depositional alteration. Such stains typically are attributed to secondary mineralization of manganese oxides, however microanalysis revealed no evidence for manganese but instead identified crystals of pyrite within a thick red and black banded stain, identified as iron oxide and a ferric tannate complex respectively. Based upon multiple analytical methods, reaction mechanisms are proposed. This study debuts a novel sample preparation method for high-vacuum analysis of bone material, and demonstrates a cost-effective method to differentiate between damaging pyrite and...
other inert sulfur compounds in specimens. Results indicate that fossil coating types are extremely dependent upon the chemistry of the environment in which they are buried. Further, it is proposed that staining phenomena affecting fossils may pose risk to collections if not properly identified, treated, and curated.

[315] Discussant

Foguth, Adesbah [190] see Murphy, Beau

Folan, William [30] see Ek, Jerald

Follensbee, Billie (Missouri State University)

[19] Is That All? Olmec Jade Artifacts as Elite Tools, Ornaments, and Inalienable Goods

Recent research has re-identified certain enigmatic Gulf Coast Olmec greenstone artifacts as elite versions of textile-making tools. These artifacts, which include Middle Formative picks, figural celts, clamshell and plaque pendants, and objects designated as “spoons,” were likely used by elites as both functional objects and high-status adornment, as illustrated in the contemporary sculpture. Most examples of these artifacts are found in caches and graves of distant and/or later civilizations, apparently after they had experienced long use-lives; while still identifiable, most are extensively reworked and could no longer function as tools, becoming primarily symbolic—or their symbolism had been co-opted and transformed through recarving and recycling. Analysis of the few examples found in Formative period graves reveals considerable use-wear and breakage, re-sharpening, and reshaping; some were reworked to the point where they are barely recognizable, apparently retired only after they were largely unidentifiable. Such find contexts suggest that these artifacts functioned as inalienable goods—revered, elite possessions that were reserved, inherited, and treasured as symbols of association and status. Perhaps even more significant, the fact that these tools also served as status symbols suggests that in these Formative societies, social status could be gained through personal agency as well as heritage.

Follett, Forrest, Adam Barnes (CAST, University of Arkansas), Katie Simon (CAST, University of Arkansas) and Carla Klehm (University of Washington in St. Louis)

[286] Toward an Automated Model for Archaeological Site Detection in Eastern Botswana, a Clustering Method

This paper is an effort to create a predictive model for archaeological sites in an area of Eastern Botswana. With a rather arid climate, much of Botswana’s ground surface (and archaeology) is easily visible to airborne and spaceborne sensors. Without sufficient training data for supervised classification, an iterative spectral clustering method was used to group spectrally similar pixels from multispectral imagery into a large number of spectrally distinct but unknown classes. By visually assessing and removing classes that do not correlate with known sites in the region, the remaining classes provide a map for prospective site locations. This work illustrates how satellite imagery and digital remote sensing methods enable the inspection of large areas with little processing time, something that would be impossible from the ground in a single field-season. Also illustrated by this work is the need for on-the-ground inspection of the prospective sites to confirm their existence and to improve the model.

Follett, Forrest [210] see Klehm, Carla

Fontana, Federica (University of Ferrara—Department of Humanities)

[174] Southern Alpine Late Paleolithic and Mesolithic landscapes

Thanks to the intense fieldwork carried out by different institutions since the 1970s, the south-eastern Alps represent one of the most detailed case-studies for the reconstruction of the occupation of mountain areas by foraging groups. The known sites and find-spots, including the Late Paleolithic and Mesolithic occupation of this area amount to several hundred. This evidence shows that foraging groups settled in the Southern Alpine region following the melting of glaciers and the re-colonization of mountain slopes by vegetation and fauna during the Late-glacial starting around 17,000 years cal. BC. As environmental conditions became more favorable human occupation intensified. At the same time seasonal displacements towards alpine pastures reached progressively higher altitudes. In the early Holocene Mesolithic hunter-gatherers are attested along the belt of territory spanning between 1,900 and 2,300 m a.s.l. Although most of the currently available archeological evidence consists of lithic scatters the development of multi-disciplinary studies has allowed the reconstruction of a thorough frame-work. Despite the need for a higher investment of energies—both in biological and technological terms—the upland environments of the Southern Alps have represented an ideal opportunity for the last hunter-gatherers-fishers of the Italian peninsula allowing expansion to newly exploitable territories.

Fontes, Lisa (University of New Mexico)

[191] Moderator

Forbes, Hamish [54] see Chesson, Meredith S.

Ford, Anabel (UCSB), Linda Howie (HD Analytical Solutions/ The University of Western) and Josh Inga (UCSB)

[95] Recipe for Daub? A Comparative Petrographic Study of a Common Construction Component in the Maya Area

Daub is characterized as a mixture of a plastic substance, like natural clay or plaster, and an organic, fibrous binder, which is applied and smoothed against a stick or wood structure to construct a wall. This building strategy is used extensively throughout the world, past and present, yet studies have tended to focus exclusively on identification of component ingredients, rather than compositional and provenance characteristics that offer insights related to resource procurement patterns, variability in daub compositions across time and space, and what contingent and divergent compositions suggest about development and traditions of construction practices. In this study, we present the results of a comparative petrographic analysis of clay artifacts commonly identified as ‘daub’ from Late Classic Maya residential buildings situated in three different environmental zones around the site of El Pilar, Belize. We identify and compare the compositional components of artifacts from valley, foothill, and ridgeland environments and consider their compositional and provenance characteristics in light of formal definitions of daub as a building material, daub recipes, and the nature and significance of variability in these artifacts across the landscape.

[254] Discussant
Ford, Anne (University of Otago) [20] Meet the Neighbours: Evidence for Interaction between the Austronesian Lapita Culture and Non-Austronesian Communities in Papua New Guinea

The Lapita colonisation was the greatest seafaring migration in human history, occupying all the major island groups in their eastward migration across the Pacific, where they became the ancestors of the Polynesians. The orthodox model for their origin is as an Austronesian movement out of Asia, from where they moved into Island South East Asia, and then into the islands of the Bismarck Archipelago of Papua New Guinea, where the culture that we recognise as Lapita was born. Yet major questions still remain as to the nature and origins of Lapita, particularly how much of their culture was a Neolithic package brought out of Asia, and how much has been influenced by contact with Non-Austronesians. This is an important question as it cuts to the core of identifying the development of Pacific cultures.

The Triple-I model proposes that the Lapita Cultural Complex evolved from intrusion into new territories, innovation of new technologies, and integration with established communities. Yet most Lapita sites are found on previously uninhabited Pacific islands, therefore what actual evidence is there for interaction with other communities? This paper will examine this fundamental assumption by investigating potential links between Lapita and non-Lapita communities on mainland Papua New Guinea.

Ford, Ben (Indiana University of Pennsylvania) [78] Public Engagement through Maritime Landscapes

The future of American Archaeology lies in its ability to engage the public and demonstrate the field’s relevance to a broad range of communities. One way that maritime archaeology can contribute to this future is through identifying and interpreting maritime landscapes. A maritime landscape approach draws on the “lure of the sea” that attracts many people to shipwreck studies, but engages larger constituencies through place-based history. Geographic space is one of the things that all people share and maritime landscapes loom large for many cultures due to the power, beauty, bountiful, danger, and opportunity that water bodies hold. Maritime landscapes also allow for alternative histories to exist in the same space because landscapes are interpreted through a cultural lens. Groups that may be disenfranchised by the colonial histories often associated with shipwrecks can connect with maritime archaeology through the physical remains of their ancestors’ maritime occupations and beliefs. In these, and other ways, a maritime landscape approach gives maritime archaeology a broad church perspective that will help ensure a long, productive, and engaged future.

Ford, Ben [39] see Schwarz, George

Forde, Jamie [36] Commensal Politics, Intersectional Politics: Serving Ceramics at Early Colonial Achiutla, Oaxaca, Mexico

In this paper I present findings from recent excavations of a high-status indigenous residence at the site of San Miguel Achiutla, Oaxaca, Mexico. The data show that, contrary to typical expectations, frequencies of elaborate indigenous Mixtec polychrome serving wares rise considerably from the Postclassic to the Early Colonial period, rather than these ceramics being replaced by European style ceramics. Nevertheless, residents of Achiutla did indeed have access to European imported wares, and used tin-enamelled majolicas with considerable frequency, in particular. I attribute this pattern to indigenous nobles having served as primary interlocutors between Spanish authorities and their broader native constituencies following the social upheaval of the Conquest. As such, they would have negotiated with and attempted to appease the demands of both of these different groups simultaneously. I suggest that the ceramic patterning indicates they did so in part through commensal politics, entertaining these various groups at feasting events. I contextualize the archaeological evidence with ethnohistorical evidence to illustrate how this made for a rather delicate balancing act for colonial indigenous elites.

Forest, Marion (Arizona State University) [169] Houses in the City: Domestic Economy and Space at Malpaís Prieto, Michoacán

Compared to other Postclassic cultures, not much attention has been given to the organization of daily life and domestic space in the Tarascan tradition. The political, religious and economic systems have been the focus of most archaeological and ethno-historical research, leaving the household systems understudied. It is yet critical to understand the fundamental role of household in the community organization, specifically in the context of the growing social and political complexity that led to the emergence of the Tarascan State. In this paper we synthesize the data collected at different domestic units (commoner and elite houses) excavated at one of the earliest Tarascan city: Malpaís Prieto, located in Northern Michoacán, Mexico. We examine the spatial organization (e.g. architecture, activities), the production and consumption of goods (e.g. ceramics, lithics and faunal remains), in order to reconstruct the daily life at this early urban site, discussing the social, economical and spatial systems of households, and their role in the urban community structure.

[169] Chair

Dorison, Antoine

Forrester, Robert [91] see Turnbow, Christopher

Forsythe, Kyle (McGill University), Pierre Desrosiers (Parks Canada), James Savelle (McGill University) and Arthur Dyke (McGill University) [16] Comparing Lithic Procurement and Use Within the Foxe Basin, Nunavut

This paper presents a systematic review and update on the nature of stone tool use in the Foxe Basin region throughout the Paleo-Inuit period (2,500 BCE-1,600CE). The Foxe Basin was previously thought to have been a core area of ecological stability/predictability that supported an uninterrupted occupation throughout the Paleo-Inuit timespan. Given the untenability of the core area model and that populations fluctuated over time and space, a reevaluation of lithic technologies and their change through time can help distinguish how the transfer of cultural information took place, and in turn how social life responded to drastic demographic change. Paleo-Inuit use of stone tools was a varied and highly skilled discipline involving intimate knowledge of the land, the properties of stone, and the appropriate ways of crafting tools. Using data from recent surveys and excavations, this talk seeks to identify and contrast patterns of lithic raw material procurement and tool production, and their relationship with key demographic changes that took place throughout Pre-Dorset and Dorset occupations of the region.

Forte, Maurizio (Duke University) [118] Digital and Poly-sensing Archaeology: From Remote Sensing to Smart Trowels

Duke University started in 2014 a multidisciplinary archaeological research project involving the use of advanced digital technologies and focused on the Etruscan and Roman site of Vulci (Italy). Vulci, (10th–3rd c. BCE), in the Province of Viterbo, Italy, was one of the largest and most important cities of ancient Etruria and one of the biggest cities in the 1st millennium BCE in the Italian peninsula. The project integrates the use of multispectral cameras by drones/UAV, georadar, digital photogrammetry, image modeling, and laser scanning. GIS, Web-GIS, and online repositories guarantee the integration and standardization of all of the data. In this domain, Duke is developing a specific Web-GIS platform in Geonode for the integration and sharing of spatial and georeferenced archaeological data. New digital tools, such as smart trowels (named "smart trowels") with multiplex sensors are experimented during the archaeological excavations. The main goal is to collect geometric data but also additional information concerning the features...
and components of the soil. High-resolution sensors coupled with novel photogrammetry processing techniques allow for the reconstruction of landscapes in three dimensions and for virtual reality applications such as the DIVE (Duke Immersive Virtual Environment).

[320] Discussant

Forton, Maxwell (Binghamton University)

[73] House of Shields: Social and Spatial Trends of Rock Art in the Tsegi Region

This study examines the spatial patterning of shield iconography at late Pueblo III sites (A.D. 1250–1300) in the Tsegi Canyon system, as an indicator of shared group identity. In the mid-13th century, the Tsegi Canyon region of northeastern Arizona followed a greater regional trend of communities coalescing into defensive high canyon alcoves, accompanied by the adoption of shield iconography, likely influenced by Fremont traditions to the north. These images are variously interpreted to represent clan symbols, warning signs to enemies, or magically imbued protective icons. In the Tsegi area, this motif followed a strict spatial pattern of placing large, usually white, shield imagery on the right side of cliff dwellings. By comparing the spatial placement of shield imagery on Pueblo III sites throughout the Northern Southwest, it is evident that the communities of the Tsegi Canyon system may be differentiated through their commitment to the placement of these iconic, highly visible pictographs on the right side of cliff dwellings. Rather than the imagery adorning the shields, group affiliation among Tsegi populations is best demonstrated by this formalized placement of the motif on defensive sites.

Forward, Kathleen (Trent University)

[37] Community Complexity and Collapse: A Settlement Analysis of the Ancient Maya Site Contreras Valley, Belize

The city-state of Minanha, located in west central Belize, reached its zenith and most culturally complex stage by the Late Classic period, 675–810 AD. Only a century later, its royal court had “collapsed”. Contreras Valley is a small farming community in the settlement region of Minanha. Decades of research at Minanha and the analysis of artifact frequencies from commoner households allow for a better understanding of the intra- and inter-community social practices occurring at the site of Contreras Valley and within the greater Minanha area. A community archaeology framework is utilized to explore the integrative social, political, and economic strategies of this commoner population. This framework allows for a peripheral perspective on the “rise” and “fall” of the royal court, providing a more holistic analysis of Minanha’s history. As Contreras Valley was able to sustain a population whilst its royal court disintegrated, the resilience of this group of individuals will generate an increased cognizance of how a community copes with and continues to thrive in a climate of political chaos and instability.

Foubert, Jacob (University of Iowa)

[188] From Excavations to Occupations: Characterizing the Faunal Assemblage of a Late Woodland Site

Analysis of a faunal assemblage gives us direct evidence of a subsistence base of archaeological occupation. Woodpecker Cave is a Late Woodland rockshelter site used by the University of Iowa as a field school for student education. The site was first excavated by Warren W. Caldwell after his initial surveying in 1956. In the subsequent years since the university first began excavations in 2012 with Jim Enloe as supervisor, students have expanded the excavation area horizontally leading to portions of levels being excavated throughout different years. The site is excavated in arbitrary ten centimeter levels below datum. To present, each year’s faunal assemblage has been examined by a succession of students for annual reports submitted to the Army Corps of Engineers (CoE). For research purposes, we have chosen to look at level five, excavated during three different seasons, because it appears to have coherent spatial structure, anchored by a hearth with different tasks indicated by distributions of various classes of artifacts. This analysis combines several years’ collections of animal bones from level five to give an integrated, coherent faunal assemblage. This will be viewed in the context of the evident spatial structure for interpretation of site function.

Foubert, Jacob [89] see Stroth, Luke

Fournier, Patricia [69] see Castillo, Karime

Fowler, Madeline (Queensland Museum Network and James Cook University)

[78] The Indigenisation of Maritime Archaeology

Indigenous peoples remain under-represented in maritime archaeology. What strategies are maritime archaeology practitioners using to increase Indigenous participation? This paper introduces the concept of Indigenisation—institutionalised (normative practice) change efforts towards Indigenous inclusion underpinned by principles of recognition and respect for Indigenous peoples, knowledges and cultures—to the discipline of maritime archaeology. Drawing on the Design and Evaluation Framework for Indigenisation (Rigney 2017), this paper identifies five change efforts for maritime archaeology: assembling resources, engagement, working together, building confidence and excellence and equity. It recommends the deliberate involvement of Indigenous peoples in the study, research and management of maritime archaeology, while shifting accountability for Indigenous inclusion to maritime archaeology practitioners. Indigenous maritime archaeology is everybody’s business.

Fowler, Tom [217] see Sykes, Naomi

Fowler, William (Vanderbilt University)

[257] Discussant

Fowles, Severin (Barnard College, Columbia University)

[259] The Aquatic Imaginary of Ancestral Tiwa Landscapes

In this paper, I explore Ancestral Tiwa rock modifications and linguistic conventions to identify what might be referred to as an “aquatic imaginary” governing Pueblo engagement with the northern Rio Grande landscape. The movement of water, it is argued, emerged out of a preceding Archaic preoccupation with the movement of animals as the dominant new way of both conceptualizing ecological systems and intervening in those systems through the organization and modification of stone. Evidence from both the early twentieth century linguistic research of John Peabody Harrington and the more recent archaeological research of the Gorge Project in the Rio Grande del Norte National Monument is used to support the argument.

Fowles, Severin [259] see Morris, Julia

Fox, Amy (University of Toronto)

[22] Conceptualizing Lithic Technological Variation in the Late Archaic Period: A Case Study of the Broadspear Assemblage Type

The archaeology of the Archaic Period in Northeastern North America is dominated by site-based research used as a springboard for discussing regional and pan-regional concepts and ideas. New results are often understood using paradigms created from these studies of singular origin. The present paper takes a different approach and discusses the author’s exploration of the broadspear lithic toolkit phenomenon across the Northeast. The
collections-based study in question updates known datasets of broadspear-context sites to reflect recent research, and takes advantage of these robust datasets using an outline-based geometric morphometric analysis to inform metric variation across the study region. This paper summarizes the results of this research program to date with an emphasis on learning networks and large-scale cultural dynamics in the Late/terminal Archaic period.

Fox, Georgia (California State University, Chico) [208] Poison or Pleasure: The Archaeology of Tobacco and Sugar

The deep history behind what anthropologist Sidney Mintz refers to as the “stimulant or drug foods” reflects collective choices that transformed the desire, which provoked a series of events and changes that resulted in structural inequalities, new forms of materiality, and varying impacts on landscapes and people. The Caribbean region provides an excellent laboratory in which to study the impacts of the production and adoption of stimulant foods. As a gateway to the New World, the Caribbean was a frontier where novel ideas, commodities, and the adoption of new habits converged and were amplified through emerging identities and acts of resistance in a variety of colonial contexts.

Fox, Georgia [70] see Peasley, Ariel

Fox, Sherry (Eastern Michigan University), Sandra Garvie-Lok (University of Alberta) and Steve Friesen (University of Texas) [298] An Osteological and Isotopic Assessment of Diet at Ancient Corinth and Ancient Paphos

Corinth and Paphos were two key centers of the ancient Mediterranean during the Hellenistic and Roman eras. While the commercial and political lives if these communities have been studied, less is known about aspects of day to day life such as diet and health. Here we present some insights based on paleopathology and collagen stable isotope analysis. This study (n = 275 individuals for Paphos; 94 individuals for Corinth) suggests populations that were under a certain amount of stress. Mean statures were relatively low, and rates of cribra orbitalia and porotic hyperostosis suggest that periods of dietary deficiency were fairly common. Collagen stable isotope values were obtained for 34 humans and 17 comparative fauna from Corinth. Due to preservation issues, only six human specimens are available for Paphos. These are similar to those found for Corinth, suggesting a broadly similar diet at the two sites. Overall the human collagen values show a distinctive pattern of low δ13C and high δ15N compared to human values observed elsewhere in Greece. Carbon routing models and documentary evidence suggest that this pattern may reflect a largely grain- and oil-based diet whose modest protein component included marine products such as dried fish and garum.

Fox, Steve (Northern Arizona University) and Jaime Awe (Northern Arizona University) [30] The Bonds that Bind Us: The Analysis of Terminus Groups in the Belize River Valley

Previous archaeological investigations of terminus groups in the Maya Lowlands concluded that these architectural complexes served either cosmological, ritual, or economic purposes. In an effort to test these models, we investigated causeway terminus groups at Cahal Pech and Baking Pot. Subsequent comparisons of the Cahal Pech and Baking Pot data with that from other sites in the Belize Valley, Caracol and Tikal, strongly suggest that while there was some regional diversity in the significance of these architectural complexes, their primary role was likely to produce ideological messages that politically and ritually connected hinterland communities with their site cores.

Foxhall, Lin (University of Liverpool) [54] Greeks in the Mountains: New Insights on the Landscapes of Ancient Greek ‘Colonization’ in Calabria, Southern Italy

This paper investigates the political and economic landscapes of Greek ‘colonization’, using as a case study the upland and lowland landscapes investigated by survey and excavation by the Bova Marina Archaeological Project. The study region lies between two neighbouring ancient Greek city-states, Rhegion and Locri Epizephyrii, established in the late 8th-7th century BCE. Ancient classical texts present a picture of deep, long-term hostility between them, as well as with the indigenous population. Following the historical narrative derived from texts, traditional scholarly thought places Greek settlement largely in lowland areas close to the coast. However, there is evidence of Greek settlement dating back to the 6th century BCE high in the Aspromonte mountains (1300m asl) as well as on the coast. The archaeological evidence reveals more complexity than text-based narratives, with significant available space in political and social organization between upland and lowland zones. Material cultural evidence suggests that notions of ‘Greek’ and ‘indigenous’ need to be questioned and problematized. Sovereignty of the urban centres over the lands in this ‘in-between’ zone appears constrained and patchy. Applying modern concepts of boundaries and borders is probably anachronistic, and our evidence suggests that the inhabitants simultaneously enacted multiple, alternative constructions of ‘territory’.

Foxhall Forbes, Helen (Durham University) [54] Caught between East and West: Southern Calabrian Political Landscapes and the Mediterranean World, 400–900 CE

Calabria in the first millennium CE does not fit easily into many of the established narratives that are usually applied either to the western or the eastern Mediterranean, nor yet into standard categories of periodisation, which often carry implicit assumptions related to these narratives. Using material, visual, and textual evidence, this poster explores fifth- to ninth-century southern Calabrian political landscapes, particularly the area around Bova Marina, in their broader Mediterranean contexts. In this period, Calabria experienced some continuity with the western Roman Empire alongside changes brought about by Byzantine (re)conquest of southern Italy and its absorption into the Eastern Roman Empire; but the longstanding presence of Greek culture had never been completely erased by Romanisation in any case. Calabria’s settlements, economy, and religious life in this period shift links to both Rome and Constantinople. Caught between East and West, however, Calabria in the period 400–900CE is usually perceived as being marginal to both of these centres and is therefore frequently neglected in scholarship. By showing the extent of Calabria’s connectivity to both East and West in this period, this poster suggests new ways of understanding the contribution of southern Calabria’s political landscapes to the Mediterranean world in the period 400–900CE.

Frachetti, Michael (Washington University in St. Louis) [283] Mobility and Migration as Ecological Processes in Ancient Eurasia

New research in the field of aDNA has re-invigorated the debates about migrations across Eurasia in prehistory. Emerging data in this field demands that we interrogate how mobility and migration from an ecological and demographic perspective, since these factors influence our interpretation of the still emerging genetic data. In this paper I present the archaeological conditions of the Eurasian steppe ca. 3000–2000 BCE applied to a spatial model with the goal of generating a more complex ecological picture of mobility, migration, and demographics in Early Bronze Age Eurasia.
Arid environments (marked by scarce water and heterogeneous resources) constrain human adaptation. In this paper, we explore changes in the use of land in the Diamante Valley, Mendoza province, Argentina, during the Holocene. The principal aim of this exploration is to test the validity of a hypothesis that suggests a moderate correlation between δ2H-collagen and δ15N-collagen. Conversion of δ2H-collagen and δ18O-HAP to meteoric water values yielded δ18O values free of trophic level influences, which are proxies for meteoric water influence and amount of consumed protein, respectively. Pooled site data yield a moderate correlation between δ2H-collagen and δ18O-HAP compared to bone hydroxyapatite oxygen isotopes (i.e. δ18O-HAP) and bone collagen nitrogen isotopes (i.e. δ15N-collagen), which are proxies for direct trophic level enrichment/depletion. The deviations are hypothetically caused by non-local food sources and a decoupling of expected δ2H/δ18O relationships as individuals consumed more meat and decreased in vivo non-essential amino acid production.

Hydrogen Isotopes in Archaeological Bone Collagen: Potential Combined Influence of Meteoric Water and Protein Intake

France, Christine (Smithsonian Museum Conservation Institute) and Haiping Qi (United States Geological Survey)

Hydrogen isotopes in archaeological bone collagen (i.e. δ2H-collagen) are poorly understood, but can potentially facilitate new understanding of the relationship between trophic level and consumer protein consumption. These concurrent influences on human δ2H-collagen values were examined in 11 North American archaeological sites. The δ2H-collagen values were compared to bone hydroxyapatite oxygen isotopes (i.e. δ18O-HAP) and bone collagen nitrogen isotopes (i.e. δ15N-collagen), which are proxies for meteoric water influence and amount of consumed protein, respectively. Pooled site data yield moderate correlation between δ2H-collagen and δ18O-HAP and moderate correlation between δ2H-collagen and δ15N-collagen. Conversion of δ2H-collagen and δ18O-HAP to meteoric water values yielded a similar moderate correlation with δ2H/δ18O slope below 8, the expected value observed in meteoric water. Conversion to theoretical hydrogen isotope values free of trophic level influences resulted in a weak correlation with δ15N-collagen, suggesting that direct trophic level enrichment/depletion is not controlling the disparity between expected and measured values. The deviations are hypothetically caused by non-local food sources and a decoupling of expected δ2H/δ18O relationships as individuals consumed more meat and decreased in vivo non-essential amino acid production.

Hunter-Gatherer Adaptation in the Deserts of Northern Patagonia

Franchetti, Fernando (University of Pittsburgh), Miguel Giardina (Conicet), Loukas Barton (University of Pittsburgh) and Clara Otaola (Conicet)

Arid environments (marked by scarce water and heterogeneous resources) constrain human adaptation. In this paper, we explore changes in the use of land in the Diamante Valley, Mendoza province, Argentina, during the Holocene. The principal aim of this exploration is to test the validity of a hypothesis that suggests a moderate correlation between δ2H-collagen and δ15N-collagen. Conversion of δ2H-collagen and δ18O-HAP to meteoric water values yielded a similar moderate correlation with δ2H/δ18O slope below 8, the expected value observed in meteoric water. Conversion to theoretical hydrogen isotope values free of trophic level influences resulted in a weak correlation with δ15N-collagen, suggesting that direct trophic level enrichment/depletion is not controlling the disparity between expected and measured values. The deviations are hypothetically caused by non-local food sources and a decoupling of expected δ2H/δ18O relationships as individuals consumed more meat and decreased in vivo non-essential amino acid production.

Discovering a New Middle Magdalenian Site at Enval in the Massif Central of France

Franklin, Jay, Frédéric Surmely (DRAC Auvergne-Rhône-Alpes, Clermont-Ferrand), Sandrine Costamagno (université Toulouse Jean-Jaurès), Markuren Hays (College of Charleston) and Lauren Woelkers (East Tennessee State University)

We present the discovery of a new Middle Magdalenian site at Enval, a rock shelter site in the Massif Central of France. Radiocarbon dates indicate a tight chronology at 17,000 years ago. The site is significant for several reasons. Fauval elements indicate the site is largely intact and not a palimpsest. Faunal studies also indicate the site was occupied during the winter. This is important because it demonstrates that late Pleistocene humans occupied the Massif Central during harsh conditions. Lithic artifacts indicate far ranging contacts from hundreds of kilometers in multiple directions. Many items of personal adornment and mobilary art were also recovered.
**INDIVIDUAL ABSTRACTS OF THE SAA 83RD ANNUAL MEETING**

Franklin, Jay [35] see Randall, Connie

Franklin, Kathryn (The Oriental Institute at the University of Chicago)

**[220] Landscapes of the Silk Road: Written, Imagined, and Embodied Spacetimes**

This paper approaches Silk Road-escapes as imagined topographies, a particular inheritance of the medieval culture of travel, and of its representations of the world(s). How we imagine the ‘Silk Road’ landscape is therefore rooted in assumptions about categories and conditions of agency (social and historical), and about space. These include mobility, transcendence, and visibility—both in the landscape and in the record. Travel and cosmopolitan encounters along roads (Silk or otherwise) are chrono-topoi (spacetimes) which structure our historically-situated regard of spaces, such as mountain valleys and expansive deserts. Working in local landscapes of medieval Armenia, I problematize the idea of Silk Road space, thinking not only about mobility and contact, but also about spaces of care, hospitality, and comfort. Critical to the theme of this session, these spaces and practices are gendered, embodied and personae that depend on vulnerable spacetimes and ‘quotidian’ actors, as well as particular ideas of ‘culture’ and ‘nature.’ In this paper I will explore how picking at the gendered structuring of Silk Road narratives both requires that we deploy archaeological data in different ways, and also leads to larger-scale untanglings of understandings about large-scale exchange, culture ‘contact’ and the distinctions between pre-modern and modern worlds.

Franklin, Paris (Pacific Lutheran University), Mitchell E. McElwain (Pacific Lutheran University), Bradford W. Andrews (Pacific Lutheran University), Amanda K. Taylor (Pacific Lutheran University) and Dennis Lewarch (Suquamish Tribe)

**[242] An Analysis of Obsidian Consumption in the Postclassic Coatlan del Rio Valley**

This poster presents a technological analysis of obsidian artifacts from two Aztec-period surface collections in the Coatlan del Rio Valley, located in what is now the modern state of Morelos, Mexico. The deposits are from residential terraces collected in 4 x 4 m units. Designs on ceramics collected with the lithics indicate primary occupation after 1400 CE. This study has two primary objectives: first, we technologically classify the artifacts in the collections; second, we evaluate whether there is any evidence to suggest that flaked stone tool production took place on the residential terraces. If blades were produced in these contexts, we would expect to find prismatic blade cores and discarded blades with production errors; if bifaces were produced, we would expect to find thinningdebitage. Our analysis will allow us to infer whether the assemblage is indicative of household workshops or goods obtained through a market system. The results of this study will provide a new perspective on exchange during this time, such as the production stage in which lithic materials arrived in the valley. Using prior data from Yautepec, Cuxcomate, and Capilco communities, this research adds to comparative information available about Aztec period household-based obsidian consumption in Prehispanic Morelos.

Frantz, Laurent (Queen Mary University London)

**[212] Ancient Dog Genome Preserved in Tumor Provides Novel Insights into the Domestication of Dogs**

Transmissible cancers are mostly known from Tasmanian devils, soft shell clams and dogs. In dogs, the Canine Transmissible Venereal Tumors (CTVT) manifests as genital tumors and spreads between dogs (usually during mating) by the transfer of living cancer cells. This tumour first originated in the cells of an individual dog, up to 11,000 years ago, and possesses the genome of that founder dog. As such, CTVT cells contain an ancient living genome (the founder’s dog genome) that was passed along dogs for thousands of years. Interestingly, with CTVT cells have now infected dogs and spread across the world, yet the genome of these tumors has largely preserved the features of the founder’s dog genome. Here I will presents results obtained from novel ancient dog genome sequences that were analysed alongside CTVT genomes. I will show how the CTVT genome can be utilized not only to reveal the evolutionary history of the founder dog but also to provide novel insights into the domestication history of dogs, especially in the Arctic.

Frantz, Laurent [212] see Larson, Greger

Fraser, Lu-Marie [32] see Daggett, Adrienne

Fraser, Brenna, James Woollett (Laval University), Céline Dupont-Hébert (Laval University), Michael Buckley (University of Manchester) and Vicki Szabo (Western Carolina University)

**[16] Genetic and ZooMS Identification of Marine Mammal Bone from Norse Sites in Iceland and Greenland: Insights into Historic Ecology and Norse Economies**

Evidence from Arctic and North Atlantic archaeological sites shows marine mammals were frequently used by Norse settlers in Greenland, Iceland and the Faroe Islands. Archaeofaunal assemblages often yield a wealth of complete bones, however, species-level identification is not possible for heavily fragmented specimens. Therefore, specific details about marine mammal utilization are often unquantified and marine species identification largely remains unverified. This paper reveals utility of ZooMS (zooarchaeology by mass spectrometry) and genetic analysis of ancient mtDNA to examine Norse uses of whales at an array of sites in Iceland and Greenland over the course of the Middle Ages (~800–1500 CE). The analysis of mtDNA and collagen collected from these sites yields new information on the importance of cetaceans and pinipeds during this period. Comparison of samples and their suitability for mtDNA analysis also underscores the loss and degradation of genetic material in rapidly degrading Arctic contexts. With this loss, it is challenging to detect changes in marine mammal utilization and species composition through periods of climate change. Additionally, these data provide critical insight into premodem economies, and a snapshot of mammal community ecology and levels of genetic diversity prior to the advent of industrial-scale exploitation beginning in the 16th century.

Frazier, William (Binghamton University), James Bourke (Binghamton University), Timothy de Smet (Binghamton University) and Alex Nikulin (Binghamton University)

**[156] Seismic Survey of Poverty Point Mound A**

Poverty Point is a UNESCO World Heritage Site known for its monumental earthworks. The largest and most significant feature on the site, Mound A, is over 21 meters high and 200 meters long. Currently, it is believed to have been built in three months at most. This supports the idea that there was a central leader directing its construction, a more socio-politically complex society than previous hunter-gatherer populations in North America. Evidence of stratigraphic layering, however, is an indication of a slow mound construction over centuries. Gaining insight of the construction style and timeline of Mound A will lead to an improved understanding of the site. Mound Builders have been known to cap mounds built in stages. If Mound A was built in stages it is likely capped with more dense material than the dirt surrounding it. To better understand the construction history of Mound A, we conducted a seismic reflection survey over the mound. The seismic data had a normal moveout correction, it was stacked, and migrated. Additionally, with the application of quadcopter-based photogrammetry, a three-dimensional digital model of Mound A was developed to display and assist in further understanding of these data.

Frederick, Charles [59] see Yelacic, David
Frederick, Jennifer, Ray Hewitt (Bureau of Land Management) and Marilyn Walker Cunningham (Bureau of Land Management)

Although use of Unmanned Aerial Systems (UAS), or what are commonly known as drones, has become popular among the general public over the years, federal land management agencies have just beginning to realize their potential for cultural resource management. The Bureau of Land Management, Las Cruces District Office (LCDO), has recently obtained UAS resources and trained staff capable of collecting data that is useful for a variety of resource management issues. In particular, the LCDO UAS team has provided high resolution imagery to assist in resource documentation, site monitoring, and mapping of resource degradation. The data collected via UAS has enabled resource specialists to calculate rates of erosion at a damaged Pueblo site situated on an arroyo bank. Areas of the site that are at high risk of being lost to erosion can be targeted using this data. This is one example of the utility of UAS for cultural resource management, but the implications of this technology are enormous for land managing agencies. Large areas can be covered in a short period of time. The data obtained is high quality, allowing the agency to use the best science available for its mission objectives.

Frederick, Mark (University of Tennessee) and Jeanne Moe (Bureau of Land Management)

Project Archaeology is a comprehensive national archaeology education program, jointly sponsored by the Bureau of Land Management and Montana Management, Las Cruces District Office (LCDO), has recently obtained UAS resources and trained staff capable of collecting data that is useful for a variety of resource management issues. In particular, the LCDO UAS team has provided high resolution imagery to assist in resource documentation, site monitoring, and mapping of resource degradation. The data collected via UAS has enabled resource specialists to calculate rates of erosion at a damaged Pueblo site situated on an arroyo bank. Areas of the site that are at high risk of being lost to erosion can be targeted using this data. This is one example of the utility of UAS for cultural resource management, but the implications of this technology are enormous for land managing agencies. Large areas can be covered in a short period of time. The data obtained is high quality, allowing the agency to use the best science available for its mission objectives.

Project Archaeology: Assessing Paper and Digital Approaches to Online Learning

Project Archaeology is a comprehensive national archaeology education program, jointly sponsored by the Bureau of Land Management and Montana State University, which uses archaeological inquiry to foster understanding of past and present cultures; improve social studies and science education; and enhance citizenship education to help preserve our archaeological legacy. To date it has reached more than 15,000 educators with curriculum guides, activity guides, and professional development. These educators reach an estimated 300,000 learners each year in classrooms and informal settings.

Since 2003 the Investigating Shelter units—teacher-led and designed for upper elementary to middle school students—have been available both digitally online, and as printed materials. The units present both archaeological practice and discoveries through different types of shelter—a Tipi, a slave cabin, and an Earthlodge. The online version allowed for the addition of interactive elements and media, potentially supporting different learning styles. Based on classroom research, and situated in a broader literature, this paper will discuss the comparative strengths and weaknesses of the digital component and traditional models for teaching archaeology and digital literacy, and consider plans for future assessment.
Freire, Jorge

The Future of Maritime Archaeology of Portugal: The Strategy for Socialization and Education. The Example of Cascais

Cascais Municipality has developed a comprehensive program management and valorisation of Underwater Cultural Heritage. Based on Maritime Cultural landscape epistemology it aims to enable a novel approach to integrated management with a dual goal of knowledge and enjoyment. Within methodological lines of this program have grown the actions related to education. From the theory of actor network—has been introduced the theme in the local community, allowing for public enjoyment in situ but, also, through the educational sector of the Museu do Mar Rei d. Carlos. Other related experiences at sea, such as biology and engineering, have created their own sensory elements, developing forms of communication and awareness under "Lab". Furthermore, within the relationship of identity with memory, we have two shipwrecks with strong historical connections to the Portuguese Armada. This has served as a starting point for awareness-raising initiatives and deeper valorisation of these sites. In addition, we have implemented educational policies following the guidelines set by the Monitoring Committee of the UNESCO 2001 UCH Convention. These educational policies will set the groundwork for project growth through the UNESCO associated schools Network and the network of Learning Cities.

Freire, Jorge [68] see Fraga, Tiago Miguel

Freire, Shannon (University of Wisconsin-Milwaukee)

Six Impossible Things before Breakfast: Understanding Space and Place at the Milwaukee County Poor Farm Cemetery

From 1878 through 1974 Milwaukee County utilized four locations on the Milwaukee County Grounds for burial of more than 7,000 individuals, primarily paupers, the institutionalized, and the unidentified. Two archaeological excavations in 1991 and 1992 and again in 2013 resulted in the recovery of over 2,400 individuals from one of those cemetery locations. A comprehensive understanding of the spatial organization and use life of this site has been complicated by the cemetery's history of anonymization and neglect. Nevertheless, the identification of specific 'keystone' individuals has proved possible, providing a fruitful avenue of inquiry to discern burial patterning and internal dates through comparison with the Register of Burial, a document that outlines date of burial and grave location. Strontium isotope analysis has been successfully utilized as part of a multifaceted tool kit to identify individuals in both expected and unanticipated ways. This paper presents several case studies featuring the contributions of strontium research to successful identifications and thereby our understanding of space and place at the Milwaukee County Poor Farm Cemetery.

[107] Chair

Freiwald, Carolyn (University of Mississippi), Kara A. Fulton (University of South Florida), Nicholas Billstrand (Center for Archaeological Research/University of M) and Destiny Micklin (University of Texas at Arlington)

Making an Ancestor at Actuncan: Exploring the Origins, Health, Burial Treatment and Taphonomy of a Late Classic Maya Residential Eastern Structure

The patio adjacent to the eastern structure of Group 1 at the site of Actuncan served as a burial ground for generations. At least twelve individuals in more than seven graves were buried at one of the oldest residential groups at the site during the Late Classic period (AD 600–900). Eastern structures were used to bury revered ancestors in the Belize River Valley, but nearly all of the Actuncan Group 1 burials were disturbed by later burials. When was it acceptable to disturb an ancestor, and how did appropriate treatment of the dead change after burial? This paper explores the relationship between burial practices and the identities of the dead, including osteological analysis of early childhood health and evidence for diet and migration using strontium, carbon, and oxygen isotopes. The re-use of important places over generations shows how ancestors played a role in maintaining memory in the urban landscape.

Freiwald, Carolyn [155] see Alsgaard, Asia

French, Charles [224] see Whitlock, Bethany

French, Kirk (Pennsylvania State University)

Cheap Beer and Generic Weenies vs. Craft Brews and Artisan Sausages—The Archaeology of Tailgating at Penn State University

Although arriving early to an event and consuming food and beverages outside of an arena arguably has its origins in ancient Rome and Greece, the popular and ritualized tailgating associated with American college football is a behavior that warrants archaeological investigation. The Tailgating Behavior Project is attempting to better understand these communal events through ethnographic interviews and garbological/archaeological surveys at Penn State’s Beaver Stadium at University Park, Pennsylvania. Interviews of tailgaters were conducted on game days at multiple locations that were selected based on parking price ($20—$500 per game). The following morning a crew of undergraduates returned to the same areas to record the refuse left behind. The project offers valuable data on consumer behavior while providing a unique opportunity to demonstrate the basics of archaeological research to students.

French, Jennifer (University College London)

Opening Remarks: The Archaeology and Palaeoanthropology of Non-modern Humans

The study of archaic hominins (non-modern humans) poses some unique challenges to archaeological interpretation, and relies on close integration of archaeological data with those from other allied fields including palaeoanthropology, genetics, primatology, and ethnography. In this opening paper, I reflect on some of the recent advances and discoveries in these fields which are changing the ways in which we both conduct and conceptualise research in to non-modern humans in archaeology. I then introduce the main themes of the symposium, including models of interaction between different hominin species, the interpretation and analysis of material culture produced by archaic hominins, and the question of the cognitive abilities of non-modern humans and how these can be inferred from archaeological data.

[329] Chair

Freund, Kyle (Indian River State College)

Moderator

Discussant

Frey, Alex

Tastes of Home: Food Cultures of Roman Britain Auxiliary Soldiers

This study addresses the influences that culture and ethnicity have on dietary patterns, specifically looking at the variances in food culture amongst the myriad of ethnicities comprising the ranks of the Roman Britain auxiliary troops. The following research correlates ethnic identity with food culture by analysing the variances in archaeological food remains from 15 Roman forts garrisoned by auxiliary troops and comparing these variances to other published archaeological work from throughout the Roman Empire. Faunal data is represented by the Number of Individual Specimens Present (NISP), Minimum Number of Individuals (MNI), and distinguishable butchery patterns. Floral data is represented by varying frequencies of species in the macrofossil plant record. Statistical and graphical representations of both the floral and faunal data test the significance and strength of the outliers and patterns. The results demonstrate statistically significant variations in the faunal data, along with unique patterns in the floral data, suggesting a direct
correlation to the cultural regions from which the soldiers originated. This research ultimately demonstrates how the international identities of the Roman Britain auxiliary soldiers are represented through their food consumption patterns in the archaeological record, adding to contemporary food studies of dietary relations to culture and identity.

Fricke, Felicia (University of California, Santa Barbara) [26]
Think Locally, Act Globally: How a Local Perspective Informs the Broader Narrative of Mississippianization in the American Midwest

The ‘Mississippianization’ of the Midwest unfolded during the late 11th and early 12th centuries as interactions with Cahokia influenced aspects of local community organization, ceremonialism, material culture, and access to exotic raw materials. For local peoples, these encounters and affiliations also facilitated interactions between Mississippian groups beyond Cahokia. The direct proximity of the Lower Illinois River Valley (LIRV) to the Greater Cahokia area enabled certain social, political, and economic interactions with American Bottom Mississipians that did not transpire with more distant groups, resulting in the closer adoption of Mississippian lifeways than observed further north. However, new data from the Audrey-North site (11Ge20) in the LIRV (AD 1100–1150) illustrate the localization of Mississippian practices in a village uniquely positioned within a vast network of long-distance exchange and sociopolitical interaction. This research adds to the growing narrative of local innovation and interregional interaction in the Mississippian Midwest. This paper further seeks to demonstrate the complexity of cross-cultural encounters and the value of the local perspective.

Frideberg, Diana (Proyecto Regional Arqueologico La Corona) [337]
The Zooarchaeology of La Corona: Sustenance and Symbol

The tropical lowland surroundings of La Corona support a wide range of indigenous fauna. Zooarchaeological analysis demonstrates that the site’s ancient inhabitants made use of this diversity, exploiting many terrestrial and aquatic taxa in subsistence and ritual activity. This paper summarizes major zooarchaeological findings from the duration of the La Corona Regional Archaeological Project. Excavations at La Corona have not targeted areas expected to be “fauna rich” and have produced approximately 5,000 specimens, but this relatively low count belies the interpretive value of the material. Zooarchaeological remains at La Corona from a discrete feasting event and palace middens reveal dietary flexibility and breadth by the high elite, including exploitation of smaller-bodied mammals. Animal bodies in these contexts operate as symbol as well as subsistence. This symbolic role is also present in faunal remains from burials at La Corona, where both fresh- and saltwater aquatic species associate the deceased with the watery Underworld. The diversity of remains found at La Corona, coupled with the rich information that deposits have provided to date, indicate the site’s noteworthy potential to inform our understanding of ancient Maya human-animal relations.

Friedel, Rebecca (The University of Texas at San Antonio) and M. Kathryn Brown (The University of Texas at San Antonio) [76]
Communing with the Gods: The Paleoeothnobotany of Fire Rituals

The importance of fire in Maya rituals is well-known, both archaeologically and ethnographically. Fire, which is symbolic of the life cycle in Maya ideology, has been used as a means of communicating with the supernatural world in order to manage specific aspects of everyday life, such as the success of the agricultural season. In the archaeological record, we find evidence for ancient fires as features consisting mostly of burnt plant remains, some of which resemble modern Maya fire altars both materially and spatially. In this paper we present archaeological and paleoeothnobotanical evidence from fire features recently excavated within E-Group complexes at the sites of Early Xunantunich and Buenavista del Cayo. We argue that the characteristics of these features suggest that these fires were ritual in nature. Therefore, the types of plants used to start and fuel these ritual fires likely held special significance to the ancient Maya as they were “sacrificed” to the Gods. Paleoeothnobotanical studies are often focused on reconstructing the ancient environment and subsistence strategies. This study highlights the important use of paleoeothnobotanical data to shed light on past ritual activities and ideologies.

Fries, Eric (UNLV) [11]
Testing a Multi-Modal Remote Sensing Approach for Detecting Ancient Maya Sites With Low-Resolution Data

In the absence of LiDAR and similar high-resolution data products, an alternative approach was developed to model and predict site location information from low-resolution, publicly available datasets such as ASTER, LANDSAT, and aerial photographs. Manipulating and combining the analyses of multiple datasets permits refinement of model output and detection capabilities. A large database of known sites, in assorted topographic and vegetative conditions and degrees of exposure, was used as a training model to test and improve the accuracy of the method, followed by ground truthing of initial results and subsequent model refinement. In addition to use of this model for detection on its own, the method results could also be used for quickly identifying and targeting areas of interest in higher resolution products such as LiDAR, if and when they become available.

Friesen, T. Max [16] see Mereuze, Remi

Froese, Tom (Universidad Nacional Autónoma de México) and Linda Manzanilla (Universidad Nacional Autónoma de México) [31]
A Network Model of Co-Rulership and Community Ritual in Teotihuacan: From Neighborhoods to Districts

Experts remain divided about the nature of the sociopolitical system of ancient Teotihuacan, which was one of the earliest and largest urban civilizations of the Americas. Excavations hoping to find compelling evidence of a powerful dynasty of rulers, such as a royal tomb, keep coming away empty-handed. However, the alternative possibility of a corporate or collective government, perhaps headed by a small number of co-rulers, also remains poorly understood. A third option is that the city’s collective government began as a fully decentralized network of neighborhood representatives, but this kind of arrangement seems susceptible to the problems of cooperation and action coordination. Previously we used a computational model to show that in principle this latter worry is unfounded, as long as we assume that the network’s topology could be transformed via community rituals and was not strongly subdivided (Froese, Gershenson, and Manzanilla 2014). Here we extend this model to investigate whether
centralized hierarchy could mitigate the negative effects of strong divisions. The new results reveal a peculiar synergy between hierarchy and community ritual in that only their combination improved the extent of coordination, which is consistent with portrayals of the elite as religious specialists serving the public.

Frost, R. Jeffrey (California State University-Stanislaus)
[260] Continuity and Change in Chiriqui Period Village Organization
Chiriqui Period (700–1500 CE) archaeological sites have been the subject of systematic scientific research for more than 50 years. However, archaeologists are only recently beginning to define and understand regional and temporal variations in artistic styles, settlement patterns, and village organization. In this paper, I summarize emerging patterns in village placement, cemetery organization, and the construction of public space. Continuities in the elements of constructed spaces, such as the use of conical house forms, cobble pavements, and public plazas, endure for the duration of Chiriqui, but the ways that these architectural features were interpreted and arranged changed dramatically, particularly during the tenth and fourteenth centuries, likely signaling the key changes in ideology and social dynamics that occurred across the region.

Frouin, Marine (RLAHA, University of Oxford, UK), Jean-Luc Schwenninger (RLAHA, University of Oxford, UK) and Tom Higham (RLAHA, University of Oxford, UK)
[41] New Insights into the Chronology of Late Middle Paleolithic Occupations in Southwestern France
The southwest of France is well-known for the wealth and number of sites attributed to the Middle Paleolithic. The archaeological sequences reflect an apparent heterogeneity of Neandertal behaviors, based on the apparent variability of the lithic technological systems adopted by human groups over time. This has led to a range of different interpretations of the archaeological evidence. What is apparent is that a reliable chronology is key if we are to understand Middle Paleolithic lithic variability throughout this time period and its relationship to change in paleoclimate and paleoenvironment. In this study, absolute dates were obtained from several major archaeological sites (e.g. La Ferrassie, Roc de Marsal, La Quina) by applying improved luminescence dating methods. By measuring the time elapsed since minerals were last exposed to daylight, this technique enables the direct dating of sediments associated with archaeological remains and periods of human occupation at an individual site. The combination of luminescence results with other absolute techniques allows us to establish new chronological frameworks for these sites. In this paper, we will present results which provide new insights for our understanding of Neandertal adaptation strategies, activities and cultural change in European populations during this period.

Frouin, Marine [41] see Higham, Tom

Fruhling, Jake (Idaho National Guard)
[232] Moderator

Fuhrmann, Sven [331] see Pettitt, Alisa

Fuka, Matthew (Purdue University)
[185] Entheseal Changes in Bronze and Early Iron Age Mongolia
Extensive bioarchaeological research has addressed questions about stress, pathology, and activity in agricultural and semi-agricultural populations throughout the archaeological record, yet comparable studies pertaining to nomadic pastoral and semi-pastoral groups are relatively rare. During the Bronze Age in the Eurasian Steppes, archaeological evidence suggests a transition of lifeways from semi-sedentary agricultural to nomadic pastoralist. Entheseal analyses in bioarchaeology introduce an exciting avenue to ask new questions about the physical effects these lifeways have on those who practice them. This study aims to investigate the extent of entheseal changes among Bronze and Early Iron Age populations in Mongolia as both sedentary and pastoral groups were contemporaneous. Entheses of the upper and lower limbs were scored for 54 individuals dating from the Bronze Age and Early Iron Age. Scores between and within the two periods were compared and entheseal differences between sexes, age, body size, and site location were analyzed. The goal of this study is to answer if there are differences between the two periods and which factors influence the differences.

Fuka, Matthew [3] see Parrish, Deborah

Fuld, Kristen and Terry Ozbun (AINW)
[140] Cultural Landscapes of Glass Buttes, Oregon
Located on the northern fringe of the Great Basin, in Lake County, Oregon, the Glass Buttes volcanic complex is the most important obsidian toolstone source in North America. Glass Buttes obsidian is world renowned because it is colorful, abundant, available in large pieces, and of extremely high quality for making flaked stone tools. Throughout the late Pleistocene and Holocene, Native Americans have continuously used Glass Buttes obsidian, and it was widely traded in the Pacific Northwest and beyond. Glass Buttes obsidian has also been historically instrumental in pioneering archaeological lithic technology research and is of special importance to the modern flintknapping community. Now, new research shows that in addition to being a major obsidian toolstone source, Glass Buttes is also a focal point in a Native American spiritual landscape punctuated by hundreds of rock features. These rock features comprise a complex associated with the prominent Glass Buttes peak. This spiritual landscape overlays the lithic landscape and the two are inexorably linked together. On-going ethnographic research conducted by Native American tribes is revealing another dimension to this important place and elucidates the relationships between the cultural landscapes of ancient times as well as in the present.

Fullen, Brittany (Binghamton University)
[300] What’s a Niche Got to Do with It? Spatial Analysis of Niched Structures at Patipampa and Other Middle Horizon Sites
Excavations at the Middle Horizon (AD 500–100) capital city of Huari in the summer of 2017 focused on understanding processes of urbanization and the resulting realities of everyday life in the domestic sector of Patipampa. Several of the architectural spaces exposed during excavation were more intensively investigated. This paper focuses on the architectural space containing niched walls in order to understand how the Wari utilized this type of space in comparison to the uses of the other rooms excavated in this residential sector. I will discuss the diversity of materials recovered from the unit as well as compare the ceramic cache located in this unit with one encountered in a different compound. Additionally, I will use the preliminary findings to explore the similarities and difference this space shares with niched structures reported from other Middle Horizon Wari sites.

Fullen, Dorian [86] see Garay-Vazquez, Jose

Fulminante, Francesca [146] see Lozano, Sergi

Fulton, Deirdre [86] see Zori, Davide
Fulton, Kara A. (University of South Florida), David Mixter (Binghamton University) and Borislava Simova (Tulane University)
[129] Residential Trajectories of Commoner, Elite, and Noble Spaces at Actuncan, Belize

This paper summarizes the archaeological investigations of ten residential units at Actuncan that likely represented three distinct social strata: commoner, elite, and noble. We explore the trajectories of these residences from the Preclassic to the Terminal Classic period. Data suggest that although political authority in the Mopan River valley shifted throughout Actuncan’s long occupation, many commoner residences maintained local identities and residential continuity through time. However, the exact patterns of prosperity varied between residential groups. In contrast, elite residences show evidence of abandonment and reoccupation while the noble residence was occupied for a relatively short period. Elite and noble trajectories appear to have been strongly tied to shifting power structures, whereas commoner trajectories were less dependent on political transitions. Understanding strategies employed by residents during shifts in local political authority is an important foundation for interpreting broader political dynamics, including relationships between residents and rulers, and how rulers were able to create, legitimize, and maintain power and authority.

Funkhouser, J. Lynn [168] see Stewart, Ashley

Furlong, Julia (Eastern Washington University), Jerry R. Galm and Stan Gough
[47] Identifying Lithic Technological Strategies at the Late Paleoindian Sentinel Gap Site Using 3D Digital Morphometrics

The Late Paleoindian Sentinel Gap site, located along the Columbia River in central Washington, provides a unique data set of bifaces and projectile points/knives (pp/ks) from a single occupation episode dating to c. 10,200 radiocarbon years BP. In addition to over 60 partial and complete bifaces and 11 pp/ks recovered during excavations, 15 lithic debris accumulations interpreted as debitage “dumps” were excavated. The retting of flakes from one of these features revealed the original core as well as compelling evidence that at least some dump features represent single biface reduction episodes. Most recovered pp/ks were manufactured from non-local materials, indicating construction elsewhere and curation on-site. This study aims to identify technological techniques associated with biface and pp/k manufacture using data derived from 3D models. In addition, the potential for different knappers is examined using 3D digital morphometrics. Comparison of the technological details of lithic tool reduction strategies within the samples of locally manufactured bifaces and introduced pp/k provides fresh insights on lithic tool manufacturing strategies and the applicability of 3D digital morphometrics as an investigative tool.

Furlong, Mary [14] see Wright, Sterling

Furo, Larry [89] see Sterner, Katherine

Fux, Peter [299] see Fecher, Franziska

Gabelmann, Olga (FU Berlin, Germany)
[141] Investigations on the Chaîne Opératoire, Technique and Practice: Formative Period Pottery Workshops in the Cochabamba Valley

The High Valley in Cochabamba yields two different ceramic wares, which on first sight may demonstrate a homogeneous society. But by investigating the chaîne opératoire, the two wares each show a different set of variables on technique and practice in the production process, and, therefore, must have been produced in separate workshops. Although there is a functional aspect of each ware on the one hand, the differences can also be interpreted as expressions based on a “habitus” of technical practices and routines of physical behavior on the idea of how to produce an object, on the other hand. Thus, the wares may be linked to different social, economic or political groups inhabiting the valley, which maintained a local distribution system for the acquisition of each of the products.

Gade, Susan [239] see Marcucci, Derrick

Gadsby, David
[231] Approaches, Rationales, and Challenges to Maintaining Site Inventory in the National Parks

For over a century, the National Park Service (NPS) has worked to preserve natural and cultural resources in more than four hundred park units for future generations. In addition, the National Historic Preservation Act (NHPA) requires all federal agencies to maintain inventories of their historic properties. For decades, the NPS has relied upon three inventory systems: The List of Classified Structures, the Cultural Landscapes Inventory (CLI), and the Archeological Sites Management Information System (ASMIS). These systems began decades ago as paper files and continue today as electronic databases accessed via the internet. The inventories allow NPS to maintain and update critical information including resource type, location, condition, threats, and disturbances. As the relevant technologies continue to develop with what seems like increasing rapidity, even these relatively modern databases are being rapidly rendered obsolete. The NPS Cultural Resources, Science, and Partnerships directorate has begun work to modernize these systems, and to facilitate their further integration with GIS technologies and other NPS programs, and incorporate elements of the now defunct Ethnographic Resources Inventory (ERI). This paper discusses the issues faced as NPS updates these crucial tools for a second century of service.

Gagnon, Celeste [270] see Rivera Prince, Jordi

Gaikwad, Nilesh [256] see King, Adam

Gaitan Ammann, Felipe [14] see Wesp, Julie

Gajewski, Scott (GAI Consultants, Inc.) and Corry Laughlin (GAI Consultants, Inc.)

Throughout two field seasons (2015–2017), the University of Montana and GAI Consultants (UM-GAI) conducted a Section 110 archaeological survey and evaluation project at Warren Grove Gunnery Range (WGGR), Burlington County, New Jersey (9,911 acres). The UM-GAI team completed archaeological survey of all accessible areas of the range making it one of the most expansive survey projects within the New Jersey Outer Coastal Plain. The study identified and evaluated a total of ten sites and recommended two sites relating to historic charcoal production as eligible for listing in the National Register of Historic Places. UM-WG-1, a probable collier’s camp site, and UM-WG-9, a cluster of at least 8 potential charcoal kiln remnants, were investigated through a combination of historical background research, pedestrian survey, close-interval shovel testing, geomorphological sampling, and ceramic analysis. These sites represent a mid-to-late nineteenth century charcoal production complex, only a few of which have been archaeologically investigated in this portion of the Pine Barrens. With the collaboration of academic and business institutions, the Warren Grove Survey and Evaluation Project serves as an example of an efficient approach to the identification and protection of cultural resources in a region relatively unknown to the archaeological community and the public alike.
INDIVIDUAL ABSTRACTS OF THE SAA 83RD ANNUAL MEETING

Gajewski, Scott [334] see Pfau, Justin

Gakii, Mercy [140] see Zipkin, Andrew

Galaty, Michael [169] see Cohen, Anna

Galban, Maria (National Museum of the American Indian)

Seeing NMAI: Reconstructing NMAI's Collections Histories

The National Museum of the American Indian and its predecessor, the Museum of the American Indian, have long suffered a reputation for poorly documented collections. Assuming that documentation never existed or was at some point discarded; researchers have been largely unable to take full advantage of the scientific and research value of NMAI collections. In 2010, NMAI staff began a project to overturn this reputation. By retroactively implementing an accession lot system and creating virtual accession files of digitized documents, we have reunited documentation stored in NMAI archives with associated objects. The project reverses the typical methodology of starting with an object and searching for its related documentation; instead, we have systematically reviewed archival documents, matched them with objects, and connected sometimes far-flung and previously lost bits of information. As a result, we have uncovered detailed and complex connections between our objects and hundreds of collectors and archaeologists not previously visible in our museum catalog, all of which is readily available to researchers. To date, 88% of NMAI collections have been re-associated with their documentation, providing us with new understandings of our collections and creating new opportunities for research use of NMAI’s vast collections.

Gale, Sara [236] Moderator

Galeke, Laura (George Washington Foundation)

Resurrecting Mother Washington: The Dissonance of Washington’s Youth

Powerful messages concerning ideal gender roles feature prominently, if latently, in Washington biographies. Most contemporary narratives suggest that George succeeded despite the “selfish” efforts of his widowed mother. Archaeological investigations at Washington’s childhood home underscore the dissonance between the material culture of his youth and popular stories about his upbringing. This site was wrested from strip mall development thanks to the persistent efforts of preservationists. Archaeological investigations supported by The George Washington Foundation were designed to discover the location of the remains of Washington’s original boyhood home. However, these excavations have accomplished something far more significant: they are producing copious evidence that demonstrate adroit management of the household and plantation by mother Washington. Despite these discoveries, narratives that dismiss mother Washington’s efforts not only persist, but continue to thrive; the legacy of a powerful, patriarchal political environment.

Gallardo, Francisco [141] see Vidal-Montero, Estefanía

Gallareta Cervera, Tomás (Kenyon College) and Brett A. Houk (Texas Tech University)

A Tale of Two Cities: A Comparison between Preclassic and Classic Formation of Two Maya Cities

Research on ancient Maya cities is generally modeled after large sites with massive architecture, dynastic burials, and written records documenting the activities of divine rulers. However, the development of these cities is the exception, rather than the norm, since the majority of Maya sites did not reach such enormous proportions, yet many of them likely qualified as cities from a functional standpoint. Hence, a research on non-massive cities, “from the bottom up,” is crucial to understand the development of ancient Maya urbanism. Investigations at the archaeological sites of Chan Chich, in northwestern Belize, and Kuic, in the Puuc zone of the Yucatán Peninsula, have recovered evidence of emerging and established monumental precincts during the early Middle Preclassic and Late Classic period, respectively. The different social and political developments of these sites are in tandem with the construction of architectonic complexes defined as royal courts, the heart of ancient cities. In this paper, using stratigraphic, architectural, and artifactual evidence, we examine the role of non-dynastic cities in the urbanization of the Maya lowlands. Research at these two sites illustrates distinct social processes, at different times and places, both of which resulted in local traditions of cities and court authority.

Gallareta Negrón, Tomás [18] see Ringle, William

Galle, Jillian (The Digital Archaeological Archive of Comparative Slavery), Lindsay Bloch (Florida Museum of Natural History), Jeffrey Ferguson (Archaeometry Laboratory, University of Missouri Re), Fraser Neiman (Monticello) and Suzanne Francis Brown (University of West Indies)

Ceramic Manufacturing and Distribution Networks in Early Jamaica: Interpretive Implications of LA-ICP-MS and NAA Analyses on Coarse Earthenwares from 18th-Century Plantation Contexts

Archaeologists have long been intrigued by hand-built, open-fired coarse earthenwares found on 18th- and 19th-century sites occupied by enslaved Africans in the Caribbean and United States. In Jamaica, these hand-built coarse earthenwares, often referred to as Yabbas, were likely manufactured and marketed by enslaved specialists. Several different varieties of glazed and kiln-fired coarse earthenwares, not easily assigned to a known ware-type, are also routinely found in plantation contexts. Their origins, and the role they played in local markets, are debated. This poster presents the interpretive implications of the results of laser ablation-inductively coupled plasma-mass spectrometry (LA-ICP-MS) and neutron activation analysis (NAA) on nearly 400 coarse earthenware sherds from eighteenth- and early-nineteenth-century plantation contexts across Jamaica. Using comparative datasets from the US, UK, and Caribbean, we pinpoint sources for the coarse earthenware and explore the temporal and spatial patterns in the use of earthenware from different sources. Finally, we assess how changing consumer demand by both enslaved Africans and plantation owners influenced ceramic manufacturing and distribution networks in early Jamaica.

Galle, Jillian [51] see Neiman, Fraser

Gallivan, Martin (William & Mary)

Violence, Dislocation, and Social Transformation in the Chesapeake, AD 1300–1500

Beyond the Mississippian frontier in Southwest Virginia, Algonquian and Siouan societies in the Chesapeake pursued their own culture histories, evidently independent of developments in the American Midcontinent and Southeast. And yet, between AD 1300 and 1500 a set of social changes cascaded from the Blue Ridge Mountains to the Chesapeake Bay which may correspond with developments highlighted in this symposium. How did the late precolonial collapse, social fragmentation, and violence of the broader Eastern Woodlands intersect with Chesapeake culture histories? This paper begins to assemble the evidence from which to explore this question. In the Ridge and Valley province, ceramic distributions point toward rapid population shifts while stoutly-fortified settlements began to appear with frequency by the fourteenth century. Piedmont and Coastal Plain communities
also began to raise palisades at the same time that they adopted communal burial practices, ramped up maize production, and constructed ceremonial ditch enclosures at central places. Not all of these developments link directly to the collapse of Mississippian mound centers and resulting social dislocation, yet it is also clear that Native societies in the Chesapeake were entangled within historical processes which played out over multiple scales.

Gallivan, Martin [328] see Shephard, Christopher

Galván, Melissa (Tulane University), William Ringle (Davidson College) and Betsy Kohut (Millsaps College)

[162] Recent Research on the Formative and Early Classic Periods in the Yaxhom Valley, Yucatán

Previous investigations by the Bolonchen Regional Archaeological Project demonstrated that the Valle de Yaxhom, in the Pucu region of Yucatan, was a significant locus of monumental construction during the latter Middle Formative and early Late Formative. Two large acropoli, the Acropolis Yaxhom and the Acropolis Lakin, were previously mapped and tested, but the nature of akín, were previously mapped and tested, but the nature of the relationship between these two sites remained unknown. Two other sites with megalithic architecture, Nucuchuntuich and Nohoch Cep, suggested a transitional occupation from the Late Formative to the Early Classic period based upon limited reconnaissance. LIDAR coverage of the region in May of 2017 facilitated the identification of a great many more structures as well as contextualizing them in their physiographic settings. As a result, we identified two large platforms that were anomalous in form and located close to the Acropolis Lakin as candidates for test excavations. Five other sites were intensively surface collected. Given our uncertainty as to the date of the megalithic sites and our lack of an Early Classic ceramic sample, we also targeted the main civic structure from Nucuchuntuich for testing. This paper reviews the results of this work together with comments on the ceramics collected.

Gamble, Lynn (University of California, Santa Barbara)

[170] Origin and Use of Shell Bead Money in Southern California

The Chumash Indians of southern California made and used beads of stone, bone, and a variety of species of shell for over 8,000 years. A noted shift in shell beads occurred about 800 years ago with the appearance of a new bead type, cupped beads, made from the thick callus of the Callianax biplicata, a portion of the shell that had previously not been used. These types of beads were common throughout the Chumash region and elsewhere during the Late period and have been identified as money beads on the basis of their distributions in cemeteries and other contexts. They are more widely distributed than other bead types, indicating that most individuals had access to them, although certain individuals were buried with hundreds or thousands of cupped beads while others had significantly fewer. Ethnographic and ethnohistoric accounts document that shell bead money was used for many types of transactions, including the purchase of subsistence items such as fish, acorns, seeds, and otter skins; most manufactured goods, including steatite ollas and digging stick weights; and some services, such as transporting people or goods in plank canoes between the islands and the mainland.

Gamblin, Katherine (Florida State University)


Bourbon has been distilled in Kentucky throughout the state’s history and has influenced how cities in Kentucky have grown over time. Throughout the 1870s, a major rise in the number of distilleries in the state grew as wealthy patrons began buying up small, family-run distilleries and expanding them into a large-scale, booming industry that aimed to answer the demand for bourbon throughout the US. In order to fit the demand, bourbon barons began crafting ways to make more gallons per day, allow for consistency in flavor during aging from barrel to barrel, permit production to occur at a year-round basis, and ensure that customers would be consuming safe liquor. This poster presents some of the archaeological and historical evidence of innovations that allowed for the industrialization of the industry by looking at the Old Fire Copper (OCF) Distillery site, the R.P. Drake (later Turner Springs) Distillery site, and the Eagle (later Green River) Distillery site. Particular attention will be paid to how the sites adapted to the Prohibition period in the state of Kentucky and the US.

Gan, Yee Min [29] see Schulting, Rick

Gancz, Abigail (University of North Carolina, Chapel Hill)

[47] Raw Material Quality and Spatial Patterning at Shawnee-Minisink

The Shawnee-Minisink Site is one of the most spatially intact Paleoindian sites in eastern North America. Located in the Upper Delaware Valley of Pennsylvania, the site includes an occupation area spanning 60 x 95m which dates to circa 12,900 CalBP. Over 18,000 point-provenienced lithics have been excavated from a 360 meter-squared area. The lithic artifacts consist primarily of the local black flint as well as of various exotic cherts. Because the Acropolis Lakin and the Acropolis Yaxhom, were previously mapped and tested, but the nature of akín, were previously mapped and tested, but the nature of the relationship between these two sites remained unknown. Two other sites with megalithic architecture, Nucuchuntuich and Nohoch Cep, suggested a transitional occupation from the Late Formative to the Early Classic period based upon limited reconnaissance. LIDAR coverage of the region in May of 2017 facilitated the identification of a great many more structures as well as contextualizing them in their physiographic settings. As a result, we identified two large platforms that were anomalous in form and located close to the Acropolis Lakin as candidates for test excavations. Five other sites were intensively surface collected. Given our uncertainty as to the date of the megalithic sites and our lack of an Early Classic ceramic sample, we also targeted the main civic structure from Nucuchuntuich for testing. This paper reviews the results of this work together with comments on the ceramics collected.

Gandy, Devlin and David Robinson (UCLAN)


In rock art research the stratigraphy of a rock art panel can offer great insight into the temporality of a panel, which can then inform many other aspects of analytical inquiry. Yet, making the necessary distinctions between elements is often difficult—as images fade and are worn by time, or the subjective nuances of the recorder. This paper explores novel means of identifying, defining, and separating unique rock art elements in digital space within different digital methodologies.

Gandy, Devlin [214] see Robinson, David

Gann, Douglas (Archaeology Southwest)

[218] Digital Public Archaeology at Homol’ovi: The Arizona State Museum’s Contributions to the Digital Humanities

Under the guidance of E. Charles Adams and Richard C. Lange, the Homol’ovi Research Program (HRP) was one of the first archaeological research programs in the southwest culture area to incorporate three-dimensional computer aided drafting (3D CAD) into their archaeological practice. By the adoption of a 3D modeling strategy, the HRP was able to foster concurrent developments in new media technologies to better share archaeological research with the general public. Through the use of 3D modeling of deposit-based archaeological data, digital conjectural reconstructions, animations, and even virtual reality applications have been utilized to both further the interpretation of the archaeological record and share this record with an interested public audience. The experiences resulting from this effort served as a model of a variety of best practices and lessons learned for future research in digital public archaeology.

[320] Discussant

Gárate, David [285] see Rivera, Luz Stephanie
Artistic evidence of interactions is among the most salient and most debated in terms of the relationships that it represents between different polities. Based on my research on the topic of Classic Period interactions from the Pacific Coast of Chiapas, I have come to the conclusion that our perspectives are much too narrow. In Mesoamerica, color, composition, medium, style, and iconography among other elements of artistic form. In this paper, I would like to propose a more systematic approach to understanding interactions and their artistic manifestations using evidence from the Pacific Coast of Chiapas and Guatemala as a case study.

Garay-Vazquez, Jose (University College London), Michele Wollstonecroft (University College London) and Dorian Fuller (University College London)

[86] Tell me what you are eating and I tell you who are you: Differences in Subsistence Systems of Elite and Non-Elite Gamo Society of the Ethiopia Highlands during Historical Times

There is little archaeobotanical data from Ethiopia, in this presentation, we will be comparing samples from two historic domestic archaeobotanical sites spanning from late seventeenth centuries to the late eighteenth century AD within the same environment (Gamo highlands in Southern Nations, Nationalities, and Peoples Region (SNNPR), Ethiopia) with the intention of examining status differences through subsistence remains. The food habits of past human societies are of importance because the act of cooking is a central task for humans, and various social phenomena influence the activities of food procurement and production. The research question guiding this investigation is What status differences can be identified between Gamo Malia and Gamo Tsoma-mala society through the archaeobotanical analysis of charred plant remains, and to what extent does this information reflect aspects of social identity and community boundaries. The status differences were not identifiable since the archaeobotanical assemblages were composed of similar taxa. Detailed examination of samples using scanning electron microscope analysis provided data of processing practices, and cooking preferences of tuber foods from non-elite contexts on the southwestern highlands. The presence of cotton in both archaeological sites raises the possible cultivation of a cotton species indigenous to the highlands.

Garbellano, John Michael and Christopher Wolff (University at Albany)

[50] Maritime Archaic Spearpoints: A New Examination of Their Context and Chronology

This research focuses on the morphology, chronology, and provenience of nipple-based spear points found in Newfoundland and Labrador. Nipple-based points are primarily thought to date between 7500–6000 B.P. and are associated with the early Maritime Archaic tradition, Newfoundland and Labrador’s earliest inhabitants. A recent find of a nipple-based point at the Stock Cove site (CKA1-3) in eastern Newfoundland suggests that, based on a series of new AMS dates, the chronology of this point type either extends deeper into the Archaic period or eastern Newfoundland was colonized earlier than previously thought. Lithic analysis of the Stock Cove artifact will be discussed and the results will be put into the larger cultural context of Maritime Archaic lithic technology and what it might mean about the colonization process of eastern Newfoundland.

Garber, James [43] see Bentley, Heath

Garcia, Yesenia [54] see Ullah, Isaac

Garcia-Des Lauriers, Claudia (California State Polytechnic University, Pomona)

[209] Towards a More Systematic Approach to Analyzing Artistic Influences: A View from the Pacific Coast of Southeastern Mesoamerica

Artistic evidence of interactions is among the most salient and most debated in terms of the relationships that it represents between different polities and regions. Traditionally, the focus of analysis is on stylistic and iconographic influences and a discussion of retention of original meanings or evidences of disjunctions. Based on my research on the topic of Classic Period interactions from the Pacific Coast of Chiapas, I have come to the conclusion that our perspectives are much too narrow. In Mesoamerica, color, composition, medium, style, and iconography among other elements of art must be taken in consideration as well. Each of these components can be potentially leveraged to signify specific meanings and relationships in artistic form. In this paper, I would like to propose a more systematic approach to understanding interactions and their artistic manifestations using evidence from the Pacific Coast of Chiapas and Guatemala as a case study.

[112] Discussant

Garcia-Des Lauriers, Claudia [19] see Hinojosa, Marlen

Garcia-Rutnam, Alex (University of Wyoming), Melissa Murphy (University of Wyoming) and Christopher T. Fisher (Colorado State University)

[169] Bioarchaeological Insights into Social Resilience and Change during the Postclassic at the Ancient Purépecha City of Angamuco, Michoacán, Mexico

Little is known about the impact of Purépecha Empire formation on the skeletal health and well-being of communities within the core zone of the Lake Patzcuaro Basin, Michoacán, during the Postclassic period (AD 1000–1500). Here we report on recent bioarchaeological investigation of 19 mortuary contexts from the ancient Purépecha city of Angamuco located within the imperial heartland. We have identified at least seven different mortuary treatments from Angamuco and we compare these contexts with what is known from other Tarascan sites. A total of forty individuals were examined from the burials, including four males, thirteen females, thirteen individuals of indeterminate sex, and ten subadults. All of the individuals were examined for evidence of nonspecific indicators of physiological stress (politic hyperostosis, dental enamel defects, peristomal reactions), disease and systemic stress, traumatic injury, degenerative diseases, and body modification, among other conditions. These pathological conditions, coupled with the results of stable isotopic analysis of bone carbonate and collagen, yield important insights regarding the impact of empire formation on the Angamuco population.

Gardner, A. Dudley (Western Wyoming College)

[43] Apishapa Structures and Subsistence Strategies in Purgatoire Canyon Colorado

From 2002 to the present we excavated five Apishapa Structures in the Purgatoire Canyon. This presentation will provide a brief synthesis of structural types and food ways of the sites inhabitants. It appears that maize and a variety of wild plants made up a considerable portion of the Apishapa diet. Analysis of the floral remains from these sites indicate the sites inhabitants relied heavily on available edible plants but also consumed exotics such as pecans. This brief summary sets forth our initial analysis of macro and micro floral samples from excavations along the Purgatoire River.

Gardner, Robert (University of Texas at San Antonio) and Robert Hard (University of Texas at San Antonio)

[91] Creating 3D Models of Artifacts and Features using Photogrammetry

During the 2015 and 2016 University of Texas at San Antonio Field Schools we made use of new low-cost photogrammetry techniques to document metates and rock ring features at Early Agricultural period sites along the Upper Gila River in southeastern Arizona. We systematically photographed a number of ground stone tools and rock ring features using point-and-shoot cameras. These photos were then processed using Agisoft’s Photoscan software to produce colored 3D computer renders of the artifacts and features. We were able to demonstrate that our method produces models that are accurate to the shape and scale of the physical items. This method also allowed us to document them with minimal impact to the features and without collecting the artifacts. While still in the early stages of development, this approach may have long-term potential to enhance archaeological documentation and collaboration.
INDIVIDUAL ABSTRACTS OF THE SAA 83RD ANNUAL MEETING

Gardner, Robert [105] see Hard, Robert

Garnica, Marlen [176] see Robinson, Eugenia

Garrard, Karen (POWER Engineers, Inc.)

[183] Where Are the Boot Marks? Evaluating the Overmountain Victory National Historic Trail

The Overmountain Victory National Historic Trail is a Revolutionary War route used by an estimated 1,040 patriot militia during the Kings Mountain campaign of 1780. It totals approximately 272 miles from the mustering point near Abingdon, Virginia, to Sycamore Shoals (near Elizabethton, Tennessee); from Sycamore Shoals to Quaker Meadows (near Morganton, North Carolina); from the mustering point in Surry County, North Carolina, to Quaker Meadows; and from Quaker Meadows to Kings Mountain, South Carolina. Almost none of the route exists as an original and discernible trail and there are many places where the route has been heavily disturbed or encroached upon by modern land uses. There are currently 19 National Historic Trails in the United States, delineated to follow as closely as possible the original overland or water routes important to the history of the nation. How do you best evaluate, protect, and preserve not only an extremely long linear cultural resource but also one that has little to no physical manifestation?

[183] Chair

Garratty, Christopher (Logan Simpson)

[69] Non-native Incorporation of Native American Technologies in Historic Period Arizona

Numerous archaeological studies of European-Native American interaction in the Americas during the colonial and historic eras focus on the processes by which Native American households and communities procured and adopted (or resisted the adoption of) European technologies and material culture. Comparatively few studies have addressed instances in which non-Native households incorporated Native American technologies and material culture. Recent archaeological investigations in Tempe and Phoenix, Arizona, show that many non-Native households procured and used Native American pottery during the late 1800s and early 1900s, including undecorated pots designed for domestic use. Some pots might have been obtained as souvenirs or art pieces, but the majority appear to have been obtained for utilitarian purposes, indicating a clear recognition and appreciation of the technical qualities of Native American-made pottery among many non-Native households. Examinations of the ceramics and their recovery contexts, in conjunction with a review of the historic record, help clarify the technical attributes, chronology, ethnic affiliations, and the social and economic contexts in which non-Native households adopted and used these Native American technologies.

Garraty, Christopher [39] see Graves, William

Garrett, Zenobie (New York University)

[197] The Diachronic Landscape of Ceremony at the Irish “Royal” Site of Dun Ailinne

The site of Dún Ailinne (Knockaulin) in County Kildare is one of four major ceremonial sites of the Irish Iron Age. Although numerous ceremonial centers of various size dotted the Irish landscape, Dún Ailinne, along with Teamhair (Tara), Emain Macha (Navan Fort), and Créachain (Rathcroghan,) stand out due to their size and location. These characteristics indicate that the sites would have been major foci of ceremonial activity, and would have impacted the ceremonial activity itself. Although excavations have largely focused on the sites themselves, archaeologists have long acknowledged the importance of the larger “sacred” landscape in which these major ceremonial sites are situated, postulating that their proximity, visually and physically, to other sites in the landscape would have had an important effect on the performance and experience of ritual and ceremony. As such, these landscapes are not “monolithic” entities of sacredness, but have unique developmental trajectories that may have played an important role in shaping and reflecting emerging ideas in the local community. This paper seeks to understand how the development and evolution of the larger landscape would have impacted the local performance and experience of ritual and ceremony at Dún Ailinne.

Garrido, Francisco (Museo Nacional De Historia Natural) and Diego Salazar (Universidad de Chile)

[100] The Diversity of Mining Infrastructure and Organization in the Southern Provinces of the Inca Empire

Despite the importance of mineral and metal production for the Inca’s political economy in the Collasuyu, mining infrastructure during this period encompasses a range across scale, spatial structure and labor organization. This diversity reflects both the variability of Inca state interventions and independent entities’ working outside of the imperial political economy. Genesis of value is by Inca-style architecture, including formal public spaces or plazas; social-aggregation practices for political ends; Inca-sponsored productive rituals; a functional differentiation in the spatial organization of the campsite (which also reflects social differences within the mining community); a focus on ore extraction rather than multicrafting; and a state-sponsored nonlocal provisioning of agricultural produce. Yet simultaneously and intriguingly, some sites do not fit these parameters, and maintain a continuity with previous forms of mining exploitation. In some cases, such sites of typically small-scale mining represent the prevalence of local groups of aspiring elites that required a constant supply of sumptuary goods for their social differentiation. Thus, this presentation argues that these different mining modes represent the diversity of economic conditions during the Late Horizon in the distant provinces of the Inca empire.

Garrison, Amanda (Central Michigan University)

[205] Bones at the End of River Street: A Graphic Ethnography of a Bridge in Lansing, Michigan

There are bones of a bridge in Lansing exposed on the muddy banks of the Grand. In this cityscape, a “Sortatropolis”, a once urban space now emaciated and exhausted. There would have been nothing special about this bridge to make its 1987 demolition, its absence, a remarkable tragedy, except that its disappearance can be directly connected to the long exhale of this once thriving capital. The Sortatropolis is haunted by the ghosts of auto industry moguls, lumber barons, and boot-strapping millionaires, and in the mix of dirt and time, the stories of those that escape history’s telling outnumber those presented; the same ghosts lauded for the sake of those who are privileged to make their own destinies. There are politics to and in forgetting. This paper will be a graphic presentation of the story of this bridge: the River Street bridge in this Rust Belt city of Lansing, Michigan reveals the interests embedded with racism, misogyny, class politics, and the State, along with concrete and steel that used to span the Grand River and connect the city to itself. The bones mark the consequence of change, the making of “progress,” and an unleashing of capitalism on the Sortatropolis.

[205] Discussant

[205] Chair

Garrison, Ervan [177] see Cutts, Russell

Garrison, Thomas (Ithaca College)

[80] Living in a Contested Landscape: Adapting Settlement Decisions in the Buena Vista Valley, Peten, Guatemala

Conflict pervaded the civilizations of ancient Mesoamerica from an early time. In the Maya lowlands, the physical vestiges of defensive fortifications date to the Late Preclassic period, while textual evidence of conflict comes from the subsequent Early Classic period. This paper examines settlement changes within the context of a contested landscape. The Buena Vista Valley, largely controlled during the Classic period by the kingdom of El Zotz,
extends out west from the great city of Tikal. However, the Preclassic city of El Palmar preceded this kingdom, established by the first lowland settlers on the western edge of a large wetland. Originally considered a minor site, LiDAR data reveals that El Palmar was in fact a sizeable early community that would have rivaled the emerging kingdom at Tikal. El Palmar was suddenly abandoned between AD 100–200 and a century later, elite settlements emerged on heavily fortified, escarpment edge hilltops. The pervasive Preclassic residential platforms on the valley floor were never matched during the Classic period. Household construction techniques varied by elevation during the Classic period, suggesting that the geopolitical interactions of the local dynasty at El Zotz did in fact affect the greater population and not simply elites.

Garrow, Duncan [113] see Sturt, Fraser
Garvie-Lok, Sandra [288] see Fox, Sherry

Gary, Jack (Thomas Jefferson’s Poplar Forest) [39]  
Regular Irregularity: Archaeological Evidence at Thomas Jefferson’s Poplar Forest for Intersecting Garden Traditions  
The geometric structure of 17th through 19th century designed landscapes in Virginia has been well documented archaeologically. The composition of elements in these landscapes shows how their designers manipulated geometric forms, architectural conventions, and standardized measurements to impose order in the garden. By the end of the 18th century fashionable American gardens tended towards irregular picturesque compositions, however the arrangement of individual garden elements to achieve that effect was rooted in the established traditions of geometric regularity. The interplay between these two styles can be seen explicitly at Poplar Forest, Thomas Jefferson’s retreat and plantation in Bedford County, Virginia. Not only does the overarching structure of the designed landscape exhibit this quality but archaeological evidence also shows how geometric forms structured individual garden elements. Archaeological remains of “tree clumps”, a staple of picturesque English landscapes, reveal Jefferson’s use of various geometric forms to create a naturalistic composition. This paper will contextualize this archaeological evidence through a synthesis of period gardening treatises in Jefferson’s possession and an examination of his designed landscapes. The result is a more nuanced understanding of the evolution of early American garden design.

Garza, Elíasandro (CUNY) [77]  
Spondylus Shells in Pre-Columbian Copan: Their Religious and Economic Significance  
This work offers a brief discussion on the importance of Spondylus princeps and Spondylus calcifer in the ceremonial, and economic life of ancient Copan. Archaeological contexts at the site indicate that the uses of Spondylus, either as non-worked valves, or finished artifacts was restricted to a small high-status sphere of Copan society. Additionally, contextual data indicate that the Spondylus was used in a least three ritual activities: as offering in burials; caches; and canceling of building. These uses of Spondylus shells appear to be constant from the Early Classic to the Late Classic period. The lack of information from the Postclassic period, hinders conclusions regarding the commerce of Spondylus shells during this time. The two species of Spondylus analyzed in this work are found in the Pacific Coast, from California down to Ecuador. Defining the chronology of the Spondylus chain of production, and the frequency of acquisition offers an opportunity to add new data on economic, and political interaction between Copan and others neighboring settlements in the Maya and non-Maya area.

Garzon-Oechsle, Andres (Department of Anthropology, Florida Atlantic University) [324]  
Results of Survey and Analysis of Manteño Archaeological Sites with Stone Structures in the Upper Río Blanco River Valley, Manabi, Ecuador  
This paper will present the results of a three-year effort to survey and document Manteño archaeological sites with stone structures within the limits of the Upper Río Blanco River Valley in Southern Manabí. The region is home to 40 known Manteño sites with more than 100 stone structures across the river valleys of La Encantada, Las Tusas and La Mocora that carve the foothills of the Bola de Oro mountain. The Florida Atlantic University Archaeological Fieldschool in Ecuador, directed by Valentina Martínez, recorded 23 of these sites and 94 stone structures in the summers of 2015, 2016 and 2017. The analytical portion of this study utilizes the dimensions and features along with the location and orientation of each structure to create categories that will serve to better understand how the Manteño utilized their space. Geostatistical tools in GIS helped create categorical maps for interpretation. Our results suggest that the Manteño maximized their ability to utilize the limited available flat space and densely occupied the area. These Manteño settlements in the foothills of Bola de Oro are not small peripheral occupations but mirror the large dense populated foothills of other Manteño centers such as Jaboncillo y Hojas in central Manabí.

Gastelum-Strozzi, Alfonso (UNAM), Ingris Peláez Ballestas (Servicio de Reumatología Hospital General de México), Jesús Zarco Navarro (Centro inah-Michoacán, Instituto Nacional de Antro) and José Luis Punzo Díaz (Centro inah-Michoacán, Instituto Nacional de Antro) [55]  
Tomography and Photography Studies of Funerary Urns from South Central Michoacán México  
This poster presents the results of the application of computational methods to classified archaeological deposits contained within cinerary urns. The method uses morphological properties and textural parameters to create quantitative descriptors that can be related to archaeological interpretations of the objects. The Pre-Columbian cinerary urns were discovered in the municipality of Huetamo, Michoacan, Mexico. The method uses information obtained from a Computerized Tomography scan of each urn and photography of fifty bones separated into five sets classified by anthopology experts with respect to their color and the relation of the color to the temperature at which the bone was burned. From the scans and photographs, topological, morphological, and textural parameters are obtained. The CT-scan provides form and textural information related to density values and the photograph provides mean color values of each set related to the temperature. Finally, the relation of voxel intensity (CT-scan) is related to bone color image textures. To simplified this section of the research a phantom is proposed where an artificial cinerary urn was build using bones from the excavation providing with an urn where the bone color of each volume obtained from the CT-scan is known.

Gastelum-Strozzi, Alfonso [55] see Castillo Flores, Fernando

Gatenbee, Amy (University of South Florida) and Thomas Pluckhahn (University of South Florida) [94]  
Making Theory Fun: Combining Archaeological Theory with Active Learning Exercises in Teaching North American Prehistory  
Active learning opportunities within undergraduate archaeology courses enable students to move beyond memorizing culture history. In a North American Archaeology course taught at the University of South Florida, we combine concepts from archaeological theory with active learning exercises specific to North American culture areas. Examples include students weighing the costs and benefits of hunting megafauna with atlatls from varying distances, playing a game centered on Great Basin-themed optimal foraging decisions, recreating a Pacific Northwest Coast potlatch, and partaking in a Cahokian game of chunkey. By incorporating a variety of active learning opportunities, with lectures that welcome student discussion, and readings from popular archaeology topics, a North American Archaeology course becomes an interactive opportunity for undergraduate learning and community-building.
Gauthier, Nicolas (Arizona State University) [221] Agricultural Niche Construction in Roman North Africa: Simulating Irrigation and Deforestation on a Desert Margin
Earth system models are climate models capable of simulating land-atmosphere feedbacks and the complex biogeochemical and biogeophysical processes that drive them. These models are particularly well-suited to studying the impact of preindustrial land use on regional climate change, as they explicitly resolve the impacts of irrigation, deforestation, and agropastoral production on the flow of water and energy between the land and atmosphere. Generating realistic maps of past land use is a difficult task, so paleoclimatologists often rely on static, coarse-resolution estimates derived from present-day conditions. In this poster, I present agent-based modeling as an alternative method to generate dynamic land-use maps that continuously contribute to and adapt to environmental variability. Using Roman North Africa as a case study, I show how such a coupled modeling approach is indispensable for understanding the coevolution of human societies and their natural environments.

[234] Discussant
Gauthier, Rory P. [269] see Van Vlack, Hannah

Gay, Brandon and Paul Goldstein (UC San Diego) [100] A Sense of Place: A GIS Study of Late Intermediate Period and Inca Settlement Patterns in Moquegua Peru
This study investigates geospatial relationships among Late Intermediate Period (1000–1400 CE) and Inca settlement patterns within the Moquegua River drainage of southern Peru which were first identified in the 1990s by the Moquegua Archaeological Survey (MAS). A prevalence of walls and defensive locations and a largely vacant no-mans-land between downvalley Chiribaya and Chiribaya-San Miguel and upvalley Estuquía settlements likely evidences an increased level of inter-cultural conflict in the region during the LIP that may have continued in the Late Horizon. Inca influence locally appears to be indirect, and primarily through interaction with some Estuquía sites, suggesting connections with highland partners. Using viewed and comparative least-cost analyses in ARC-GIS, this study explores how Chiribaya, Estuquía and Estuquía-Inca settlements interacted or competed for the surrounding river valley through their direct or indirect control of resources, and their ability to defend against each other. Through the identification of these prime factors, this study aims to understand how the placement of settlements corresponds to the larger web of social interactions.

Gayo, Eugenia (Center for Climate and Resilience Research (CR), Calogero Santoro (Instituto de Alta Investigación, Universidad de Ta), Claudio Latorre (Departamento de Ecología & Centro UC del Desierto), Virginia Mcrostie (Programa de Antropología, Instituto de Sociología) and José M. Capriles (Department of Anthropology, Pennsylvania State) [105] Assessing Impacts of Late Holocene Environmental Variability on the Demography of Prehispanic Societies in Northern Chile (18°-29°S)
Agricultural communities began to spread over much of the Atacama Desert (18°-29°S) at 3.5 ka BP, triggering unprecedented levels of population growth. Inland areas and particularly along desert oases, this phenomenon featured increasing complexity in food-production systems and sedentary lifestyles with population aggregating in architecturally complex villages. Whereas, littoral populations maintained marine foraging and fishing strategies with limited inland food-resources. Both lifestyles persisted up to the European conquest, which came on the heels of significant population decline throughout the entire continent. Here, we bring together paleoecological, archaeological and paleodemographic evidence to explicitly explore the role of past ENSO-induced climate changes in determining spatial convergences/divergences in demographic trajectories, temporal continuities/discontinuities in resource exploitation (i.e. subsistence-strategy), and technological/cultural innovations of Atacama Prehispanic populations. Results show that over the previous three millennia these societies underwent important centennial-scale demographic fluctuations. As agrarian and foraging strategies are highly sensitive to water availability and ecosystem productivity in this arid bioclimate, both coastal and inland groups experienced boom-bust cycles. Changes observed during the last 3.5 ka BP correlate with variations in the activity/intensity of ENSO, a major driver for modern bioproductivity and variations in hydroclimate. Acknowledgments: FONDAP #1511009, CAPES FB-0002–2014, Anillo SOC1405, PCI PI120150081, PFB-23 (IEB).

Gayo, Eugenia [86] see Mcrostie, Virginia
Gearheard, Shari [195] see Strawhacker, Colleen
Geber, Jonny [296] see ODonnabhain, Barra

Geib, Phil (University of Nebraska-Lincoln) [164] The Kaiparowits Pueblos: Kayentan or Virgin Migrants?
More than 50 years ago archaeologists identified a high-density of Puebloan habitations on the Kaiparowits Plateau in southern Utah. Analysis of pottery from these habitations by James Gunnerson and Florence Lister resulted in conflicting interpretations of cultural affiliation. Gunnerson argued for a Virgin affiliation whereas Lister argued for a Kayentan affiliation. Lister’s interpretation triumphed and the Puebloan occupation of the Kaiparowits...
was attributed to migration from the south during Pueblo II. Architectural and artifactual evidence fails to support a Kayentan migration but rather an expansion of Puebloan groups from the west and southwest.

Geiger, Elspeth (University of Michigan)


There has been a growing recognition within studies from across the US that the dynamics of contact-period interactions are not a homogenous process. Instead, the diversity inherent in these interactions points to the need for further research on local manifestations of these European and Native contact situations.

In this paper, I analyze material recovered from the Summer Island Site off the coast of Garden Peninsula in MI. The Anishinaabeg communities within Northern Michigan were connected through complex kin networks and trade relationships that allowed clans to take advantage of new trading opportunities. The goal of this paper is to discuss archaeological implications of ethnic and social boundaries at the periphery of the Straits of Mackinac.

Gentil, Bianca (The Pennsylvania State University)

[48] The People’s Response to Change: Settlement Patterns During the Classic-Postclassic Transition in the Puebla-Tlaxcala Valley, Mexico

The Puebla-Tlaxcala Valley in Central Mexico went through significant settlement, economic, and political shifts during the Classic-Postclassic transition, yet there is no clear picture of what happened during the Epiclassic (600–900 CE) or the Early Postclassic (900–1250 CE) outside of large primary sites such as Cacaxtla and Cholula. A multi-faceted study was developed to target this issue, with a particular focus on rural sites that supported known large centers. Since the early years of archaeology, settlement pattern studies provide a regional perspective necessary to fully comprehend the social, economic, and political dynamics of a particular society. Based upon surveys conducted in the 1960s and 70s, presented here are the results of a key-site survey of 20, small, mid-level, and large sites in the Puebla-Tlaxcala Valley and the analysis of site associated surface material. This survey provides a foundational step in the overall goal of anchoring the chronology, exchange networks, and understanding of the overall development of the region during a time of strong social, ecological, and economic fluctuation.

Gentil, Verna (Georgia State University)

[330] Settlement Patterns at the Ancient Maya Port Site of Conil

The ancient Maya port site of Conil is located in the modern community of Chiquilá on the north coast of Quintana Roo, Mexico. In 1528 Francisco de Montejo, a Spanish conquistador, reported that Conil was a large town consisting of 5,000 houses. William Sanders was the first archaeologist to work at the site in 1954, but the site core was not formally mapped until 2005 by Glover. Further work was conducted in 2014, 2016, and 2017 as part of El Proyecto Costa Escondida (PCE). Data collection and analysis for these surveys was conducted through the use of advanced geospatial technologies. Based on the findings of this work, Conil appears to have been one of the largest settlements along the northern coast of the Yucatan during those periods of occupation, the first dating to the Late Preclassic and the second, dating to the Late Postclassic. This paper will discuss the settlement patterns observed at this site as they relate to the periods of occupation and known sites within the region.

George, Nicole (University of Nevada, Reno)

[92] A Geochemical Analysis of Concave Base and Western Stemmed Tradition Projectile Points in Southeastern Oregon

The relationship between concave base and Western Stemmed Tradition (WST) projectile points in the Great Basin is not well-understood. They may represent sequential Late Pleistocene technologies, coeval technologies used by different ethnolinguistic populations, or different components within the same toolkits. To explore the latter possibility, I collected geochemical sourcing data for both types of artifacts recovered from three adjacent valleys in southeastern Oregon: (1) Warner Valley; (2) Guano Valley; and (3) Hawksy Walksy Valley. I compared source provenance to determine if there were significantly different toolstone conveyance patterns, with the expectation that there should be no differences if concave base and WST points were part of the same toolkit. The results provide insight into what the two Late Pleistocene technologies may tell us about how and when groups colonized the northern Great Basin.

Geraldes Teixeira, Wenceslau [116] see Rebellato, Lilian

Gerard, Paul (California State University, Los Angeles), Matthew Napolitano (University of Oregon), Geoffrey Clark (Australia National University) and Scott Fitzpatrick (University of Oregon)


The initial human settlement of Yap, Western Caroline Islands (northwest tropical Pacific), is one of the least understood in Pacific prehistory, although new archaeological research is beginning to address this issue. Excavations at the southern site of Pemrang in Yap, western Caroline Islands (northwest tropical Pacific) have revealed multiple rich, well-stratified deposits of shell and pottery spanning the known occupation sequence of Yap and extended the date of early human activity by ca. 400 years to ca. 2400–2200 cal BP. A stark difference in the type of shell recovered from two deposits, supported by a suite of new radiocarbon dates, suggests rapid environmental change in southern Yap. This paper presents preliminary results of isotopic analysis (13C and 18O) of radiocarbon dated shell to identify nearshore ecological conditions in southern Yap at the time of initial human settlement.

Géraud, Manon (TRACES UMR5608—Université de Toulouse Jean Jaurès), Florian Térygeol (LAPA-IRAMAT, NIMBE, CEA, CNRS, Université Paris-Sa) and Florent Hautefeuille (TRACES UMR5608, Université Toulouse—Jean Jaurès)

[23] An Integrated Approach to Ceramic Material of Commingeoise, a French Late Medieval Ware (13th–16th c.)

“Commingeoise”, a Late Medieval domestic ware of southern France, is a very current but problematic diagnostic artifact, as it has thus far been poorly defined. The chronology of its production is first of all not precisely established. Furthermore, a simple macroscopic description has historically been used to identify this ceramic type. A more rigorous characterization is necessary in order to clearly define Commingeoise. Finally, although dispersed throughout a large and relatively well-defined geographic area, no production workshop of the Commingeoise has been identified so far, and the domestically utilized pots characteristic of this ceramic type are generally produced locally. Thereby, this research discusses new developments in answering the questions on its origins, homogeneity, and organization of production and diffusion. To answer all these different issues, and to develop a broader understanding of Commigeoise ware, this research employed multidisciplinary methods. A typo-chronological study was carried out to standardize chronological data on Commingeoises. It was completed by technological study and experimental archaeology to identify the technologies used in the chaîne opératoire of this ceramic type. In addition, bulk chemical analysis (of both ceramics and sampled raw materials) and petrography enabled advancements in characterizing and determining the origins of Commingeoise ware.
Individually Abstracts of the SAA 83rd Annual Meeting

Geurds, Alexander (University of Oxford)
[108] The Original Is (Still) the Winner: Replicas and Fakes as Bound by Authenticity
Authenticating relations are defined by artisanship, temporality, value-making and ethnographic authority. These relations are visible in contemporary museum settings as well as in the art world as such, and may be particularly poignant in the case of the Caribbean and Central America with its diverse manifestations of emotive styles and materials such as wood and stone. Historically deep and widespread, 19th and 20th century Central American trafficking of pre-Columbian things was tied to foreign-owned plantations and centred on San Jose, Costa Rica, leading to a scarcity of a ‘Nicaragua’ provenance indicator in current-day museum signage. Eventually, archaeology emerged from such uncontrolled collecting and now works to counter looting, yet market demand for objects remains stable. This paper explores the ongoing resilience of authenticity and its persistence in the global art market. I argue that this is in part due to the ascribed inspirational value Amerindian objects hold in modern art, as argued in the notion of primitivism. Primitivist art is seen in opposition to modernity, ascribing it legitimacy through temporal or cultural distance. With some exceptions, programs focussed on revitalizing artisanship and producing high-quality copies or working on stylistic and technical innovations are countered by rendering this primitive authenticity.

[263] Chair
Geurds, Alexander [323] see Donner, Natalia

Ghaheri, Fatemeh
[86] Neo-Assyrian Empire: Agriculture and Agricultural Strategies Based on Phytolith Analyses
The Neo-Assyrian empire is known as one of the major empires in the Ancient Near East. Ruling in Mesopotamia during the Iron Age, they had a well-organized agricultural system. In this paper, I will utilize phytolith analyses to investigate the impact of the Neo-Assyrian empire on agriculture and land-use. I will compare the elite-controlled agriculture with the crop choices of peasant farmers. It’s likely that the peasant farmers would have chosen more resistant and reliable types of plants for their own food which would reduce the risks of unexpected natural disasters such as droughts and floods. In order to conduct this research, I use phytolith data from Iraqi Kurdistan, at on-going excavations of Assyrian-period sites in the Peshdar Plain, including two main sites: Gird-i Bazar and Qalat-i Dinka, directed by Professor Karen Radner, University of Munich. These two sites are very promising for this research. Gird-i Bazar is a non-elite farming and production village, and Qalat-i Dinka is an administrative center being sustained by Gird-i Bazar. Thus, the two will cover the empire’s impact on agriculture and the farmers’ choices in cultivation and production.

Ghasidian, Elham (Leverhulme Centre for Human Evolutionary Studies, University of Cambridge) and Saman Heydari-Guran (Leverhulme Centre for Human Evolutionary Studies)
[174] Cultural Diversity in the Zagros Mountains and the Expansion of Modern Humans into the Iranian Plateau
Located in western Eurasia, at the crossroads of human migrations out of Africa during the Pleistocene, the Iranian Plateau stands at the centre of models of anatomically modern human dispersals out of Africa. This paper aims to understand the cultural diversity among the first modern human populations in the area, and the implications of this diversity to evolutionary and ecological models of human dispersal through the Iranian Plateau, by re-examining four key UP lithic assemblages from the sites Warwasi, Yafteh and Pasangar of the west central and Ghār-e Boof Cave of the southern Zagros Mountains of Iran.
The results demonstrate that there is a significant degree of cultural diversity rather than homogeneity among the UP throughout the different Zagros habitat areas as a result of the relative geo-topographical isolation of the different areas occupied favouring different ecological adaptations. Based on the chronological and geographical patterns of Zagros UP variability, we propose a model of an initial phase of localised and patchy development of the early UP in the region, with limited subsequent contact among these first UP groups. This has important implications for the origins of biological diversity in the early phases of modern human colonisation of Eurasia.

Giaccai, Jennifer [139] see Harrison, Ainslie

Giacinto, Adam [225] see Hale, Micah

Giardi, Michele [249] see Franchetti, Fernando

Gibb, James (Smithsonian Environmental Research Center)
[42] Pig Manure and Swill Sticks: Defining an Archaeological Site Type
Low-density scatters of historic-era artifacts can be interpreted as byproducts of manure spreading. These are pieces of trash inadvertently mixed with food refuse that was fed to pigs. While most of these artifacts were not ingested, they became mired in the resulting manure which farmers spread on their fields as fertilizer. Whether or not a scatter of late historic artifacts represents manure spreading or some other kind of behavior can be tested archaeologically, and that is the subject of this paper. Archival data confirm that archaeological findings at the Ellsworth K. Russell farm site (18AN917) in Maryland connect World War II era commercial and institutional kitchens in Washington, DC, with the feeding of pigs and subsequent use of their manure on nearby fields.

Gibbon, Elizabeth [211] see Jennings, Justin

Gibbons, Kevin (University of Maryland)
[195] Pervasive Landscapes of Inequality: Want and Abundance within a Hyperobject
As globalization matures, environmental, social, and economic factors continue to create ever-expanding landscapes of inequality. Among these drivers, human-driven environmental degradation has, for centuries, operated as a significant producer of inequality. Anthropogenic climate change today perpetuates and strengthens these multi-generational, regional-scale phenomena of landscape change. These processes, such as sediment erosion in Iceland during the past millennium, create a ‘second nature’ landscape of human design that create and reinforce resource scarcity and thus, social and economic inequality. These ‘second nature’ landscapes are self-perpetuating; their cause so viscous and nonlocal that they regularly defy our perception. Timothy Morton has referred to objects such as climate change as ‘hyperobjects.’ This paper discusses the implications of hyperobjects for archaeology and historical ecology in the context of the long-term roots and intersectional character of resource justice issues. Further work to understand and contextualize the multi-generational human-environmental feedbacks that perpetuation landscapes of inequality and resource scarcity has the potential to generate insights into contemporary dilemmas and provide archaeologists with anchors for advocacy strengthened by data over the longue durée.

[195] Chair
Gibbons, Kevin [195] see Perez, Erina
Gibbs, Martin [275]  
The People of Solomon: Performance in Cross-Cultural Contacts between Spanish and Melanesians in the SW Pacific 1568–1606

In 1568, 1595 and 1606 Spanish expeditions out of Peru explored the Solomon Islands (S.W. Pacific) with the intention of establishing colonies. The motivations for these voyages were an uneasy amalgam of ambitions for Imperial and familial advancement, attempts to find the gold mines of Ophir, and religious fervor for converting indigenous populations. Despite repeated historical retelling, little attention has been paid to the structures of the cross-cultural encounters described in the original narratives. Ethno-historical analysis reveals an extraordinary diversity of responses in these interactions, from prosaic trading, through to willful acts of physical and sexual aggression, and highly charged spiritual contests. While the Spanish presence was largely ephemeral, with even the nascent colonies lasting only several weeks, the sometimes dramatic shifts in status from transitory explorer, to colonist, to survivor often resulted in similarly significant transformations in relations with indigenous groups. Beyond the documentary record, the archaeological record also shows evidence of longer-term repercussions and attempts by indigenous groups to mitigate these transitory exchanges. In particular this paper will follow in the tradition of Australian Pacific ethno-historians such as Denning and Clendinnen in exploring the nature of performance within these cross cultural encounters.

Giblin, Julia I. [245] see Pardiktka, Györgyi

Gibson, Samantha (Florida Gulf Coast University, Dept. of Marine and Ecological Studies), Kylie Palmer (Florida Gulf Coast University), Sasha Linsin Wohlpaupt (Florida Gulf Coast University), Michael Savarese (Florida Gulf Coast University) and Karen Walker (Florida Museum of Natural History) [224]  
Late Holocene Oyster Reef Development and Its Impact on Calusa Natural Resource Utilization, Estero Bay, Southwest Florida

The Horseshoe Keys are an extensive oyster reef ecosystem within manageable paddling distance from Mound Key, Estero Bay, Southwest Florida, the site of the Calusa’s political center beginning ~AD950. The Calusa thrived in this bay, partially due to the natural resources available, including these oyster reefs. Sediment cores from this region show a rich history of reef development dating to ~2200 yBP. The reefs exhibit an ecological succession shifting from a vermetiform gastropod community to oysters ~600 yBP, a time when Calusa exploitation of oysters began at Mound Key. Reef history varies between the northern and southern regions of Horseshoe Keys. Northern reefs developed upon mangrove peats and began their history with a rich molluscan fauna indicative of a higher, near marine salinity. Alternatively, the southern reefs developed upon a graminoid marsh with subsequent bay and reef faunas dominated by brackish mollusks. These differences suggest that the Estero River was a formidable freshwater source near Mound Key with more marine conditions located short distances away within the reef tract. Studying these gradients from the geological perspective can be enriched with findings from the archaeology of Mound Key allows for a holistic understanding of environmental change and resource utilization by the Calusa.

Gibson, Taylor [293] see Sugiyama, Nawa

Gidusko, Kevin, John Schultz (University of Central Florida) and Mason Branscome (University of Central Florida) [88]  
Close-Range Photogrammetry Applications in Outdoor Forensic Scene Documentation

The use of close-range photogrammetry (CRP) for 3D documentation is becoming a standard practice for archaeological site documentation. Less explored, however, is the utility of CRP to document forensic scenes, especially those involving skeletal remains. Since digital camera documentation is already a standard practice at forensic scenes, additional data captured for CRP can be included alongside standard site photography. The purpose of this research is to demonstrate the utility of incorporating CRP into already established scene documentation protocols. To exhibit the process of outdoor scene documentation, three mock scenarios using faux human osteological material were created in a typical Central Florida pine flatwood environment: limited and large surface scatters, and a partial exhumation. Each scene was documented with a digital camera, both hand-held and mounted, as well as with and without ground control points. Overall, the 3D models constructed of the burial proved to be more conducive to CRP due to the uniformity of the ground surface. The models constructed of the ground surface scatters proved more difficult to create due to the complex nature of the ground surface vegetation. Additionally, an overview of best practices for field data collection, post-processing standards, and output capabilities will be further discussed.

Giersz, Milosz (University of Warsaw) [211]  

Since the fundamental work of Dorothy Menzel, it has been suggested that a new center of power and prestige arose on the North-Central Coast of Peru during the late Middle Horizon, and that its focal point was probably located in the Huarmey Valley. Unfortunately, this hypothesis has not been empirically verified for more than 40 years, due to the lack of strong evidence based on systematic archaeological research. Since 2010 an international team of scholars performs multidisciplinary research at Castillo de Huarmey, a Middle Horizon coastal provincial center and Wari necropolis, where imperial mausoleum with the first undisturbed Wari high elite women’s multiple burial was discovered. Using a broad methodological spectrum, including bioarchaeological and biogeochemical analyses, archaeometry, geoarchaeology, 3D HDS scanning and architectural analysis, the archaeologists brought to light local Middle Horizon cultural panorama and the nature and chronology of Wari imperial presence in its northwestern province.

Gifford, Chad [98] see Connell, Samuel

Gifford-Gonzalez, Diane (University of California, Santa Cruz) [338]  
SAA’s Efforts to Create a More Inclusive Climate: Educating to Prevent Sexually Motivated and Other Forms of Harassment and Violence

In 2015, the Executive of SAA discussed the need for action on its part to define SAA’s position regarding sexual harassment and violence, as well as harassment and violence based upon other real or perceived attributes of personal identity. On the one hand, the Board deemed it the moment for a
brief general statement on these matters, as was the case with many professional organizations over this span of time. One the other hand, the Board believed that, as a professional organization with an educational mission, it should gather and provide its members with resources on U.S. laws relevant to these matters, and summarize some steps for recourse that persons experiencing such behavior could take. Details of this multi-phase effort, as well as of the Board’s decision to present a new Principle of Archaeological Ethics for a membership vote, will be outlined in the presentation.

[222] Discussant

Gifford-Gonzalez, Diane [189] see Hutson, Jarod

Gijanto, Liza (St. Mary’s College of Maryland) [201] Slavery and Colonialism: Selectively Embracing and Erasing the Past in The Gambia

Banjul was founded in 1816 as part of the British efforts to block the slave trade on the Gambia River. A planned urban center, the city developed around a series of neighborhoods designated as colonial, merchant, and African laborer spaces. Amongst the most prominent settlers were the Aku (Liberated Africans) from Sierra Leone and French traders from Goree who were instrumental in the growth of the colonial economy. The Banjul Heritage Project seeks to highlight contributions of the different residents to Banjul to the unique character of its neighborhoods, through community engaged research. This was at odds with the former Jammeh government which sought to exploit the nation’s connection to the slave trade via Alex Haley’s Kunta Kinte while erasing most the physical traces of the nation’s colonial past in the capital. Entire narratives have been created and imposed on the landscape around Kinte’s home village of Juffure, and remnants of British rule in the capital were systematically removed. This paper addresses some of the challenges encountered during three field seasons in Banjul including the absence of an engaged community in the face of a rapid dissolution of a resident population and the legalized destruction of colonial period sites.

Gil, Adolfo (CONICET-IANIGLA Grupo Vinculado San Rafael), Gustavo Neme (CONICET-IANIGLA Grupo Vinculado San Rafael-UTN FRS), Ricardo Villalba (CONICET-IANIGLA) and Jacob Freeman (Utah State University) [105] Contrasting Human Demography Trends between Hunter-Gatherers and Farmers as Response to Climate Change: Central Western Argentina as Study Case

The Late Holocene archaeological record of central western Argentina shows a mosaic of human strategies, ranging from farmers to hunter-gatherers. This presentation evaluates if differences in subsistence practices among groups in a similar biophysical environmental generated different demographic and socio ecological responses to climatic change over the last 3000 years. We use radiocarbon dates as a proxy for human population size and growth rates and 13C and 15N stable isotopes on human bone as proxy for human diet. We observe correlations between these proxies in relationship to the paleoecology of the region. We expect a stronger increase in radiocarbon frequency (SPD) in “northern farming areas” than in “southern hunter-gatherer” areas. On the other hand, a decline of radiocarbon date density will start around ca. 500 years BP in all areas but more abrupt falls could be recorded in “northern farming areas”. This drop in density is discussed in relationship with LIA climatic pattern. In terms of human diet, we expect decreasing diversity as the SPD curve approaches its peak and then “collapses”.

Gil, Adolfo [105] see Byers, David

Gil, Adolfo [9] see Salgán, Laura

Gilbertson, Christine [222] see Domeischel, Jenna

Giles, Breton (CEMML, Colorado State University), Eric Skov (CEMML, Colorado State University) and Shannon Koerner (CEMML, Colorado State University) [332] Prehistoric Use of the Wind Creek Locality at Fort Riley, Kansas

Fort Riley Army installation in northeastern Kansas is bordered by Wildcat Creek, a tributary of the Kansas River that has a high density of prehistoric sites, including Smoky Hill hamlets and base camps. We review the CEMML surveys and site exams along Wind Creek—a tributary of Wildcat Creek—that have produced an unexpected density of upland prehistoric sites. In this context, we discuss the prehistoric sites types found along Wind Creek and explore how they are part of settlement patterns within the larger Wildcat Creek watershed. We also examine differences in the artifact assemblages from 40 sites along Wind Creek, including the presence/number of hafted bifaces, scrapers, expedient tools and various types of debitage. Notably, the diagnostic hafted bifaces found along Wind Creek indicate that the area was used, at least sporadically, during the Archaic, Woodland and Late Prehistoric periods. A number of scrapers found at sites along Wind Creek conversely indicates the importance of hide-processing or perhaps wood-working in the area. We suggest that the Wind Creek locality contained important resources, perhaps available seasonally, that were exploited by prehistoric groups with habitation and base camps along Wildcat Creek.

Giles, Breton [332] see Koerner, Shannon

Gill, Lucy (University of California, Berkeley) [263] Towards a Nonlinear History of Lake Cocibolca, Nicaragua

Traditional narratives within Nicaraguan archaeology, based on primarily ethnohistoric rather than archaeological evidence, have privileged the arrival of external actors from Central Mexico at the expense of indigenous developments and have emphasized imposed change rather than situated continuity. Especially given that as archaeologists, our primary sources are material culture, we should approach mobility from a materialist engagement with the flows and hardenings of matter, sensu Manuel De Landa. This framework will allow for more nuanced interpretations of multidirectional movement, as well as an acknowledgement of the emergent properties that may have arisen from these interactions. Such a nonlinear approach will require a redefinition of the spatial logics of orientation posited by culture-areas, aided by employing the concept of landscape as defined by historical ecology. It will move towards a re-entanglement of humans and environments, which I argue are enmeshed and inseparable. My research centers around Lake Cocibolca, tracing flows of lacustrine resources between the multiple communities of practice situated around and within it and the sedimentation of these flows in the landscape. It is an explicit attempt to illustrate the vital role of multiple forms of localized movements, which have been overlooked in favor of unidirectional tran-stismhus migrations.

Gill, Rachel (University of Central Florida), Brigitte Kovacevich (University of Central Florida) and Michael Callaghan (University of Central Florida) [302] Reflectance Transformation Imaging: New Methods in Documenting Preclassic Maya Graffiti from Holtun, Guatemala

In the late 19th century, explorers identified graffiti etched in stucco walls of residences, palaces, and temples in the Maya Lowlands. By the mid-20th century, scholars acknowledged that the ancient Maya produced these incised images. Today, archaeologists struggle with documenting these instances of graffiti with precision and accuracy, often relying solely on to-scale line drawings to best represent the graffitied image they see before
them. These images can be complex, multilayered, and difficult to see so identifying the sequence of creation of the incisions can be challenging. Reflectance Transformation Imaging (RTI) is a method that uses a moving light source and photography in order to visualize, interact with, and analyze a three-dimensional object in a two-dimensional image. Performed on a series of 20 unique graffiti from the Maya archaeological site of Holtun, RTI showed promise as a viable technique for documenting and preserving graffiti as cultural heritage and for providing new information about an enigmatic aspect of Maya archaeology. Additionally, RTI is compared to other common methods used to document incised graffiti in the Maya lowland area including to-scale line drawing, tracing, photogrammetry, and scanning to determine what unique information, if any, can be gained using this method.

Gillam, J. Christopher (Winthrop University), Nicolas Zwyns (University of California—Davis), Masami Izuho (Tokyo Metropolitan University), Tseveendorj Bolobat (Institute of Archaeology, Ulaanbaatar, Mongolia) and Evgeny Rybin (Institute of Archaeology, Novosibirsk, Russia)

[41] Shedding New Light on Upper Paleolithic Cultural Landscapes of Northern Mongolia

Ongoing research on the Pleistocene of northern Mongolia has revealed intriguing patterns in the Upper Paleolithic cultural landscapes of the region. The distribution of sites suggests that maintaining social networks was potentially as significant as subsistence and shelter considerations for these early nomadic hunter-gatherers. In 2017, fifteen new Upper Paleolithic sites were documented in the Ikh Tolborin Gol (Big Tolbor River, n=45) and Naryn Tolborin Gol (Narrow Tolbor River, n=9) valleys of the greater Selenge River Basin that feeds Lake Baikal farther north, bringing the total number for the Tolbor locality to 83 sites (including 29 sites from the neighboring Khargany, n=17, and Altayn, n=12, rivers). Site distributions indicate a settlement preference for south- and east-facing slopes, warmth from solar exposure and shelter from cold northern winds, with prominent viewsheds of surrounding terrain for game monitoring, and locations near either mountain passes or confluences with the Selenge River, or secondary and tertiary drainages, for maintaining social networks.

Gillam, J. Christopher [81] see Morrow, Juliet

Gilliland, Sarah (Binghamton University), Jennifer Amico (Binghamton University), Anna Patchen (Binghamton University), Tiffany Raymond (Binghamton University) and Rebecca Hunt (Binghamton University)


The concentric ring features at the Poverty Point World Heritage site are monumental structures a kilometer and a half in diameter at their widest point. Though these impressive structures were unnoticed for many years after the identification of the area's other archaeological resources, they are now recognized as a unique attribute of an already remarkable site. Here, we use multiple geophysical methods to attempt to characterize the construction of these features. Initially assumed to have been created in a single construction episode, we argue that these earthworks experienced several iterations before appearing in their current configuration, and what we see now is the most recent stage of a more dynamic process. We also use these methods to evaluate prior claims of other features present within, under, or on top of the rings to assess whether there is evidence of habitation on the rings.

Gilliland, Sarah [13] see Blank, John

Gilleath-Brown, RPA, Andrew (Washington State University), Kyle Bocinsky (Crow Canyon Archaeological Center), Simon Goring (University of Wisconsin—Madison) and Tim A. Kohler (Washington State University)

[221] Paleotemperature Reconstructions of the Upland United States Southwest for the Last 2,000 Years

While paleoclimate reconstructions have improved across the last decade, the data and models are often still difficult to access, process, and interpret. However, improvements in these techniques, and the increasing breadth of paleoclimatic proxies available have furthered our understanding of the effects of climate-driven variability on past societies. Here we introduce a model being implemented by the SKOPE Project—Synthesizing Knowledge Of Past Environments. This application (openSKOPE.org) allows users to select a geographical extent and time interval, and subsequently obtain paleotemperature reconstructions for a given climate parameter. We use pollen data from the Neotoma Paleoecological Database (neotomadb.org) to produce low-frequency temperature reconstructions from the Modern Analog Technique (MAT). MAT builds a relationship between modern climate data and associated modern pollen spectra, and relates this pairing to fossil pollen assemblages based on the use of an appropriate multivariate distance measure. Within the application, users can overlay continental United States temperature reconstructions from the last 2000 years. The MAT reconstructions can be used to model productivity reconstructions for temperature-sensitive plants such as maize within social-environmental models, and to explore a variety of questions surrounding social and cultural responses to climate change.

[279] Discussant

Gilman, Patricia (University of Oklahoma) and Jakob Sedig (Department of Genetics, Harvard Medical School)

[91] Similarities and Differences Between Upper Gila and Mimbres Valley Ceramics in Southwestern New Mexico

Although both the Mimbres and the Gila valleys are within the Mimbres region and are not far apart, they seem to have rather major differences in the numbers of rooms per room block, the numbers of room blocks per site, and the designs painted on Mimbres black-on-white pottery. In this poster, we report similarities and differences between Mimbres Valley (MV) and upper Gila/western Mimbres (UGWM) pottery designs. We start by defining and quantifying style elements seemingly more common in the UGWM—herringbone lines, triangular faces with white circle eyes, rim triangles, square scrolls, rim band number, and absence of figures. To determine if these elements truly are more common on UGVM pottery, we analyzed bowl data in several ways. First, we examined every documented bowl excavated from UGWM sites to measure element frequency. Then, we observed the presence/absence of these elements on bowls excavated to the UGWM through NAA, regardless of where they were excavated. Finally, we analyzed a sample of bowls excavated and sourced to the MV to determine if these elements appear at the same frequency as on UGWM bowls. Ultimately, we hope this study will illuminate why these differences between valleys might have occurred and their significance.

Gilmore, Kevin P. (HDR), Elizabeth Leclerc (HDR), Peter Hille (HDR), Hiro Kurashina (University of Guam) and James Carucci (USAF AFCEC)

[13] Illuminating the Obscure: Using Legacy LiDAR Data to Define and Interpret a WWII Airfield on the Island of Tinian, Commonwealth of the Northern Mariana Islands (CNMI)

Tinian International Airport in the CNMI is a repurposed portion of West Field, a WWII U.S. airbase constructed in 1944 for B-29 operations against Japan. In 2017, HDR conducted a cultural resource inventory for proposed airport infrastructure improvements, focusing on West Field and the adjacent Japanese-built Gurguan Point Airfield. Survey was complicated by dense secondary forest that obscures the two airfields, rendering many features invisible from the air. To assist with mapping these features, legacy LiDAR data collected in 2006 was obtained from the USACE. Although these data required considerable processing and classification prior to use, they allowed mapping of large features with greater speed and accuracy than could be accomplished in the field. Additionally, 21 LiDAR anomalies identified as potential features were uploaded to tablets used to navigate in the field. Consequently, the most common anomalies (“10m-diameter round pits”) were verified as bomb craters created during the U.S. invasion. Recognizing that clusters of craters should indicate heavy bombardment of a specific target, HDR investigated a cluster in the LiDAR data and located...
a previously unidentified Japanese gun position. This demonstrates the economic and scientific value of older “found” datasets for documenting and interpreting cultural features large and small.

Gilmore, Zackary (Rollins College) and Kenneth Sassaman (University of Florida)  
[95] Clay Resource Variability and Stallings Pottery Provenance along the Savannah and Ogeechee Rivers  
An understanding of the raw materials available to ancient potters is essential to archaeological considerations of vessel production and provenance. Consequently, the collection and analysis of raw clay samples has become a common component of such studies. This poster presents the results of compositional analyses of clays from along the Savannah and Ogeechee Rivers in Georgia and South Carolina via petrographic point-counting and neutron activation analysis (NAA). These analyses were conducted as part of a larger project focused on reconstructing the ceramic social geography of Late Archaic Stallings societies, makers of North America’s oldest pottery technology. While multiple studies have demonstrated the feasibility of geochemical sourcing in other parts of the American Southeast—this is the first such investigation centered in the Savannah River Valley and the first systematic attempt to determine the provenance of Stallings vessels. Our results show that clear patterned differences in the mineralogy and chemistry of clay resources exist both between Savannah and Ogeechee Rivers and along the length of the Savannah. These data suggest a high potential for not only distinguishing between local and nonlocal vessels but also determining the direction (i.e., upriver versus downriver) of pottery movement.

Gilstrap, William (Massachusetts Institute of Technology)  
[152] Discussant  

Gingerich, Joseph A. M. (Ohio University)  
[124] Modeling Discrete Paleoindian Work Areas  
At many archaeological sites, discrete concentrations of artifacts or the clustering of similar tool types are often interpreted as individual work areas or evidence of specific activities. Using sets of refitted artifacts from the Shawnee-Minisink site, representing individual knapping and tool use events, I examine the relationship between known work areas and areas with varying artifact densities, where activities are less defined. By examining the relationship between refit distance, artifact density, raw material use, and the spacing of features the location of certain features or activity areas may be predictable at other hunter-gatherer sites. These results are considered in concert with the duration of site occupation and the spacing of activity areas at other Paleoindian sites.

Giomi, Evan (University of Arizona)  
[184] The Chronology of Goat-Springs Pueblo  
The site of Goat Springs Pueblo, in Socorro County, NM, is unusual for a relatively low density of artifacts compared to a large investment in architecture at the site. Consequently, the development of a site chronology is necessary to establish whether the low density of artifacts is attributable to a short period of occupation (or series of short occupations)—despite the considerable investment in architecture—or if another explanation is necessary. Complicating the construction of a chronology for the site is the difficulty in using conventional ceramic typologies at Pueblo IV and early Colonial Pueblo sites in southern New Mexico. While the Rio Grande Glaze Ware sequence has chronological utility for sites in northern New Mexico, the chronological associations of the ware are much less secure for sites in southern New Mexico. As such, careful examination of stratigraphy, non-local diagnostics, and possible building events is necessary to establish a chronological sequence for Goat Springs Pueblo. This research is also potentially useful in a wider sense for improving the chronological utility of the Rio Grande Glaze Ware sequence at sites in Southern New Mexico.

Giomi, Evan [91] see Picard, Taylor  

Giosa, Dominique [168] see Connolly, Robert  

Giovas, Christina M. (University of Queensland)  
[125] Thieves, Stowaways, Hitchhikers, and Hangers-On: The Commensal Niche in the Prehistoric Caribbean  
Prehistoric commensal animal relationships are understudied for the Caribbean, with little explicit consideration for the defining attributes of the insular commensal niche or what taxa may be rightly considered commensal. Here, I address these issues by clarifying the nature of Caribbean commensalism with respect to synanthropy, domestication, animal management, and phoresy. I consider which vertebrate and invertebrate taxa most likely enjoyed commensal relationships with humans in the pre-Columbian era and argue that many native mammals were probably ill-suited for synanthropy, in contrast to certain birds, reptiles and invertebrates. The more prominent mammalian commensals in the Caribbean are introduced synanthropes—species which were likely transported to the islands specifically because of this relationship and the degree of mutualism it conferred.

[237] Discussant  

Giraldo Tenorio, Hernando (Universidad del Cauca)  
[75] Defensive Landscape and the Naturalization of Social Inequalities in Southwestern Colombia (2200–1800 BP)  
The prehispanic societies from the Cauca river Valley, Colombia, have been portrayed as classical examples of the development of political complexity caused by intergroup conflict for basic resources in constrained environments. However, the existence of warfare in the region itself has not been backed by strong archaeological evidence. The re-analysis of the earth structures of the archaeological site of Malagana, in southwestern Colombia, suggest the existence of regional warfare, which provided the social context for the institutionalization of hierarchical positions. The spatial arrangement of the defensive structures in Malagana became both political and ideological strategies to mask and naturalize relationships of inequality. This was achieved by segregating and limiting the access of most of the population to public areas.

Giron-Ábrego, Mario (Boston University)  
[48] Points of Early Human Mobility: A Preliminary Synthesis of Paleo-Central American Sites  
This poster addresses an understudied area relevant to the initial peopling of the Americas: what are the earliest indications of human activity in Mesoamerica (particular emphasis on Guatemala)? Its geographic location and its relatively narrow expanse make the southern half of Middle America the natural stage to funnel terrestrial and coastal/riverine routes of early human migrations. Despite this consideration, archaeological research targeting Paleoamerican horizons [pre-12,800 BP] in this area has only witnessed intermittent treatment, in part due to a rich tradition intensely focused in Maya archaeology, mainly in Guatemala and Belize. An intriguing aspect of the Paleo-Central American legacy is the coexistence of two great contemporary lithic traditions of the American continent: South American “Fishtail” points and North American Clovis assemblages. This may suggest that Central America was a zone of technological innovation where traditions merged. A preliminary analysis of available fluted points from Central America vs. North American Clovis points to an expansion of this techno-complex at least as far as Venezuela. Moreover, morphological similarities between Central American lanceolate points and Clovis collections from the U.S. South-Eastern/Gulf regions indicate that a set of cultural connections may have existed along a now submerged Late Pleistocene Atlantic coast.
INDIVIDUAL ABSTRACTS OF THE SAA 83RD ANNUAL MEETING

Glassow, Michael (Univ of Cal-Santa Barbara)
Glass, Sarah (National NAGPRA Program)
dermatum museum collections, and to restore cultural patrimony to its Indigenous inheritors. We are harnessing digital technologies to return sensory richness to Boas and Hunt’s synthetic text, to reactivate disparate and long dormant museum collections and with Kwakwaka’wakw knowledge in an interactive, multimedia website. Archival revelations about the truly co-authored nature of the original text allow us to better situate the contexts and methods of creating ethnographic knowledge in terms of the Indigenous ontologies it purports to represent. We are harnessing digital technologies to return sensory richness to Boas and Hunt’s synthetic text, to reactivate disparate and long dormant museum collections, and to restore cultural patrimony to its Indigenous inheritors.

Glass, Aaron (Bard Graduate Center) and Judith Berman (University of Victoria)
A Probabilistic Approach to Constructing Networks in the Kuril Islands
One of the persisting challenges in archaeological network analysis is how to incorporate both temporal and spatial information into network models generated from the archaeological record. This paper tackles this issue by introducing a protocol that places probabilistic weights on potential network connections between archaeological sites, combining time-varying probabilities quantifying contemporaneous site occupation and space-dependent probabilities based on geographic distance. The construction of such network models will be illustrated using radiocarbon data from the Kuril Islands of Northeast Asia. Previous work in this region indicates episodic fluctuations in population density over time, with the breakdown of social networks likely playing a pivotal role in adaptive vulnerability and population decline. By creating a multivariate time series comprising thousands of fine-grained probabilistic networks, we examine long-term trends in network structure in the Kuril archipelago and interpret how these changes relate to demographic transitions. Ultimately, we argue that the data-driven, probabilistic approach to network construction we introduce will better prepare archaeologists to interpret network models across broad temporal scales.

Glass, Erik [103] see Marwick, Ben

Glascock, Michael D. (University of Missouri)
[152] Discussant

Glascock, Michael D. [288] see Oliveira, Diogo

Glascock, Michael D. [9] see Wallis, Neill

Glass, Sarah (National NAGPRA Program)
[322] Discussant

Glassow, Michael (Univ of Cal-Santa Barbara)
Seasonal Mobility Patterns During the Middle Holocene on Santa Cruz Island, California
Data derived from oxygen isotope profiles of mussel shells suggest that sites in the interior of Santa Cruz Island dating between 4700 and 3400 cal BC, the period of the island’s “red abalone middens,” were occupied during the spring through early winter, with little or no occupation during the main winter months. In contrast, a small number of oxygen isotope profiles indicates that a large coastal site was occupied predominantly during the winter and possibly also the fall, with no occupation from late spring through early summer. Floral and faunal remains obtained from another large coastal site, as well as characteristics of its deposits, suggest occupation from late spring through early fall and possibly occupation during winter months. Although data are still scanty, small groups of island occupants appear to have occupied sites in the island’s interior during the warm seasons of the year, when various plant food resources would have been available, and also aggregated at a coastal site for acquisition of marine resources. Aggregation also occurred at another coastal site during winter months not only for acquisition of marine resources but also for various social activities.

Glover, Jeffrey B. (Georgia State University), Dominique Rissolo (University of California, San Diego) and Daniel Leonard (HDR)
[162] Sabanas and the Sea: The Yalahau’s Ecological Niches and Preclassic Populations
The Yalahau region of northern Quintana Roo, Mexico is one of the few regions in the Maya Lowlands where a robust Preclassic population was not followed by the emergence of Classic period polities. For that reason it is an important area when trying to understand the unique characteristics of the Preclassic period in the Northern Lowlands. The Yalahau region is defined physiographically by freshwater wetlands (sabanas), which stand in stark contrast the rest of the Northern Lowlands. These wetlands were utilized by Preclassic inhabitants of the region for agricultural purposes and helped support a dense Preclassic population. The wetlands are framed to the north by the Yalahau Lagoon and Holbox Island. Research by Proyecto Costa Escondida members have revealed the dynamic nature of the coastline during the Preclassic period and there seems to be a correlation between the changing nature of the coastline with the utility of the inland freshwater wetlands for the region’s inhabitants. This paper brings together paleoenvironmental and archaeology research from the wetlands and the coast to investigate how these two ecological niches created opportunities for a Preclassic florescence in the region, while subsequently playing a significant role in the region’s depopulation in the Early Classic.

Glover, Jeffrey B. [330] see Ojeda Rodríguez, Elizabeth
Glover, Jeffrey B. [258] see Rissolo, Dominique

Glowacki, Donna (University of Notre Dame)
The Great Houses of the Mesa Verde Cuesta
The Mesa Verde uplift has long been noted for its relative lack of great houses, notwithstanding its geographic position between Aztec and the Great Sage Plain. The notable exception has been Farview House, which has great house attributes, but not all regional archaeologists have agreed that it qualified as one. Yet, the Chaco period (950–1150 CE, also known as the Pueblo II period) was of the densest periods of occupation on the Mesa
Verde uplift, which at that time also had a higher population density than elsewhere in the region. In Mesa Verde National Park, recent surveys that focused on reconsidering the social landscape of the Mesa Verde cuesta have produced re-configured village maps for the largest ancestral Pueblo villages with Chaco period occupations. This poster presents preliminary results that highlight five sites with great house or great house-like architecture in order to reassess the nature of Chaco on the Mesa Verde cuesta.

[225] Chair

Glowacki, Mary

[17] Raw Material Procurement and Biface Production at Bonneville Estates Rockshelter, Nevada: A Long-Term Diachronic Approach

During the decade-long excavations at Bonneville Estates Rockshelter, eastern Nevada, a well-stratified sequence of cultural components spanning from Paleoindian times to the late Archaic was documented. In this poster we present the results of a comprehensive analysis of the biface and bifacial point assemblage from the shelter, exploring temporal variability in raw-material procurement and selection, production, and use of this artifact class from 13,000 years ago to the late prehistoric period. These results are considered in the context of analyses of other materials recovered (e.g., faunal remains) to interpret long-term changes in the use Bonneville Estates by its prehistoric inhabitants, their subsistence and settlement organization, and individual age, sex, and health, and accompanying grave goods are described and discussed. It is argued that Cotocotuyoc served as both an early and late Wari cemetery, and as a place of ancestor worship with ties to the watery underworld and the mountain spirits or apus, as they are known today. Additionally, it is proposed that Cotocotuyoc was considered a hallowed burial ground for both the early founding societal elite and the last of the imperial community from the Valley.

Gnivecki, Perry and Mary Jane Berman (Department of Anthropology, Miami University)

[123] Were the Lucayans a Creole Society?

“Were the Lucayans a creole society?” Can creolization be inferred from Lucayan material culture during the Early and Late Lucayan Periods? Through the examination of ceramics and other remains, such as duhos and shell and stone artifacts, we will attempt to determine whether this was the case. Can Lucayan cultural expressions, unique to the Bahama archipelago, be viewed as byproducts of the processes of creolization, and if so, why?

Godden, Bianca [241] see Anderson, C. Broughton

Goebel, Ted (Texas A&M University) and Bryan Hockett (Bureau of Land Management)

[47] Raw Material Procurement and Biface Production at Bonneville Estates Rockshelter, Nevada: A Long-Term Diachronic Approach

Change the division of the main text into individual abstracts for the SAA 83rd Annual Meeting:

The Wari settlement of Huarco, located southeast of the Cuzco Valley in the Southern Highlands of Peru, contains a mortuary complex known as Cotocotuyoc. This towering plateau site, which overlooked the entire Huarco Wari settlement, was one of several urban components that made up a more than nine hectare Wari center, occupied for over 500 years. Excavations at Cotocotuyoc generated telling evidence for who built and occupied this settlement and how they were treated upon their deaths and in the afterlife. This presentation examines these data in order to shed light on the individuals interred at Cotocotuyoc and their potential roles as members of the greater Huarco Wari provincial node. Burial style and construction, individual age, sex, and health, and accompanying grave goods are described and discussed. It is argued that Cotocotuyoc served as both an early and late Wari cemetery, and as a place of ancestor worship with ties to the watery underworld and the mountain spirits or apus, as they are known today. Additionally, it is proposed that Cotocotuyoc was considered a hallowed burial ground for both the early founding societal elite and the last of the imperial community from the Valley.

Goebel, Ted [155] see Pratt, Jordan

Goepfert, Nicolas [153] see Bermeo, Nicolas

Góes Neves, Eduardo [116] see Watling, Jennifer

Goff, Sheila

[138] Exhibit Development through Partnerships with American Indian Tribes and Museums

Gokee, Cameron


The Bandafassi Plateau of southeastern Senegal today defines a landscape in which ethnic identities (Bedik, Peul, and Malinke) appear to be grounded in “traditional” patterns of settlement and land use, and yet oral histories speak largely of movement at multiple scales—from the fission and fusion of villages, to the migrations of hunters and merchants, to the arrival of foreign invaders and colonial powers. Seeking to better chart the interplay between natural environment and social history across this region over the past two millennia, the Bandafassi Regional Archaeological Project (BRAP) has since 2013 begun to integrate survey and excavation data on past human activities with spatial analyses of the relations among sites and geographical features. This paper explores three applications of Landsat 8 OLI/TIRS satellite imagery within the BRAP research program: (1) mapping geomorphological features across the regional landscape; (2) developing a predictive model of site locations for future survey; and (3) interpreting how the physical landscape has historically enabled and constrained the social production of identity, including “traditional” ethnic boundaries, in southeastern Senegal. The paper concludes by raising methodological caveats and ethical concerns about the use of satellite imagery in the archaeology of Africa.

[160] Discussant

Goldberg, Kelly (University of South Carolina)

[67] Exploring the Material Culture of the 19th Century Slave Trade in Coastal Guinea

As the British Navy patrolled the West African coast in an effort to enforce the cessation of the Atlantic Slave Trade beginning in the early nineteenth century, several American and European traders shifted their focus a slightly inland, establishing trading sites on the more visibly protected tidal branches of the Rio Pongo of coastal Guinea. This paper explores the material culture used and maintained by one of these establishments at the site of Gambia, considering how material consumption is affected by the political and social ramifications of the continuation of the slave trade in such secluded areas.
Goldberg, Paul (Boston University) [182] Soils, Sediments, Archaeology, Micromorphology, and Vance Holliday
Soils are different from sediments. Many of these differences have been revealed by Vance Holliday during his career, through field work and numerosous publications that have significantly influenced all disciplines. Nevertheless, there is a tendency to treat any soft stuff that is being excavated as “soil”, and this confusion needs to be continuously corrected. Here, I present a number of examples of the use of archaeological micromorphology to highlight the distinctions between soils and sediments and show that sometimes, things that look like soils aren’t really. I will use examples from sites in the US and the Old World to illustrate these points.

Goldberg, Paul [177] see Patania, Ilaria

Golden, Charles (Brandeis University), Alejandra Roche Recinos (Brown University) and Andrew Scherer (Brown University) [109] Flows of Value, Debt, and Goods in the Usumacinta River Basin
Scholars considering Classic period Maya economies have long viewed acquisition, production, and trade primarily through the dual lenses of tribute to royal courts and barter among the populace. Recent archaeological discoveries and theoretical models have broadened our perspective to allow the Classic Maya the marketplaces and market economies that were once believed to be innovations of Postclassic Mesoamerica. Yet, we still know little about notions of currency, value, and debt—well documented in cases like the Aztec Empire—that might make better sense of the currents that energized and kept moving the flow of goods from Highlands to Lowlands, and center to periphery, in Classic Maya kingdoms. In this paper we draw upon the archaeological data from urban and hinterland sites in the Piedras Negras and Yaxchilán kingdoms of the Western Maya lowlands to develop a framework model for understanding the relationship between the flow of value and debt, and the production and exchange of long-distance goods and local materials in the Usumacinta River Basin.

Golden, Charles [163] see Scherer, Andrew

Goldhahn, Joakim (Linnaus University) [113] Towards an Archaeology of Prows—An Ontological Approach to Geoglyphs and Petroglyphs in the North European Bronze Age
This paper will explore the relationship between animated boat prows in different stone media—pieroglyphs and geoglyphs—from an ontological perspective. It explores chronological changes in these media and argues for both similarities and differences in how stones participated in unfolding peoples’ life-worlds or worldings during the north European Bronze Age.

Goldhahn, Joakim [113] see Nimura, Courtney

Goldstein, Lynne (Michigan State University) [1] Discussant

Goldstein, Paul (UC San Diego) [181] Walking in Tiwanaku Shoes: Small Things, Quotidian Cues and Tiwanaku Identities in Diaspora
In the absence of living interlocutors for the Andean Tiwanaku state society (AD 500–1000), we ask how Tiwanaku peoples imagined and reproduced themselves as social beings. A conventional view poses that Tiwanaku civilization at its apogee was unified by common membership in, or allegiance to, an elite political culture, as evidenced by a high culture of specialized craft production, elite ritual functions, and religio-political structuration. These perspectives are overly deterministic; in this paper, we approach this problem by adapting a Resilience Theory framework to examine a (type site?) case-site on the Lothagam-Lokam site near Lake Turkana, Kenya. New excavations at Lothagam-Lokam have uncovered a sequence of small-scale local environmental shifts with interstratified cultural horizons that spans the entire Holocene. We argue that people's decisions to intensify or re-organize their economic strategies shaped their options and cultural attitudes in responding to subsequent stresses when faced with small-scale environmental fluctuations around Turkana. The interconnected cultural and economic systems gradually assembled through multiple resilience cycles ultimately conditioned responses to more extreme events such as the 60 m drop in Turkana's lake level at the end of the AHP. Our application of Resilience Theory at Lokam provides a potential path forward for more nuanced discussions of human-environment interactions during the AHP.

Goldstein, Paul [100] see Gay, Brandon

Goldstein, Steven (Max Planck Institute for the Science of Human History) [198] Resilience Theory and Human-Environment Interactions during the Early Holocene at Lothagam-Lokam, Northern Kenya
The pluvial conditions during the African Humid Period of the Early-to-Mid Holocene profoundly influenced environments across northern and eastern Africa, expanding lakes, rivers, and grassland ecologies. Archaeologists have often explained human responses to these increasingly aquatic environment as in terms of an increasing reliance on fisher-hunter-gatherer economies. Similarly, once the AHP ended, humans abandoned these lifeways. These perspectives are overly deterministic; in this paper, we approach this problem by adapting a Resilience Theory framework to examine a (type site?) case-site on the Lothagam-Lokam site near Lake Turkana, Kenya. New excavations at Lothagam-Lokam have uncovered a sequence of small-scale local environmental shifts with interstratified cultural horizons that spans the entire Holocene. We argue that people's decisions to intensify or re-organize their economic strategies shaped their options and cultural attitudes in responding to subsequent stresses when faced with small-scale environmental fluctuations around Turkana. The interconnected cultural and economic systems gradually assembled through multiple resilience cycles ultimately conditioned responses to more extreme events such as the 60 m drop in Turkana's lake level at the end of the AHP. Our application of Resilience Theory at Lokam provides a potential path forward for more nuanced discussions of human-environment interactions during the AHP.

Golitko, Mark (University of Notre Dame), James Zimmer-Dauphinee (Vanderbilt University) and John Edward Terrell (Field Museum of Natural History) [83] A Dagger to the Heart? Testing Assumptions of Archaeological Network Analysis with New Guinean Ethnographic Collections
Progressive cultural and biological diversification and divergence over space and time is one of the grand meta-narratives of archaeological thought. Much of the method and theory employed in support of this narrative is arguably at odds with what Emirbayer and Goodwin label the “anti-categorical imperative” at the heart of social network relational thinking. Here we utilize spatial network models within the broader family of Exponential Random Graph Models (ERGMs) to examine the relationship between style and technology of ethnographic material culture from Papua New Guinea (decorated bone daggers), language, and a set of more or less plausible geographically patterned social network formations derived from ethnographic data and network theory. We argue that material cultural diversity, language patterning, and social network structure are inextricably linked, but may
each be governed and shaped by differing processes and motivations. Our analysis of ethnographic material culture also lays bare some of the issues inherent in using archaeological material culture as a proxy for social network structure.

**Gollup, Jasmine (TRC Environmental Corporation), Robert Wall (TRC Environmental Corporation), Patrick Walters (TRC Environmental Corporation) and Timothy Sara (TRC Environmental Corporation)**

**Cobble Reduction and Tool Manufacturing along the Atlantic Coastal Plain: An Example from Prince George’s County, Maryland**

Cobble extraction and systematic lithic reduction activity areas are commonly found along the Atlantic coastal plain from the Early Archaic through Woodland periods. This process, typically involving the collection of high quality quartz and quartzite cobbles for processing, was documented 100 years ago by William Henry Holmes for the Piney Branch quarries in Washington, D.C. Excavations conducted by TRC at the Accokeek sand and gravel mine in 2014 identified 12 archaeological sites, two of which (18PR1079 and 18PR1081) were further examined through Phase II investigation in 2017. Excavations yielded large quantities of quartz and quartzite debitage and staged bifaces likely sourced from exposed cobble beds in an adjacent streambed. The sites represent intensive lithic reduction activity areas dating from the Early Archaic through the Early Woodland periods. The predominance of locally available raw material in the lithic assemblage indicates extraction of local raw materials and on-site cobble reduction and tool manufacturing. Several contemporaneous sites that also represent local raw material extraction areas and cobble reduction stations are located in the project area vicinity. Analysis of the lithic assemblage from this extraction site furthers our understanding of cobble reduction activity in a broader perspective of Atlantic coastal plain sites.

**Goman, Michelle** [84] see Kaijankoski, Philip

**Gomes, Ana (ICArEHB, University of Algarve), Brandan Zinsious (University of Connecticut, EUA), Mussa Raja (Eduardo Mondlane University, Maputo, Mozambique), Nuno Bicho (ICArEHB, University of Algarve, Portugal) and Jonathan Haws (University of Louisville, EUA)**

**Holocene Palaeoenvironmental Changes in Southeastern Mozambique: The Case of the Inhambane Bay**

Geoarchaeological surveys were conducted in 2016 and 2017 to better understand the environmental history and landscape evolution of the Inhambane coastal area, Southeastern Mozambique, aiming to know the environmental context of human occupation of the Tofo, Praia da Rocha and Chibuenae archaeological sites. To reach this aim, 4 cores were collected in a mangrove area of the Inhambane estuary, an area both influenced by sea-level and climate changes. All the boreholes were georeferenced and the study area was overflown with a drone to collect photogrammetric data. Core samples were used for geochemical, texture, and diatom analysis. Diatoms will be used as the main palaeontological proxy, because they are unicellular algae with a short live cycle and largely sensible to environmental variables such as salinity, sediment texture, and duration of the tidal inundation. Preliminary data on the cores sedimentological description (encompassing the last 4700 years), geochemical and diatom results are presented. These results are mainly showing changes due to the mangrove lateral progradation, which is probably responsible by an environment alternation between more and less hydrodynamic environments.

Gomez, María [142] see Pantoja, Luis

Gómez Meija, Juliana [66] see Bongers, Jacob

Gómez Peña, Mónica [293] see Hsu, Teresa

Gonçalves, Célia [124] see Bicho, Nuno

Gongora, Claudia [142] see Pantoja, Luis

**Gonlin, Nan (Bellevue College)**

**Discussant**

**Gonzales, Alicia (Oregon State University), Jeffrey Blomster (George Washington University) and Ricardo Higelin Ponce de León (Indiana University)**

**Taphonomic Examination of the Skeletal Collection from Etlatongoa, Mixteca Alta, Oaxaca**

Recent excavations at the Middle Formative (850–400 BCE) site of Etlatongo, in the Mixteca male bearing striking red stains on the anterior cranium. These findings may suggest alteration of remains associated with burial rituals. However, human remains may be modified through several post-mortem taphonomic effects, including: trauma, rodent activity, discoloring, staining, cultural modification, interment rituals, damage throughout archaeological investigation procedures, biological and environmental effects. Here we present a preliminary assessment of taphonomic variability among the Etlatongo sample, using a combination of quantitative and qualitative bioarchaeological methods to distinguish skeletal modification resulting from cultural practices vs. post-depositional alteration. We propose that from this sample there is high variability attributed to cultural modification and environmental factors. However, the state of decomposition and completeness of this collection makes distinguishing post-mortem practice indistinct in many cases.

Gonzalez, Edith (The Graduate Center CUNY)

**There’s Sugar in Them There Hills: Bio-prospecting in the 18th-Century Caribbean**

In an effort to discover the next big viable cash crop, the Codrington family of Antigua hired a botanist to implement a strategic introduction of species from the four corners of the British empire to Barbuda as an 18th-century living laboratory. This paper draws on historical documents to explore the dynamic and sometimes conflicting motives for agricultural experimentation—those of food security in times of drought or war versus finding the next “sugar.”

Gonzalez, Juan [89] see Skowronek, Russell

**Gonzalez, Sara L. (University of Washington, Seattle)**

**Finding a Grand Ronde Way: Building Epistemological Bridges through Collaborative Field Practice**

In the language of self-determination, an indigenous archaeology is an expression of the sovereignty of a tribal nation to determine how its heritage will be cared for, now and into the future. Tribes, however, encounter several capacity-related challenges in developing tribally-specific heritage management plans. These challenges include the lack of funding for tribal historic preservation and repatriation, shortage of qualified staff, and, most significantly, operating within a heritage framework that was not designed with the needs or interests of tribes in mind. Given these significant challenges, how can an indigenous nation make archaeology work for and in accordance with tribal needs and values? Using the case study of Field Methods in Indigenous Archaeology, this paper evaluates how community-based research with the Confederated Tribes of Grand Ronde Community of
Oregon contributes to a uniquely Grand Ronde way for doing archaeology. Preliminary outcomes from FMIAs suggest that indigenizing archaeology not only transforms our discipline's relationship with and to indigenous communities, but builds our—archaeologists' and tribes—collective capacity to care for and protect tribal heritage for future generations.

[60] Discussant

Gonzalez, Silvia (Liverpool John Moores University), David Huddart (Liverpool John Moores University), Isabel Israde Alcantara (Universidad Michoacana de San Nicolas de Hidalgo) and Gabriela Dominguez Vazquez (Universidad Michoacana de San Nicolas de Hidalgo)

[59] Paleolithic Sites from Central Mexico: Paleoenvironment and Dating

During the last 20 years we have studied systematically several important Paleolithic sites from Central Mexico doing detailed stratigraphic studies, paleoenvironmental reconstructions (pollen, diatoms, tephra studies) and radiocarbon dating. The sites include: Peñon Woman III skeleton, Santa Isabel Iztapan Mammoths with associated lithics, Tapacoya Man Skull, Toculita Mammoths, Tequixquiac Late Pleistocene Fossils and Tepexpan Man Skeleton.

We present here a general model of strong environmental changes occurring during the Late Pleistocene-Early Holocene transition that affected human and megafaunal communities in this area. Together with the presence of large volcanic eruptions from Nevado de Toluca and Popocatepetl Volcanoes that produced important tephra markers in the Basin of Mexico. The earliest directly dated human, Peñon Woman III (Age: 10, 755 +/- 75 BP) is one of the most complete and well preserved Paleolithic skeletons from the Americas.

The Santa Isabel Iztapan Mammoths I and II were found together with lithics of Scottsbluff, Lerma and Angostura types and obsidian prismatic blades but not with Clovis type points normally associated with mammoth kill sites and butchering. The lithics were found in a layer after the Pumice with Andesite tephra layer (PWA) and they have an estimated date between 14,500 BP and 10,900 BP.

Gonzalez, Toni (University of California, Santa Barbara)

[157] Chair

Gonzales, Toni [157] see Waldo, Brian

González, Lissandra [55] see Valdes, Alejandro

Gonzalez Herrera, Ulises Miguel [323] see Chinique De Armas, Yadira

Gonzalez Lauck, Rebecca B.

[70] State of Conservation of the La Venta Stone Sculpture Corpus

The stone sculpture corpus originally found in La Venta is one of the most important collections of Olmec art in Mexico. It is currently exhibited in five different museums in Tabasco and Mexico City. The state of conservation of the almost 50 sculptures (whole and fragments) at the Parque Museo La Venta in Villahermosa are of particular interest because they have been exhibited in an open air museum for the last six decades. A summary of a recent and detailed study of the state of conservation of this corpus will be presented, as well as recommendations for its better presentation and conservation.

González López, Angel (UC Riverside)

[31] The Imperial Stone Sculpture of Tenochtitlan: Changes and Organization

The rise of the Aztec Mexica Empire is well represented in the archaeological record, especially through the wide spread evidence of stone sculptures in the main Precinct of the imperial capital. In less two hundred year of history, the island became the principal producer of these artifacts. Its workshops created not only numerically more pieces, but also monumental pieces and sculptures with complex iconography and new discourses. This paper will discuss the problem of using the term “Aztec” to describe this art style, which has resulted in the homogenization of diverse groups and factions in and around the basin. I will analyze the nature and direction of its change through time and across space, such as sculptures from Tula, Culhuacan, Azcapotzalco, and other urban centers inside the Basin of Mexico. Here, I will deal with iconographic changes to develop stages of time, as a methodological tool. Units of cultural similarities present in one specific area serves as a more useful way of organizing changes than the traditional periods of time in archaeological research. This shift will facilitate the organization of the profuse evidence of stone sculpture and analysis from a stylistic approach that also draws on contextual and calendric information.

González Venanzi, Lucio [7] see Castro, Juan

Good, Walker [332] see Walder, Heather

Goodale, Nathan [97] see Super, Clare

Goode, Charles, Cynthia V. Goode (Commonwealth Heritage Group, Inc.), Thomas J. Loebel (TJL Archaeological Consulting Services) and Daniel P. Wagner (Geo-Sci Consultants, LLC)

[328] Subterranean Homesick Blues: Excavations at Site 51SE071, a Native American Settlement along the Anacostia River, Washington, D.C.

Construction of DC Water’s new Poplar Point Pump Station in southeast Washington, D.C., led to the discovery of a buried river terrace under an I-295 interchange that contained Native American artifacts dating from the Middle Archaic period through the Late Woodland period. Archaeologists working more than 15 feet below ground in the construction footprint of a large subterranean structure recovered more than 7000 artifacts and identified the remains of a cooking hearth feature. This paper will explain how the geoarchaeological investigation identified the site in this complex urban environment and will report the results of the excavations. Use-wear analysis performed on chipped stone tools has provided evidence about the types of activities that occurred at this location. This paper will also discuss how the investigation of this site contributes to more than 100 years of Native American archaeology along the Anacostia River.

Goode, Cynthia V. [328] see Goode, Charles

Goodman-Tchernov, Beverly [330] see Beddows, Patricia A.

Goodrich, Arabella (The College of Wooster) and Olivia Navarro-Farr (The College of Wooster)

[98] Rooms in Rome: Production, Function, and Conservation of Ancient Roman Mosaics and Frescoes

In this poster, we explore the production and conservation of mosaics and frescoes, examining their co-occurrence in high elite domestic spaces and how they reveal the varying function(s) of these spaces. Citing both archaeological examples from Villa Cotanello and Villa di San Cesareo, each about
Goodwin, Graham (University of Nebraska-Lincoln), Heather Richards-Rissetto (University of Nebraska-Lincoln), Kristy Primeau (State University New York Albany) and David Witt (State University New York Buffalo)

[40] Soundscapes and Visionscapes: Investigating Ancient Maya Cities with GIS and 3D Modeling

Researchers have been applying Geographic Information Systems (GIS) to examine the roles of visibility and movement in archaeological landscapes around the world. However, few studies have investigated the role sound potentially played in structuring experience in ancient cities. To begin to fill this gap, this paper builds on our initial investigations to develop new geospatial and virtual reality (VR) methods to examine ancient acoustics. For the ancient Maya, sight and sound worked in concert to create synesthetic experiences that influenced daily life and shaped society. To explore this interaction, we apply a combination of GIS modeling: viewed analysis, soundshed analysis, and an Urban Digital Elevation Model (Urban DEM) generated from airborne LiDAR and 3D modeling data. This approach provides an opportunity to perform computational analysis on a simulated ancient landscape rather than the contemporary landscape. We then take these GIS-derived computational data into a VR environment to combine sound and vision to illustrate the complementary roles of visual and auditory experience at ancient Copan.

Goodwin, Whitney (Southern Methodist University)

[299] Ceramics Inside and Out: Food, Style, and Identity in Coastal Northeastern Honduras during the Selin Period (AD 300–1000)

Prehispanic populations of northeastern Honduras were positioned at the border of Mesoamerica and Lower Central America. Previous research on ceramic style suggests local affiliation shifted over time from north to south as part of an adept strategy to navigate the complex political and social landscape of the region through the promotion of an inclusive group identity. This study explores the actual implementation of that strategy by investigating communal feasting contexts where symbolically significant ceramics were used and incorporates new information about local identity and affiliation through a complementary study of foodways. Tracing changes in these traditions over time elucidates the ways in which these materials were articulated in practice to create enduring symbols of identity. Recent findings from the 2016 field season of excavation at the Selin Farm site are presented and directions of future research in the Guaimoreto Lagoon area are outlined.

Goralski, Craig T. (Cypress College)

[107] The Ethics and Practice of Forensic Archaeology, Unfunded Mandates, and the Unidentified

In 2001, California passed SB 297, which mandated that coroners “shall collect samples for DNA testing from the remains of all unidentified persons and shall send those samples to the Department of Justice for DNA testing and inclusion in the DNA data bank.” This legislation, which was largely unfunded by the state, expanded existing DNA testing programs to include remains from cold cases that were being stored by state agencies and remains that had been interred in cemeteries throughout the state. This paper will discuss the challenges of creating a prioritized list of individuals to be exhumed from a potter’s field in San Bernardino, California, when various stakeholders approach questions of ethics and identity from different perspectives. The results of a multi-year project will be summarized, with attention given to how the realities of forensic fieldwork and early successes in identification contributed to reconsiderations of who could and should be included in this attempt to identify the unknown.

Gordon, Mary

[136] Role of Rockshelters and Caves in Yokuts and Western Mono Cultures

Yokuts and Western Mono tribes of central California had close cultural ties. While the Yokuts were the most numerous and the dominant culture, many people were bilingual. They shared themes in their pictographs, petroglyphs, and cupules, which are cultural traits of a ceremonial nature that are archaeologically identifiable, and are generally agreed to have magico-religious significance. Forty-one percent of the paintings in their territory occur in shallow caves and rockshelters, which vary in size. Size restricts the number of paintings, as well as the number of people viewing them. Some rock shelters can accommodate a dozen people, while others only one to two. Many sites include cupules and/or bedrock mortars, which suggest women’s participation. The surroundings also vary. Many of the rockshelters and shallow caves are hidden, while others could have been viewed by the village, which suggests that there are public and private sites. This paper discusses the relationships between site size, surroundings, and contents. The physical similarities and differences of each site are compared within the tribal area, and across dialect borders. The performer’s and audience’s roles in the production of rock art, as well as, the purpose and beneficiaries of the performance will be addressed.

Gore, Angela (Center for the Study of the First Americans, Texas A&M University)

[250] The Lithic Landscape of the Nenana Valley: Investigating Land-Use and Toolstone Procurement Activities in Interior Alaska

Investigating prehistoric landscape use is significant in answering questions about the adaptive strategies and behaviors of prehistoric Beringians. How can we define the prehistoric landscape? How did humans provision themselves in eastern Beringia, and how did these provisioning behaviors change through time? Toolstone procurement and selection behaviors influence toolkits, mobility, and settlement strategies; therefore, they are important in explaining prehistoric behavioral adaptation and the complexities of landscape use. We can begin to explore toolstone procurement in the Nenana Valley of central Alaska through geochemical sourcing studies. Portable x-ray fluorescence (pXRF) is a useful geochemical tool for characterizing non-obсидian volcanic materials (basalts, dacites and andesites). In an attempt to define the lithic landscape in the Nenana Valley and explore hunter-gatherer land-use strategies, this paper presents results of a raw material survey conducted during the 2015–2017 field seasons aimed at mapping the distribution of knappable volcanic materials in the valley. It then compares results of geochemical (pXRF) analyses of artifacts from several Late
Pleistocene and Holocene sites with both primary (outcrop) and secondary (alluvium) sources within the valley to understand and explore how local materials were utilized by prehistoric Alaskans in Eastern Beringia.

Goring, Simon [221] see Gillreath-Brown, RPA, Andrew

Gorman, Alice [118] see Walsh, Justin

Gosner, Linda (University of Michigan)

Iberian Mines and Imperial Matters: Re-conceptualizing Labor, Technologies, and Communities of Practice in Roman Iberia

The landscapes of the Iberian Peninsula were famous in antiquity for their richness in metals, and scholars have long claimed that these metals were a draw for colonial interest in the region from early on. This is especially true following the Roman conquest of Iberia in the late 3rd century BCE, when the scale of mining increased dramatically to accommodate the growing needs of the Roman empire. This was made possible through dramatic shifts in the organization of labor and the technological practices surrounding mining. Scholars often attribute these changes to Roman innovation, ignoring the long-term history of indigenous mining in many areas and the potential significance of local people in the successes of the industry. In this paper, I challenge this conventional interpretation and explore the diverse contributions of local people to the mining industry, from their knowledge of local resource distribution to their work as laborers in mining and subsidiary industries. I argue that Roman conquest transformed the everyday lives of local people, who, in turn, participated in the diverse communities of practice in Roman mining landscapes, contributing knowledge, skills, and resources that fueled an industry that was key to the creation of the Roman empire.

Gough, Stan [47] see Furlong, Julia

G RAFESCH, ANTHONY (Connecticut College), Annette Davis, Sarah Harris, Andrew Prunk and Hector Salazar

An Experimental Archaeological and Digital Approach to Understanding the Manufacture of Slate Fishing Knives in Southwestern British Columbia

Despite longstanding anthropological concerns with the origins of intensive delayed-return subsistence economies on the Northwest Coast, the use and production of slate fishing knives has received little attention. Owing to specific design attributes, thin slate fishing knives were critical to the necessarily efficient and rapid processing of tens of thousands of salmon in a span of only three or four months. Although anthropologists have a reasonably good understanding of how slate knives were used, there is a paucity of ethnographic and historical data addressing how these critical tools were made. This poster highlights experimental archaeological research addressing the stages, techniques, and organization of slate knife production with an eye toward understanding variability in the byproducts of knife-making activities. A key feature of our project is a companion study of the tool-making process using large-scale, digital, multimedia data gathering and analysis techniques. Digital video and digital photography are used to capture...
important information on how toolmakers change their bodily orientation to stage-specific crafting work, the tool-making implements they use, and the social interactions and discourses that mediate the work. We argue that these data are crucial to an understanding of the embodied, tactile, and otherwise sensorial experiences of tool production.

Graesch, Anthony [153] see Lane, Amanda

Graf, Kelly, Julie Esdale (CEMML-Colorado State University) and Ted Goebel (Texas A&M University) [332] 2017 Excavations at McDonald Creek (FAI-2043), A Multicomponent, Open-Air Site in the Tanana Flats Training Area, Fort Wainwright, Central Alaska

In 2013 our team began a 3-year testing project to assess the research potential of the recently-discovered McDonald Creek archaeological site (FAI-2043). Site testing indicated a well-stratified and reasonably preserved multicomponent site set in unconsolidated eolian sand and silt deposits atop an ancient alluvial landform. Three cultural components have been identified so far, dating to the early Allerød, Younger Dryas, and Middle Holocene intervals, respectively. Thousands of archaeological materials, including lithic debris and faunal and floral remains, associated with domestic features such as hearths and possible dwellings abound in the lower two components.

In June and July of 2017 we began large-scale block excavation of the site in an area where we found living floor debris during the testing phase of the project. We excavated 21 m² through the Younger Dryas-aged living floor. Here we report results from the 2017 field season as well as preliminary analyses of various material remains from work conducted to date.

Graf, Kelly [177] see Henry, Aureade

Graham, Anna (University of North Carolina at Chapel Hill)

[35] New Insights from Old Wood: A Case Study from the Southeastern United States

In the southeastern United States, as well as in North America more broadly, archaeological wood charcoal continues to be an underutilized data source. In this paper, I review previous North American studies and models of prehistoric fuelwood collection. I use these past studies to highlight how wood charcoal data might contribute new insights on the archaeological record. I also present findings from a recent analysis of wood charcoal from three sites in the North Carolina Piedmont. This new data is framed as a case study to demonstrate how such information can be put to use.

Graham, Elizabeth (Institute of Archaeology), Richard Macphail (University College London), Phillip Austin (University College London) and Lindsay Duncan (University College London) [224] Paleoecology of the Late Pleistocene Fauna from the Lamb Spring Site, Colorado

The Lamb Spring site located in central Colorado is a late Quaternary locality with stratified Pleistocene and Holocene faunal remains. The late Pleistocene component is dominated by mammoth (Mammuthus columbi) but contains other grazing taxa like horse, bison, American camel, Harlan’s ground sloth, etc. The general lack of microfauna from this horizon makes detailed paleoecological interpretations difficult. However, the megafauna point to a dominance of grassland with the possibility of scattered trees. This grassland/savannah environment and the Lamb Spring fauna are similar to other faunas throughout the plains region. It is similar structurally to the Arctic Steppie biome but it can be clearly differentiated from it by species composition. We suggest that the more “southern” environments of the central and southern Great Plains may have been a different super province, the Mammuth Grassland/Savanna.

Graham, Russell [77] see Foecke, Kimberly

Graham, Shawn (Carleton University) and Damien Huffer (University of Stockholm) [118] Machine Learning the Visual Rhetoric of the Trade in Human Remains

There is a thriving online trade, and collector community, that seeks specimens of numerous categories of human remains. This commerce is facilitated by posts on new social media such as Instagram, Facebook, Etsy, and, until recently, eBay and operates within a complex ethical and legal landscape. This presentation will share key results of ongoing work to data mine these online markets on both new social media and multi-lingual e-commerce platforms. In particular, we are interested in the possibilities presented by machine learning and other ways to ‘train’ the machine to identify the illicit, the illegal, and the unethical. Can we design ethical archaeological machines? We will discuss the relevance of applying digital humanities tools, how to do so, key findings from previous research on the Instagram collecting community, and ongoing work expanding beyond Instagram. At the very least, we believe that machine learning does reveal important, otherwise hidden, aspects of the visual and textual rhetoric that underpins the sale, trade, auction (and sometimes forgery) of the dead.

Granados Vazquez, Geraldine (PhD student, Posgrado en Antropologia Fisica, ENAH), Isabelle Séguy (Cultures et Environnements Préhistoire, Antiquité) and Lourdes Marquez (Escuela Nacional de Antropología e Historia) [302] The Risk of Dying in Ancient Societies. Vulnerability from a Bioarchaeological Approach. Theoretical-Methodological Model

The goal of my research is to design a theoretical-methodological model to evaluate the vulnerability to death in past urban societies. Every human being is exposed to risk, but depending on the social and biological characteristics of individuals may be more or less susceptible to irreversible damage. The risk is a dynamic concept; thus, vulnerability may only be evaluated in terms of relative parameters. In this study, I will focus specifically on the risk of death in past urban societies in connection with the everyday life, using the archaeological contexts to create social variables. This theoretical and methodological model proposes four areas to assess vulnerability as follow: Demographic dynamics, Frailty, Inequality, and Embodiment. The first three areas are used to apply statistic model, while the fourth area, is based on qualitative analysis. To test this theoretical and methodological model that I am proposing, I am applying this model of Vulnerability in a Mesoamerican sample, at Monte
Grant, Christopher (University of Chicago)  
[190] Perspectives from a Privy Past: Neighborhood and Race in Late Nineteenth-Century Creole New Orleans

The Faubourg Tremé is often referred to as America’s oldest African-American neighborhood and has been the site of significant social, cultural, and political developments in New Orleans for the past two hundred years. From the colonial period onward, the neighborhood fostered the growth of the city’s Creole population and displayed a distinct cultural and demographic makeup unmatched in other parts of the American South. In recent decades, scholars have considered the Tremé as a rich site of cultural production, situating the history of the neighborhood within wider discussions of immigration, creolization and race. But as the twentieth century neared, the city’s ancient population entered a period of diminishing social and economic prosperity—an era often subject to literary tropes of decay and decline. Privacy finds from a household in the Tremé provide an alternative perspective—this project re-examines the neighborhood’s residents in wider networks of urban and demographic change. This poster re-examines the historical and symbolic importance of the Tremé by close examination of a single late-nineteenth/early-twentieth-century privy. The privy deposits offer a hidden history of the neighborhood as well as renewed insight into the methodological value of the privy as a central resource in historical archaeology.

Grant, Madison (University of California, Santa Barbara) and Jacqueline Pittman (Rowan University)  
[223] An Experimental Approach to Fracture Variation Attributed to Weapon Morphology Using Replica Chankan Maces

The use of stone weapons is prevalent throughout the history of the Chanka (C.E. 1050–1400), a civilization that inhabited the Apurímac region in Peru and once rivaled the great Incan Empire. Accordingly, the impact fractures such weapons create provide direct evidence to decipher the deaths of these Andean warriors and their violent past. This project seeks to provide experimental evidence of fracture variation attributed to differences in weapon morphology, which can be compared to the blunt force trauma identified on recovered skulls. The study focuses on two distinct weapons frequently observed in the Chankan archaeological record: the star mace and the circular mace. The weapons were reconstructed in accurate weight and form from casts of authentic artifacts and will strike 10mm-thick casts of dental plaster, which mimic the frontal bone—a probable surface for impact damage in hand-to-hand combat. To achieve an accurate result, the experiment will consist of no less than 100 trials. Preliminary assessment suggests the star mace will result in the most fractures due to its several points, rolling across the frontal bone to create multiple areas of impact damage; however, the greater weight of the circular mace is expected to result in wounds of greater depth.

Grávalos, M. Elizabeth (University of Illinois at Chicago) and Emily Sharp (Arizona State University)  
[211] Enduring Traditions, Material Transformations: Understanding Wari State Influence in Highland Ancash, Peru

Scholars have debated the nature of Wari state expansion during the Middle Horizon in north-central Peru for decades, suggesting both top-down imperialism and local resistance. While our paper does not aim to resolve this issue, we put previously reported datasets into conversation to examine both social change and cultural resilience in the Middle Horizon (MH). We draw on ceramic and mortuary evidence from the Callejón de Huaylas region of highland Ancash and identify the incorporation of a “Wari international identity” into local practices, embedded in previously developed Recuay (Early Intermediate Period) traditions. Specifically, we question the nature of Wari statecraft and extent of ideological influence by contextualizing changes in material culture within traditions and practices that endured during the MH. We end our discussion with an overview of findings from the 2017 excavation season at the Recuay site of Jecosh, situating results within a broader regional context. Jecosh offers an ideal case study to examine Wari presence in the region due to its strategic location along important trade routes. Although the Recuay kaolin ceramic tradition faded during the MH, certain cultural practices continued, suggesting resilience via syncretism and the development of new social and economic relationships with foreign groups.

Graves, Peter [175] see Heng, Piphal

Gravel-Migué, Claudine (Arizona State University)  
[83] Taught or Copied? Using 2-Mode Network Visualization to Distinguish between the Two

Traditional research on European Upper Paleolithic social networks rely on raw material sourcing as well as the distribution of similar “artistic” styles. This project aims to improve the methods of the latter. While similar representations found in different sites have often been assumed to represent the presence of social contacts between those sites, the possibility that such representations were exchanged or even simply copied without direct contact has always loomed over researchers’ head. In this research, I use an experiment to evaluate the retention of motor habits in the production of different designs, and experiment with the potential of 2-mode analysis of design and technique when sourcing art to differentiate between copied and taught designs. I then apply this method to portable art objects of the Cantabrian Magdalenian to shed light on the social networks that may have taken place during that period. These networks are compared to the ones identified solely through design to demonstrate the importance of considering technique when looking at cultural transmission.

[234] Discussant

Graves, Devon [323] see Ciofalo, Andrew

Graves, William (Logan Simpson and University of Arizona) and Christopher Garraty (Logan Simpson)  
[39] A Prelude to Displacement: An Archaeological Reconstruction of Community History at San Pablo and Barrio del Hoyo in Tempe, Arizona

Recent excavations on the Arizona State University Tempe campus provide a glimpse into the early 20th-century Mexican-American neighborhoods of San Pablo and Barrio del Hoyo. Located next to the original campus grounds, San Pablo and Barrio del Hoyo were residential and commercial hubs of
early Tempe. After World War II, urban development and renewal efforts by the university and land developers targeted these two neighborhoods for campus expansion and displaced their residents, quickly destroying the neighborhoods with the construction of apartments, dormitories, and other university buildings. Domestic features excavated in these two neighborhoods show us that, in the decades preceding their destruction, both neighborhoods were thriving, with residents of a variety of different incomes who pursued various economic pursuits—not unlike the Euro-American neighborhoods of early Tempe. San Pablo and Barrio del Hoyo were not blighted or in need of renewal and the eventual fates of these neighborhoods reflected their status as minority communities within Tempe, a lack of political power, and structural racism. In this way, San Pablo and Barrio del Hoyo are similar to other examples of the destruction of Mexican-American communities in the West, such as Barrio Libre in Tucson and Chavez Ravine in Los Angeles.

Grayeyes, Willie (Utah Dine Bikeyeh) [96]
Discussant

Greaves, Russell (Peabody Museum, Harvard), Karen Kramer (Department of Anthropology, University of Utah) and Christopher Dore (College of Social and Behavioral Sciences, School)
[63] Ethnoarchaeology of Water Resources in a Landscape without Rivers: Using Limestone Solution Cavities to Study Settlement and Subsistence Activities in a Yucatec Maya Community, Mexico

Ethnoarchaeological investigations in the Yucatec Maya community of Xculoc recently included inventorying the location and uses of a range of small- to large-scale water sources. This karst landscape has no surface rivers, ponds, or lakes. Currently, the community uses a deep well at the former hacienda in this location. However, at least 60 years ago most families that coalesced into this village were distributed in relation to smaller reliable water sources near the current community location. Field research located the known water sources and their uses. These solution cavities in the limestone bedrock range from large and deep sources that contain water year-round fed by vadose water flow to small and ephemeral pockets that are seasonally filled by rainfall. All of the identified water sources (sartenejas, aguadas, and cenotes) are maintained and still used at least periodically for apiaries, incidental agricultural use, laundry washing, drinking water sources for groups working away from the village, and as locations to check for game during hunting trips. Our research addresses how these sartenejas and aguadas can be used to study past settlement in the region of Xculoc, as well as past and present economic activities.

Gredell, Erin [322] Discussant

Green, Adam (University of Cambridge)
[121] Introducing Urbanism, Technology, and Identity: Celebrating the Comparative Archaeology of Rita P. Wright

In this talk, we introduce the papers of the session, which reflect the many threads of Rita P. Wright’s contributions to archaeology. Prof. Wright has established a suite of concepts and critiques that generate a comparative framework that is not restricted to a single geographical area. In her early work on ceramic production and craft, Wright synthesized the anthropology of technology with the archaeology of the Indo-Iranian borderlands, laying the foundation for a technological approach that transformed the archaeology of South Asia. Her critical re-evaluation of early cities, states, and complex societies incorporated past people and groups previously omitted from investigation, bringing to the forefront the political and economic dimensions of households and other social entities. Her work also drove the archaeology of identity and gender, correcting traditional approaches that too often left humanity out of explanations of the past. She has also established a landscape approach that examines the social relations that connected the city of Harappa to its many surrounding settlements, she has revealed rural/urban interactions that drove the emergence and transformation of urbanism. The impact of these contributions is ongoing, and has set the agenda for a new generation of comparative archaeology.

[121] Chair

Green, Adam [121] see Petrie, Cameron

Green, Jennifer (University of Tennessee)
[111] Evaluating Dietary Change: Adaptive Strategies within the Northern Everglades and Surrounding Areas

Throughout the past several millennia South Florida has been subject to profound environmental changes. As such, by examining paleoenvironmental change on seasonal and climatic scales, we can further understand this unique environment and infer how it has shaped human and animal histories of the past. This work will be carried out by employing broad spectrum ecological theories which shall provide the necessary framework to understand past resource scheduling, seasonal mobility patterns, and fluidity of resource utilization by the Paleo-inhabitants of the region. Inferences based on several sites across South Florida will illustrate the paleo-resiliency of the regional inhabitants to adapt to variable environmental change including fluctuations in water levels and vegetative communities. A broad regional framework analyzing zooarchaeological materials from sites within the Northern Everglades and surrounding areas will contribute to the knowledge-base of the area from the Late Archaic Period to the present. Accordingly, this research has implications for conservation biologists in understanding prehistoric human exploitation of white-tailed deer in Southwest Florida prior to significant anthropogenic changes over the past several hundred years.

[90] Chair

Green, Kirsten (University of Montana) and Meradeth Snow (University of Montana)
[338] Title IX from a Researcher’s Perspective

No one expects to face any sort of harassment or discrimination and we can feel blindsided when something occurs that puts us, and/or our career, at risk. The question of “what next?” can be daunting, especially in the face of choices that have massive repercussions personally and professionally. Frank discussion of the variety of ways to best maneuver a harassment situation, based on the literature and the experience of professors and colleagues, will be discussed. Additionally, how harassment and discrimination affects an individual’s choices and career options in research and academia will also be touched on. There are options available to people who face Title IX violations—and while the decision on how to respond is up to the individual—the importance of being informed of the options and ideas allows for a clearer perspective of how one may proceed.

Green, William (Logan Museum of Anthropology, Beloit College), Steven DeVore (Midwest Archeological Center, National Park Service) and Adam Wiewel (Midwest Archeological Center, National Park Service)
[301] Geophysical Survey and Remote Sensing at Gast Farm, Southeast Iowa: Hidden Mounds and Middle and Late Woodland Community Plans

Gast Farm (13LA12), situated on a Mississippi River valley alluvial fan, has been a focus of interdisciplinary study since 1990. Surface collections and excavations documented two Woodland communities and one mound. The Weaver community (Late Woodland, ca. A.D. 400) was determined to have been a circular village with a central plaza, but details of the Havana community (Middle Woodland, ca. A.D. 100) and mound structure were not clear. Aerial imagery seemed to indicate the presence of geometric earthworks. Magnetic survey in 2016 confirmed the circular-plaza layout of the Weaver village and discovered that the Havana community was apparently organized as a ca. 130 x 110-m ring of domestic features surrounding a central
plaza. This may be the first complete plan of a Havana village (as opposed to a hamlet) to be documented. The 2016 survey also found no evidence of geometric earthworks but discovered six additional mounds.

Greene, Janaka (Texas State University) [127] Investigating the Cody Complex at the Capshaw Site, a Late Paleoindian Site in Texas This paper presents the results of an investigation conducted at the Capshaw site, a lithic scatter site, located within the Southern High Plains region in the panhandle of Texas. The Southern High Plains region is well-known for its rich archaeological record of Paleoindian peoples, however the Cody period remains relatively poorly understood. The paper will first describe the history of the site from its discovery in 2013 through archaeological surveys with explorative field school excavations conducted in 2015. Magnetometry survey was conducted in 2017 as an attempt to locate buried cultural features. Further excavations were carried out later in the Fall of 2017. However, the focus of this paper is to present the results of the lithic and geoarchaeological analyses of the material from the Capshaw site in order to interpret whether Cody peoples used the site as a residential camp, a kill site, or a special activity site by comparing the assemblage to models derived from archaeology and ethnohistory. The Capshaw site represents a unique set of data which could help answer broader questions regarding Cody period settlement and social organization in the Plains region. Lastly, this paper also comments on the direction of future research about Cody peoples.

Greenfield, Haskel (University of Manitoba), Justin Lev-Tov (The Alexandria Archive Institute, San Francisco), Ann Killebrew (The Pennsylvania State University) and Annie Brown (University of Manitoba) [90] Sacrificing and Eating Dogs in the Ancient Eastern Mediterranean World In the late 1990s and early 2000s, Walter Klippel and his former student Lynn Snyder published finds of butchered dog bones from the Dark Age site of Kavousi in Crete. Other researchers, both before and after that published work, noted such finds elsewhere in Greece as well as in Cyprus, and dating to a wide range of post-Neolithic periods. Butchered dog bones are also known from several Philistine sites in Israel. Here, we consider present a detailed discussion of a butchered, apparently sacrificed, puppy found at the site of Tel Miqne-Ekron in Israel. Finds of disarticulated dog bones bearing butchery marks at Philistine sites in Israel has led, alongside the sacrificed puppy, to discussions regarding the significance of this practice, possible ethnic implications or connections with other regions in the eastern Mediterranean.

Greenlee, Diana [156] see Hargrave, Michael

Greenwald, Alexandra [65] see Shimada, Izumi

Greer, Matthew (Syracuse University) [67] Black Virginians and Locally Made Ceramics in the Shenandoah Valley One thing for which Virginia's Shenandoah Valley is known is its active antebellum ceramic industry. While predominantly German and Scots-Irish peoples colonized the region from the 1730's onward, it was the Germans who brought their potting traditions to the Valley. By 1745, German potters began to fill local needs for ceramics, a trade which grew in importance over the next century and a half. These vessels took on more than just utilitarian roles, as choosing to purchase locally made ceramics over imported wares allowed Valley residents to perform various ethnic, regional, and racial identities. As a result, researchers portray these pots as inherently White things, made by Germans for Germans (and their Scots-Irish neighbors). This does not hold up, however, when we add Black Virginians into the picture. From free Black potters and enslaved peoples who labored for White potters to enslaved consumers who bought local vessels for themselves, Black Virginians in the Valley regularly interacted with these ceramics. This paper explores the connections between Shenandoah Valley ceramics and free / enslaved peoples, allowing us to view these vessels in a new light—one which better reflects the region's diversity.

Gregory, Carrie J. [261] see Barnes, James

Greig, Karen (University of Otago) [125] Living on the Edge: Dogs and People in Early New Zealand New Zealand is situated on the southern margins of the Polynesian triangle in the Pacific Ocean. Its temperate climate and environment differs greatly from the tropical central East Polynesian islands, from where its first human colonists originated. Although possessing plentiful bird life, sea mammals and other marine taxa, people faced challenges adapting their tropical horticultural practices to this new land. This paper explores the changing fortunes of people and dogs during the settlement and occupation of New Zealand, and the extent to which early dog populations may reflect the economic success or otherwise of associated human communities.

Greiman, Nora [268] see Dempsey, Erin

Gremillion, Kristen [137] see Wales, Nathan

Griffith, Cameron S. (Texas Tech University) [101] 3D Scanning the Virgin Mary in the Toast: Using Handheld Digital Imaging Technologies to Explode the Myth of Pareidolic Illusions in the Ancient Maya Underworld Cave archaeologists around the world are increasingly utilizing many new platforms and techniques to document subterranean artwork, including digital imaging and scanning technologies. In this presentation I demonstrate a portable and cost-effective approach to digital imaging of parietal art. To this end, I used an Occipital Structure Sensor 3D scanner, mounted on an iPhone 6, to document various monumental modified speleothem sculptures in the subterranean realm of the ancient Maya of Belize, Central America. In addition to comparing and contrasting the methodologies, results, costs, time, and logistics involved with this system to other popular scanning systems, I provide ideas suggestions for those who may be interested in carrying out similar initiatives in the future.

[101] Chair

Griffiths, Michael [213] see Buckley, Brendan

Grillo, Katherine [297] see Hildebrand, Elisabeth

Grimes, Vaughan [16] see Harris, Alison

Grimstead, Deanna [187] see Mendel, Catherine
A Palynological Approach to Colonial Agro-Pastoral Activities at LA 20,000, New Mexico

Investigating how the presence and use of herded domesticates shaped life and the landscape in the Rio Grande gorge, this paper draws on a particular case study to explore the interactions between the endemic and the introduced within colonial herding practices. One strand of analysis will involve zooarchaeological and taphonomic data from colonial domestic contexts—predominantly based upon excavated midden deposits from selected sites in the Embudo Valley. This will be coupled with a consideration of archaeological survey data pertaining to herding encampments identified across the broader northern Rio Grande region. By combining both these distinctive, but complementary, lines of evidence we will offer a multi-scalar account of the impact of colonial modes of pastoralism within a New Mexican context. Themes to be examined will include changes in dietary practices within the home and village, patterns of labor and movement with respect to herding economies, and transformations in entire landscapes wrought via the large-scale introduction of new species of domesticates. Each of these themes will be brought together in order to think about the impact of colonial herding on the deep ecologies of the broader American Southwest.

Beyond Good Grey Culture: Rethinking Early Woodland Origins in the Lower Mississippi Valley

The origins of Early Woodland cultures have long been poorly understood, but recent data from sites in the Yazoo and Tensas basins, and from sites along the coast are providing new perspectives on the development of the Woodland tradition in the Lower Mississippi Valley. In this paper we summarize Steve Williams’ contributions to understanding Woodland origins and update his work with new data. In contrast to earlier thinking, recent research shows that Woodland peoples in the Lower Mississippi Valley have complicated ancestries with multiple histories. These aren’t monolithic Good Grey Cultures; instead, the Early Woodland is a period of dynamic change as vibrant populations adapted to novel environmental and social circumstances following the collapse of Poverty Point.

A Palynological Approach to Colonial Agro-Pastoral Activities at LA 20,000, New Mexico

The local environment at LA 20,000 played a major role in influencing what kinds of activities could take place at the ranch built by Spanish colonizers in the 17th century. Palynological analysis is used here to understand how the environment changed over the course of the colonial era and, in turn, inform what types of activities were performed at the site. My research identifies and quantifies plant taxa using palynology in order to understand land use at LA 20,000, a 17th century rancho site in New Mexico, and asks how the local environment and natural resources offered opportunities as well as limitations to the people living on the land. A diachronic approach will characterize plant populations before and after the establishment of LA 20,000, while a synchronic approach focusing on the 17th century colonial period will assess pollen signatures from different activity areas around the site, including the house, barn, and corral, in order to understand the specifics of Pueblo and Spanish land use practices, such as field crop production and livestock management. Together, these approaches inform the relationship between Spanish colonialism and the creation of social identity through food production and consumption.

Analysis of the Faunal Remains at the Arch Street Cemetery Site

Prior to moving the burials within the First Baptist Church of Philadelphia cemetery to a new location in 1860, a local newspaper of the time documented that the neighboring tenement houses used the open space as a dumping ground. Artifacts recovered from this deposit include pottery sherds, pieces of glass bottles, leather shoe soles, metal objects, and the remains of shellfish and domesticated animals. Many of the animal bones show signs of butchery, indicating that the remains are from food waste. Oyster, clam, sheep (mutton and lamb), and cattle were consumed by these tenants, as well as medium and large fowl, likely chicken and turkey. The goal of this paper is to quantify and analyze the faunal remains and compare the data to what we know of contemporary nineteenth-century Delaware River Valley resident diets.

Mesodesma donacium as a Paleoclimatic Archive on the Coast of Peru

Quebrada Jaguay is one of the earliest maritime settlements in the New World. The southern Peruvian coastal site was occupied from the Terminal Pleistocene to the Middle Holocene ~13 to 8 ka and demonstrates a society highly dependent upon marine resources. Archaeological deposits excavated in the 1990’s and 2017 contained high volumes of marine faunal remains, predominantly the surf clam Mesodesma donacium, which accounts for 99% of the shell remains. M. donacium are used in this study to examine seasonality of occupation and paleoenvironmental conditions. Incremental stable oxygen isotope ratios from the calcium carbonate of the shells allow for sea surface temperature (SST) reconstruction from the onset of shell development until harvest. Reconstructing SST from multiple shells allows for the development of monthly averages during site occupation. The final temperature sequence of each shell defines the season of harvest, which then informs on the seasonality of human occupation. Periods of environmental instability, such as El Niño events, are identifiable as significant deviation from the monthly SST averages. Paleoenvironmental reconstructions of Quebrada Jaguay provide insights on occupation patterns as well as how early inhabitants of Peru responded to environmental instability.

The Character of Carbonized Rice in Hunan Archaeological Site

Based on the comprehensive analysis of grain shape and embryos of carbonized rice from archaeological sites, the author draws conclusions as follows:

a. There is a difference in shape of spikelet base between cultivated rice and wild rice, but it is difficult to make comparable measurements. Therefore, it is possible to identify rice by using the characteristics of the spikelet base based on one’s experience, but it is difficult to make comparisons between different researchers.

b. According to my study, some wild characteristics still can be observed on the cultivated rice of the Qujialing Culture dated to 5000 years ago. This
suggests that some changes of morphological characteristics may have lagged during the process of rice domestication.

c. Based on the results of discriminant analysis, the percentage of cultivated rice gradually increases: 47% → 67% → 79% → 92%. This pattern suggests that the morphological characteristics of rice changed gradually during the process of rice domestication. The origin of cultivated rice is therefore a long evolutionary process.

d. However, in the rice domestication process, the evolutionary speed of change differs for grain shape, awn, and embryo.

Gu, Muxin [43] see Buckley, Michael

Guagnin, Maria (FU Berlin & Max Planck Institute for the Science of Human History) and Angela Perri (Department of Archaeology, Durham University & Dep)

Dog-Assisted Hunting Strategies in the Early Holocene Rock Art of Saudi Arabia

The UNESCO world heritage sites of Shuwaymis and Jubbah, in northwestern Saudi Arabia, are extremely rich in early Holocene rock art. Hunting scenes illustrate dog-assisted hunting strategies from the 7th and possibly the 8th millennium BC, predating the spread of pastoralism. The engravings represent the earliest evidence for dogs on the Arabian Peninsula. Though the depicted dogs are reminiscent of the modern Canaan dog, it is unclear if they were brought to the Arabian Peninsula from the Levant or represent an independent domestication of dogs from Arabian wolves.

A substantial dataset of 147 hunting scenes shows dogs partaking in a range of hunting strategies adapted to the environment and topography of each site. All depicted dogs appear to share the same phenotypic traits, and hunting scenes show up to 21 dogs in a single group. Particularly notable is the inclusion of leashes on some dogs, the earliest known evidence in prehistory. The leashing of dogs not only shows a high level of control over hunting dogs before the onset of the Neolithic, but also that some dogs performed different hunting tasks than others.

Gualdi, Emanuela [23] see Tafani, Aurelien

Guandique, Coralia [56] see Liu, Chin-hsin

Guarino, Michael [120] see Sellet, Frederic

Guderjan, Thomas (University of Texas at Tyler)

Albarradas, Solaris, and Classic Maya Land Tenure in Northwestern Belize

The traditional, but yet poorly-defined, view of Classic Maya (AD 250–850) land tenure was that control was somehow vested in the royal and elite parts of society with “commoners” occupying land at royal pleasure. The exceptions to this pattern were known in “urban” cities such as Coba and Chunchucmil in the northern Yucatan and some coastal locations such as Playa del Carmen and Cozumel. However, the latter instances are commonly thought to date to the Postclassic period and were believed to be a departure from the Classic period pattern.

A LiDAR survey in 2016 of northwestern Belize revealed large blocks or groups of residences with boundary walls at the sites of Xnoha, Grey Fox and Blue Creek. Several hundred residential houselots have boundary walls enclosing areas of 1000–1500 square meters. The potential implication of this discovery is that Maya “commoners” had very different principles of land tenure than we understood and that they were more akin to our private ownership than we previously understood.

Guderjan, Thomas [173] see Krause, Samantha

Gudiño, Alejandra [132] see Lippi, Ronald

Guedes, Carolina (Museum of Archaeology and Ethnology/USP)

The Rock-Art of Central-West Brazil: New Studies from Chapada dos Guimarães / MT

A new project carried out in the region of the Rio Vermelho / São Lourenço river basin in the central-western region of Brazil started in 2016. This project focuses on the studies of the initial stages of the establishment of the hunters gathers groups in this region. It is intended through excavations, surveys and research in rock art to show patterns of the peoples who inhabited that region. The first systematic field surveys within this project, entitled “Archeology in the Pantanal region” recorded a total of 12 rock-art sites. Here it will be presented the first systematic approaches in these sites, considering the character of the diversity of rock art in this region, still little explored.

Guengerich, Anna (Vanderbilt University)

The Messy East: Regional Models and Their Complications in the Chachapoyas Area of Peru

The Chachapoyas area has long been considered an internally coherent archaeological and sociohistorical region, one of the few associated with the Eastern Andes. Recent research, however, reveals significant environmental and cultural diversity and calls into question whether “Chachapoyas” can meaningfully be understood as a single region. There is little evidence for any practices that both unified it internally while distinguishing it from others, and ongoing research at the site complex of Tambillo in comparison with other areas of Chachapoyas indicates that the most productive approach at this stage is to focus on characterizing social and cultural patterns at the local level. Determining how, or whether, higher-order sociocultural units were constituted at the regional level requires greater bodies of data than those currently available. In this situation, it is both analytically productive and potentially more accurate to understand all interactions as inter-regional, even among groups that were once considered to belong to the same “region.” Similar geographical and environmental conditions found in many parts of the Eastern Andes suggest that it is important to more broadly evaluate the importance of scale and landscape in characterizing inter-group interactions, and to reconsider models developed from coastal and highland contexts.

Guenter, Stanley [252] see Hansen, Richard

Guernsey, Julia (University Of Texas At Austin), Andrew D. Turner (Yale University Art Gallery) and Michael Love (California State University Northridge)

Feline Pedestal Sculptures, Cacao, and the Late Formative Landscape of Mesoamerica

Pedestal sculptures featuring supernatural felines with cacao drupes projecting from their foreheads dotted the Late Formative landscape of the Pacific slope and adjacent Guatemalan Highlands. In this paper we consider the implications of the replication of this sculptural form, its role in articulating an elite agenda linked to the production of cacao, and its pertinence to sites of varying scale and relative regional authority. A similar suite of meanings
engaged with cacao and supernatural characters persisted during the Classic period, especially in courtly circles. Yet the iconographic and social antecedents for these concepts emerged far earlier, likely between 500–300 BC. We explore the ways in which these Late Formative messages of elite authority, expressed metaphorically but laden with the economic implications of cacao production, proliferated across the physical landscape of Mesoamerica by the advent of the Late Formative period. We also consider what they tell us about the porous boundaries between cultivated and “wild” spaces and the ways in which they factored into elite rhetoric.

Guerra, America [15] see Drake, Stacy
Guerra, Rafael [28] see Collins, Renee

Guiducci, Dario (Université de Montréal)
[219] A GIS Approach to Landscape Legibility and Its Role in Late Pleistocene Hominin Dispersals
The large-scale colonization of unfamiliar environments by Late Pleistocene humans would have required advanced navigational abilities. Archaeological signatures of spatial cognition are difficult to identify in Prehistory, although the presence of well-dated sites can help us track human mobility across the landscape. In this research, we test whether structural properties of the environment played an important role in helping humans navigate new landscapes, providing affordances for wayfinding that enabled people to quickly assimilate and make sense of their surroundings. To this end, we model a key geographic concept: landscape legibility. We present the results of a multi-scalar spatial analysis of Proto and Early Aurignacian site distribution in Western Europe, testing whether landscape legibility was a key factor in conditioning where people settled.

[219] Chair

Guillem, Anaïs [130] see Lercari, Nicola

Guiry, Eric (University of British Columbia)
[125] Archaeological Rat Diets Reflect Settlement Density: An Isotopic Investigation of Historical Rat Bones from Urban and Rural Sites in Upper Canada
Over the past 1000 years, rats have spread out globally to become among the most ubiquitous and prolific pests in the world. While the global success of rats is largely owed to their ability to exploit human societies for food, shelter, and transportation, there has been relatively little research exploring rat behavior in urban contexts, where rat populations have been most successful. In this study, I use stable carbon and nitrogen isotope analyses of archaeological rat (Rattus sp., n=87) bone collagen from 10 nineteenth-century urban and rural sites around the historical city of York (now Toronto) in Upper Canada (now Ontario, Canada) to assess past rat diet and foraging behavior. Rat stable isotope values show significant differences in dietary composition and diversity between urban and rural sites. Results from analyses of rats are interpreted within a framework of isotopic data from domestic animals including cats, dogs, and raccoons to better understand how different anthropogenic habitats influence the urban ecology of rats. These findings highlight the potential for using isotopic analyses of archaeological fauna to explore ecological and commensal relationships between humans and animals in urban spaces through time.

Gunchisuren, B. [24] see Ciolek-Torello, Richard

Gupta, Amita and Vinod Nautiyal (HNB Garhwal University, India)
Trans-Himalayan archaeology was always neglected by the historians and Archaeologist. But some recent excavations and my Ph.D. field work presented an interesting view of Trans-Himalayan culture. The burial culture of this region dated back to 600–200BCE. I found here the remains of Pyro-technological activities. Steatite bead was first time found in Trans-Himalaya. They are in size from 2 to 4 mm in diameter, 103 mm in height, and hole width is about 1 mm. The beads were examined by using SEM and XRD. XRD examines shown that the beads are prepared of enstatite, a Mg-bearing pyroxene, and cristobalite. Lastly the shape was cut into the form of beads. I would like to present this work and also few other metallurgical activities which were also take place here.

[3] Chair

Guralnick, Rob [217] see Emery, Kitty

Gusick, Amy (Natural History Museum of Los Angeles)
[283] Lessons from the Past: The Grand Human Journey to the New World
Migration is a fundamental aspect of humanity and archaeologists have long been interested in studies of human mobility. Some archaeologists have taken a historical ecological approach to understanding human movement and how a deep history can inform on mobility in contemporary society. By leveraging knowledge from a variety of disciplines, these archaeologists have made great strides in our understanding of past human movement as it relates to postglacial human dispersals and climate change, a pertinent topic for today. The initial human migration into the New World is an early human dispersal that has become a focal point in mobility research that strives to understand the impacts that climactic change and shifting environments have on human’s ability to successfully migrate and adapt to new lands. This presentation considers our current state of knowledge not only on how humans may have migrated into North and South America and adapted to their new surroundings, but also on what may have caused this initial migration to occur. Decades of interdisciplinary research, including more recent innovative projects, provide a wealth of data to consider how and why humans made the grand journey to the New World, and what this may mean for today’s society.

Gustas, Robert (University of Victoria) and Kisha Supernant (University of Alberta)
[239] Theoretical Frameworks for Modelling Late-Pleistocene Coastal Migration into the New World
Spatial modeling of early prehistoric maritime movement on the Pacific Northwest Coast is important in contemporary archaeology because it can help locate new sites in a landscape which has radically changed over the last 20,000 years. Here we present the theoretical framework used in a research project which modeled maritime movement using least cost path analysis (LCP) to determine the routes most likely to have been traveled by the inhabitants of the Dundas Islands, British Columbia over the last 16,000 cal yr BP. Two cases studies are presented to illustrate how this framework which hybridizes elements of landscape and migration archaeology can be used to suggest maritime migration routes. The resulting movement paths were systemically analyzed and locations with high probabilities of use as movement corridors and stopping points were identified. This work is some of the first to apply LCP to seascapes and marine migration in North America and the results have potential to lead to a better understanding of migration during the Late Pleistocene. Increasing our ability to predict the location of drowned sites on the Northwest Coast is an important step in furthering our understanding of this areas human history.
INDIVIDUAL ABSTRACTS OF THE SAA 83RD ANNUAL MEETING

Gutiérrez, Belkys [153] see Bermeo, Nicolas

Gutiérrez, Gerardo (University of Colorado at Boulder, Department of Anthropology) and Mary E. Pye [136] Were-Jaguars, Birdmen, and Community Performance in the Rain Petition Ceremonies in the Caves of the Upper Balsas River, Eastern Guerrero, Mexico

In this paper, we address the role of leaders and their communities during the performance of ceremonies associated with rain petition in a network of caves located in the Mixtec-Tlapanc-Nahua region of Eastern Guerrero. We present newly discovered archaeological evidence in the caves of Pozo de Muerto, Casa de la Lluvia, Cauadzidziqui, Juxtlahuaca and Gobernadores de Techan, as well as ethnographic analogy to shed new light on the use of caves as arenas of ritual and political performance from the Archaic to the Postclassic periods.

[158] Discussant

Gutiérrez, Gerardo [248] see Hinojosa-Balino, Israel

Guzman, J. (NAU Northern Arizona University) [38] Mapping Prehistoric Behavior Patterns at a Lithic Tool Stone Source in the Colorado Desert: Results of Geospatial Analysis at CA-IMP-008/H

This paper sets out results obtained following a Geographic Information Systems (GIS) analysis of the spatial patterning of stone tools at a study area in the Colorado Desert of southern California. Stone tools are examined based on their utility for an explanation of their use and importance in the lives of prehistoric foragers. Current efforts to understand the prehistory of the region is undertaken, mostly, by environmental consultants in the private sector of archaeology as part of a formal [legal] obligation prior to large land development in the form of green energy projects. The results of such analyses seldom make it to the public as published material. This study employs an academic lens to extrapolate qualitative information from quantitative data from previously unpublished cultural resources management (CRM) investigations in the region. The application of optimal foraging theory, to this study, allows for the examination of human and environmental factors and constraints facilitating predictions and interpretations of prehistoric forager behaviors and their occurrence and frequency in the archaeological record at the study area.

Guzmán, Paulina [293] see Ruvalcaba, Jose Luis

Gyucha, Attila (The Field Museum of Natural History) [245] Blending Traditions: A History of Collaborative Prehistoric Research in the Carpathian Basin

The past two decades have seen a remarkable increase in the number of joint prehistoric archaeological research programs of US and local scholars in Eastern Europe. These collaborative projects are featured by the innovative blend of profoundly different theoretical and methodological traditions. In our introductory paper to the session, with a focus on the Carpathian Basin, we illustrate similarities and differences in North American and Eastern European perspectives and approaches to explore the archaeological past, provide an overview of collaborative research projects in the later 20th century, and address how these projects have facilitated in understanding specific, major anthropological questions. Finally, we discuss how these investigations have impacted US and local anthropological scholarship and paradigms from a broader perspective.

[245] Chair

Gyucha, Attila [245] see Parkinson, William

Haakanson, Sven [277] Discussant

Haas, Jennifer [235] Discussant

Haas, Randy (University of California Davis), Todd Surovell (University of Wyoming) and Matthew O'Brien (California State University Chico) [124] Behavior from Spatial Structure in Archaeological Sites: A Working Model Based on Dukha Ethnography

Archaeologists commonly observe clear qualitative structure in the spatial distribution of artifacts deposited in archaeological sites. Quantification and interpretation of such structure remains a major challenge. Drawing on multiple field seasons of observation among the Dukha—residentially mobile reindeer herders of the Mongolian Taiga—we present a likelihood based method for quantifying site-level structure in the use of space. This ideal ethnographic case in which behavior-structure relationships are well defined, allows us to explore the extent to which behavioral inferences may be derived from archaeological structure. Behaviors of particular interest here include general activity types and seasonality of occupation.

Haas, Randy [124] see O'Brien, Matthew

Haber, Noah [12] see Ramsay, Jennifer

Habicht-Mauche, Judith (UC-Santa Cruz) [291] Viewing Ceramic “Types,” “Varieties,” and “Modes” from a Practice-Based Perspective: Case Studies from the Greater Southwest

As a student of Jimmy Griffin and Irving Rouse, much of Stephen Williams’ early archaeological research involved the typological analysis of pottery collections from the American Southeast to reconstruct regional culture history. Later, as Director of the Peabody Museum, he played an important role in facilitating the development of a new generation of archaeological and materials science approaches to pottery analysis at Harvard with the construction of the Putnam Laboratory. This paper uses current ceramic materials analysis techniques and case studies from the Rio Grande and Casas Grandes regions of the Greater Southwest to explore how mid-century taxonomic units, such as “type,” “variety,” and “mode,” can have continuing usefulness as conceptual frameworks for understanding pottery technology and production sequences as socially learned and culturally embedded practice. We reconstruct these shared communities of knowledge and practice at varying local, regional, and inter-regional scales and discuss how these practices inform our archaeological perception of standard cultural historical typological categories.

[259] Discussant

Habicht-Mauche, Judith [104] see Huerta, Danielle

Habu, Junko (University of California Berkeley) [1] Discussant
Hackenberger, Steven (Central Washington University) and Lourdes Henebry-DeLeon (Central Washington University)

[253]  **Paleoarchaic Cultural Affiliations on the Columbia Plateau**

Two decades of mortuary and bioarchaeology studies have built evidence for determinations of cultural affiliation for human remains and artifacts associated with the Paleoarchaic and Early Middle Archaic periods. Background studies (under NAGPRA: Kennewick by 2000 and Marmes in 2004, 2010, and 2012) outline major lines of evidence for determining probable affiliation. Sufficient and necessary evidence are subjects of healthy debate. Diversity in burial practices and artifacts unites more than divides Columbia Plateau communities from early times. Patterns in the locality and stages of mortuary practice (including cremation), combined with shell and ocher grave goods, strengthen models of dynamic social networks. Traditionalists and scientists are reconciling the personal identities of early ancestors. Their identities are complex and can include their status as elders and survivors, as well as their roles as individuals and explorers. Bioarchaeological studies (DNA, isotopes and trace elements), supported by Native Americans, will no doubt refine models of interaction spheres inside and outside of the Columbia Plateau. Advances in these analyses help better explain the interactions of culture and environment in shaping populations and personal life histories. Therefore, such studies will contribute to fuller understanding of the compelling identities of individuals we commemorate.

Hadden, Carla (Center for Applied Isotope Studies, UGA), Margo Schwadron (National Park Service Southeast Archeological Cent), Alexandra Parsons (National Park Service Southeast Archeological Cent) and Taesoo Jung (Georgia Museum of Natural History, UGA)

[217]  **Paleoecology, Paleoclimate, and Paleoeconomy at the Turner River Mound Complex, Everglades National Park**

The Turner River Mound Complex is an intensively modified landscape consisting of numerous shell mounds and other shell work features such as ridges, walkways, canals and ponds. Located in the Ten Thousand Islands region of Everglades National Park, a subtropical mangrove estuary, the complex is an unusual example of the prehistoric tradition of shell-built architecture in South Florida. In this project we combine traditional zooarchaeological analyses, stable isotope sclerochronology, and direct dating of faunal remains to address two key questions: (1) What was the paleoenvironmental setting at the time settlement began, and when and why was it abandoned? And (2) is there evidence of sea-level or paleoecological change associated with site abandonment? Vertebrate and invertebrate faunal remains indicate a resilient resource base, consisting of animals that were well-suited to dynamic coastal environs, such as oysters and sea catfish. Preliminary data indicate that accumulation of domestic refuse began ca. AD 220–570 and ended ca. AD 690–1000, and that some vertical mixing has occurred within the 110-cm stratigraphic column. Oxygen isotope sclerochronology on modern and archaeological oysters indicate changes in climatological and hydrological conditions at the Turner River locale over time, potentially related to changes in sea level and/or precipitation.

Hadden, Carla [111] see Hawthorne, Paige

Hadi Curti, Giorgio [72] see Dongoske, Kurt E.

Hadick, Kacey

[130]  **Archaeological Storytelling: Narrative Construction Using Virtual Reality**

Virtual reality (VR) is an exciting new medium for interactive storytelling and holds great promise as a way to raise awareness of heritage sites and the conservation challenges they face. VR can also be used as a way to provide virtual access to parts of an archaeological site that may be too sensitive for traditional tourism activities. In 2017, CyArk developed three virtual reality experiences of geographically diverse archaeological sites around the world that are being adversely impacted by climate change. The application includes Mesa Verde National Park in the American Southwest, the archaeological complex of Chavin de Huantar in the Peruvian highlands and the historic Ayutthaya in Thailand. The application will be available via mobile device on the Samsung Gear VR and the Oculus Rift virtual reality platforms. Each experience will combine 360 degree video interviews with scientific experts, dynamic audio interviews with site managers, digitized objects from several museum collections as well as fully navigable virtual environments of the archaeological sites. Brought together in VR the diverse multimedia contribute to a richer narrative. CyArk will show example content from the experience and will share the results of the public launch.

Hadley, Dawn (University of Sheffield)

[87]  **Chair**

Hagerman, Kiri (UCSD)

[25]  **Changing Representations of Gender in Ceramic Figurines during the Emergence of the Teotihuacan State**

This paper investigates transformations in the construction and expression of gender in the Basin of Mexico from the late Middle Formative through Classic periods (approx. 600 BC - AD 600). Ceramic figurines from the sites of Teotihuacan, Axotlan, Cerro Portezuelo, and Huixtoco are used to explore how elements of gender were constructed and communicated in the region over the course of a millennium, and how these practices underwent a radical transformation during the emergence and expansion of the Teotihuacan state. The selection and combination of sexual attributes and decorative elements such as clothing and jewelry were changeable strategies for depicting social identity. In contrast to earlier methods for depicting feminine and masculine bodies, Teotihuacan period figurines emphasized decorative cultural attributes over physical ones—a strategy that quickly spread to rural communities in the region. The most striking transformation occurred in representations of women, which were nude and commonplace during the Formative periods, but became fully clothed and scarce during the Classic period, when the Teotihuacan state was at its height and Basin of Mexico society was increasingly socially stratified.

Hagopian, Janet [164] see Roberts, Heidi

Haile, James [212] see Larson, Greger

Haines, Julia (University of Virginia)

[308]  **The Archaeology of Mauritanian Indentured Labor: Social Life and Death**

This paper provides a comparative case study for archaeological studies of slavery and indenture. I investigate the 19th century landscape and material culture of indentured laborers on the Bras d’Eau sugar estate in northeastern Mauritius, Indian Ocean. After emancipation, indentured laborers lived and worked within the same physical landscapes as the enslaved individuals who came before them. However, Asian indentured laborers in Mauritius were immigrants and migrants: one-third returned to their homeland at the end of their five-year contracts and the other two-thirds remained on the island and eventually became the demographic majority. In spite of the relatively shallow period of occupation in Bras d’Eau, indentured laborers left a material imprint on the landscape. Mapping and excavations of industrial building, laborers’ barracks, houses, and courtyards revealed possible Southeast Asian roots in the spatial organization of the living quarter and artifacts of mixed Asian, Indian and European origins. To better understand this particular context of unfree labor, I bring Patterson’s conception of “slavery as social death” into conversation with literatures on transnational identities and migrations. These two theoretical perspectives frame indentured laborers’ material practices as the processes of social life that emerge out of processes of social death.
INDIVIDUAL ABSTRACTS OF THE SAA 83RD ANNUAL MEETING

Halcrow, Sian (University of Otago, New Zealand) [87] Discussant [87] Chair

Halcrow, Sian [87] see King, Charlotte

Hale, Micah (Dudek), Adam Giacinto (Dudek) and Nicholas Hanten (UC Davis) [225] Micro Currencies Can Rapidly Appear Among Energy Maximizers: A Case Study from the Southern Sierra Nevada Foothills
A recent, large-scale archaeological investigation in the southern Sierra Nevada foothills revealed the development of a locally circumscribed steatite bead-making industry. Made from a local steatite source, these rough, thin, square beads are accompanied by the entire range of production debris and bead making tools, collectively dating to the post-Mission historic period. I argue these steatite beads represent a micro-currency developed as an energy maximizing response to decreased availability of California’s shell bead money.

Haley, Brian [265] see Lopez, Kirsten

Halford, F. Kirk (BLM, Idaho Deputy Preservation Officer/State Archaeologist) [261] Getting out of the Box: New Horizons for Cultural Resources Data Management and Analyses
Following the 50th anniversary of the National Historic Preservation Act of 1966, it was propelled to take both a retrospective and introspective view of the NHPA, and in particular the implementation of Section 106. Though making great strides, Section 106, the primary driver of Cultural Resource Management (CRM), is still boxed in by rote inventory and unimaginative interpretation and implementation. This paper will suggest ways we can break out of the box through better data management and analytical application. We’ll review a national initiative by BLM to create cultural heritage resource data standards and the importance of applying more rigorous data management principles to landscape level planning and data modeling, facilitating proactive versus reactive resource assessments and the development of appropriate treatments of cultural heritage values.

Hall, Amanda (University of Florida) [81] Uncovering the Mystery of the Lamar-like Clay Objects
For decades, stamped and plain clay objects recovered from post-contact Native American sites between the 1950s and 1990s in the Florida panhandle have puzzled researchers. The objects are believed to have been produced by the Apalachee Indians living in the region. However, little is known about the techniques used to manufacture them or what purpose they served. These artifacts are generally referred to as Lamar clay balls owing to some having stamped patterns similar to Lamar-like stamped pottery associated with the Apalachee missions culture. The objects are unique in the sense that they do not resemble other types of baked clay objects found in the Southeast. A recent analysis of over 300 Lamar-like objects recovered from eight different sites, combined with archival and ethnographic data, has provided information regarding their manufacturing and possible function. The results of analyses are presented in this paper.

Hall, Sarah (Arizona State University), Eric Bartelink (California State University, Chico) and Julia Prince-Buitenenhuys (University of Notre Dame) [179] Dietary Variation at Point San Jose, San Francisco: Stable Isotope Evidence from a Late 19th Century Medical Waste Pit
This study used stable carbon and nitrogen isotope analysis to evaluate dietary variation among 30 adult individuals from a commingled assemblage recovered at Point San Jose (now Fort Mason), California (1863–1903). These remains comprise mostly middle-aged adults, both male and female, and two or more ancestral groups. The assemblage was recovered from a medical waste pit with evidence of anatomical dissection, suggesting that these individuals were likely of low socioeconomic status. Right tali (MNI=22) and eight skulls, a total sample of 30, were sampled for isotopic analysis.

Stable isotope data from the Point San Jose (PSJ) sample were compared to two other contemporaneous samples: the Santa Clara Valley Medical Center (SCVMC) cemetery sample in California and a multi-regional, North American sample. Analyses suggested that PSJ δ13C collagen values were distinct from all groups except SCVMC, while δ15N values were notably different from all groups except SCVMC and the southern U.S. sample. Bone apatite carbon values further contextualized these results. Despite diverse ancestries and different burial contexts, this study tentatively suggested that Bay Area Californians of low socioeconomic status shared a similar diet during this period.

Hall, Tegan [175] see Penny, Dan

Haller Von Hallerstein, Sophia (Institute for Archaeological Sciences, Paleoanthropology, Universität Tübingen), Dorothee Drucker (Paleobiology, University of Tuebingen, Germany) and Kurt Rademaker (Northern Illinois University, USA) [2] Multi-isotopic Paleo-diet Reconstruction in a High Altitude Rockshelter of Southern Peru
Expanding on a previous report, we expand the results of the analysis of stable carbon, nitrogen, and sulfur isotope analyses from collagen of three Early and two Late-Middle Holocene adult human burials with coeval fauna remains of Cuncaicha rock shelter in the Peruvian Puna. We also reconstruct important aspects of the ecology of the Pucuncho Basin, in which Cuncaicha is located, using new and published isotopic values of archaeological and modern fauna and plants. Sulfur isotope values indicate a distinct local geochemical signal, and contribute to the development of models for the interpretation of paleo-diet. Nitrogen and carbon isotope values show a human consumption of protein from local highland animals and plant, adding to our understanding of human behavior in extremely challenging environments. We address issues of aridity and altitude in isotope signals, and chronological variation in productivity and foraging. As one of the oldest archaeological sites in South America for which stable isotope data are available, the apparent prolonged occupation of the Pucuncho Basin is important for understanding early forager settlement strategies and resource exploitation in puna ecosystems, and thus for the onset of adaptations to high altitude.

Halligan, Jessi (Florida State University) [244] Terminal Pleistocene Climate Change and Shifting Paleoindian Landscapes in North Florida
Much of the Southeastern United States suffers from poor organic preservation. Direct dating of archaeological components is often impossible, and intact paleoenvironmental sequences are very rare, especially for the terminal Pleistocene. Inundated terminal sites in the Auclla River of northwestern Florida can overcome both of these difficulties, with archaeological materials buried within directly-dateable intact strata containing well-preserved paleobotanical and faunal remains. Strata from different inundated sites can be correlated regionally by soil development and radiocarbon dates. These sites can provide high-resolution and in-depth multi-proxy records for environmental changes occurring during the terminal Pleistocene and early Holocene (ca. 18,000–7500 cal BP). Because these paleoenvironmental data are also associated with cultural materials, these records can also shed light on Paleoindian and Early Archaic lifeways.

Halligan, Jessi [78] see Waters, Michael
INDIVIDUAL ABSTRACTS OF THE SAA 83RD ANNUAL MEETING

Halling, Christine (Louisiana Department of Justice) and Ryan Seidemann (Louisiana Department of Justice)

[107] Following the Storm: Ethical Considerations for Historic Cemetery Disruptions after Natural Disasters

Louisiana is known for its historic and iconic cemeteries which feature above ground monuments, vaults, and tombs. However, equal numbers of cemeteries are in-ground, and are often lost or forgotten. Due to the accessibility of the above-ground cemeteries, these spaces make easy targets of vandalism, are used for religious worship, impede construction efforts, and become impacted by natural disasters. The in-ground cemeteries are often encountered in urban development and during disaster reconstruction. Each of these scenarios present ethical conundrums when planning archaeological responses. For example, when do religious practices venture too far and become vandalism? When should urban development become more important than the history and protection of the dead? When a disaster requires months of effort, how are recovery efforts and cemetery preservation balanced? Working in Louisiana’s historic cemeteries presents a unique sphere where interaction with the dead and living communities is intertwined so deeply, they cannot be separated. This presentation addresses that situation, following the recent natural disasters so often encountered in Louisiana; and how ethical considerations and the affected communities succeed when both groups align with intended action.

Halmhofer, Stephanie


In May 2015, a disturbed burial was uncovered in Garden Bay, British Columbia, within close proximity to the large shisháth village site of Sexwamin (DìSa-3). Found in association with the burial were 244 intact smooth, undorned mold-blown (SEMB) glass beads and 40 SEMB glass bead fragments. Due to their extremely fragile nature, blown glass beads are rare in archaeological contexts and the beads from Garden Bay are from one of only five sites in North America where SEMB glass beads have been found. The beads from Sexwamin are: 1) the first of their kind found in British Columbia, 2) first of their kind reported in Canada, 3) the first of their kind found in a mortuary context, and 4) the largest collection from the five North American sites. These beads were likely manufactured during the late 19th century in the western region of the Czech Republic formerly known as Bohemia, which by this time had become the world-leader in blown-glass bead manufacture and exportation. This presentation will discuss this unique style of glass bead and what they might begin to tell us about Sexwamin.

Halperin, Christina (Université de Montréal), Jean-Baptiste Le Moine (Université de Montréal) and Enrique Perez Zambrano (Universidad de San Carlos)

[230] Infrastructures of Moving Water at a Terminal Classic Maya Site in Petén, Guatemala

What are the temporal dynamics of water infrastructures? Recent research at the Maya site of Ucanal in Petén, Guatemala, has identified several water management features, such as canals, dams, baffles, and roads, many of which drain water away from the site core and towards a nearby river, the Río Mopan. The heavy focus on water drainage rather than water storage is seemingly incongruous with paleoclimate data, which reveal evidence of droughts during the height of the site’s occupation. This paper considers the historical context of waterways at the site from different temporal scales: the longue durée in which infrastructure construction is placed within a broad temporal framework of the site’s development and paleoclimate data, the temporal fluctuations of dry and wet seasons, the temporality of monumental time, and the everyday of water infrastructure use and maintenance.

Halstad McGuire, Erin (Department of Anthropology, University of Victoria)

[94] Cultivating Curiosity: Experimental Archaeology in Undergraduate Courses

This poster examines the use of experimental archaeology as a teaching tool in undergraduate courses. It looks at issues relating to the design, implementation, and assessment of experimental archaeology projects in upper division courses ranging from 30 to 70 students. The case studies examined here involve group-based projects centred on topics in medieval archaeology from the University of Victoria. Methods for monitoring student projects and assessing diverse experiments will be discussed. Experimental archaeology projects, though potentially challenging for instructors, are a powerful means to engage deeper student learning both in terms of archaeology as a discipline and within specific regional/topic areas of archaeology.

Hambacher, Michael

[133] Traverse Ware: A Case Study in Ceramic Regionalization, Style Horizons, Interaction Patterns, and Ethnicity in the Late Prehistoric Upper Great Lakes

Among the many changes that take place during the Late Prehistoric period in the Upper Great Lakes are greater levels of regionalization and shifts in region-wide interaction patterns. These changes are generally viewed as being reflected in varying degrees of similarity and dissimilarity in ceramic wares, decorative styles, and technology seen across the region during this period. Suites of ceramic types and decorative styles have also been used to link particular ceramic groupings with specific ethnic or tribal groups and their protohistoric antecedents. Using Traverse wares from northwestern Lower Michigan as an example, this paper will explore a number of aspects about the nature and meaning of Late Prehistoric ceramics in the region. Characterization of Traverse ware provides a basis for examining patterns of group identity and intergroup interaction patterns, as well as the meaning of stylistic horizon markers that aid in unifying and differentiating archaeological groups and broader implications about the relationship between ceramics and ethnic identity in the region.

Hamblin, Andrew [238] see Baxter, Carey

Hambrecht, George (University of Maryland College Park)

[195] Zooarchaeology, Shifting Baselines and a Rapidly Changing Climate

Anthropogenic climate change will both aggravate existing and create new situations in which local communities encounter the power of larger networks looking to either exploit or manage resources in their area. This paper will discuss a variety of ways in which zooarchaeological data investigated in a historical ecological mode might be useful in such circumstances. Zooarchaeology creates a deep context for human and animal dynamics, investigates anthropogenic as well as environmental influences on communities in the past. Due to this, zooarchaeology should be in a position to help mediate future conflicts over the exploitation and management of animal species that will only increase in the face of anthropogenic climate change. This paper will focus on the relevance of shifting baseline data and zooarchaeological approaches to this phenomenon in the context of local communities and anthropogenic climate change.

Hamilton, Derek (Scottish Universities Environmental Research Centre), Kerry Sayle (Scottish Universities Environmental Research Centre), Colin Haselgrove (University of Leicester) and Gordon Cook (Scottish Universities Environmental Research Centre)

[29] Application of Multi-Isotopic Analysis (δ13C, δ15N, and δ34S) to Examine Mobility and Movement of People and Animals within an Iron Age British Society

The middle of the Iron Age in southern central Britain (c. 400–200 cal BC) is a period that is often seen as becoming regionally inward-looking. A primary focus of the mixed agriculturalists is on building and maintaining massive hillforts. There is very little long-distance exchange or trade noted in the archaeological record, and the metalwork at the time takes on insular forms (e.g. involuted brooches) that separate it from the Continental connections observable in both the Early and Late Iron Age.
This paper will present the results of recent multi-isotopic work (δ13C, δ15N, and δ34S) on human and animal bone collagen from the Wessex sites of Suddern Farm and Danebury hillfort, which alter this narrative. We suggest that the high variability in δ34S observed within the horses is directly related to these animals being used to cover large distances, while these same numbers in cattle are indicative of them being moved potentially upwards of 100–300 km prior to their death and deposition. The scale of the mobility within the animal populations leads us to question the broader economy and social connections at this time.

Hamilton, Marian (University of New Mexico), Cyler Conrad (University of New Mexico), Patricia Crown (University of New Mexico), Wirt Wills (University of New Mexico) and Emily Lena Jones (University of New Mexico)

Carbon, Nitrogen, and Oxygen Stable Isotope Ratios from Room 28 Lagomorphs

Stable isotope analysis is a powerful tool for investigating ecological change and human impact in the past. Here, we present carbon, oxygen, and nitrogen stable isotope results from lagomorphs excavated from Room 28 alongside those from two other archeological sites within Chaco Canyon (Pueblo Bonito middens and the Bc57 site) as well as modern lagomorphs collected opportunistically during archeological survey. Oxygen isotope ratios remain consistent between time periods and locations, which is inconsistent with the idea that oxygen isotopes can be used as an indicator of long-distance procurement of small mammal fauna in ancient Chaco Canyon. Carbon isotopes are enriched for archeological versus modern fauna suggesting a heavier C4 plant component to past lagomorphs’ diets. Room 28 lagomorphs are also significantly more enriched and more highly variable in their nitrogen isotope ratios than those from modern collections. This pattern of enriched carbon and nitrogen isotopes archeologically is not observed in rodents, suggesting that the lagomorph differences are not purely the result of ecological change. Rather, these results are consistent with the garden-keeping hypothesis, in which ancient people in Chaco Canyon supplemented the diets of lagomorphs with agricultural crops (maize) from fertilized fields.

Hamilton, Michelle [90] see Devlin, Joanne

Hammer, Emily (University of Pennsylvania)

Water and Pasture Infrastructure of Mobile Pastoralists in Southeastern Turkey

Archaeology has long seen mobile pastoral societies as largely materially “invisible” both in the realms of portable artifacts and of infrastructure projects such as buildings and landscape modification. Recent studies have sought to alter this impression as part of larger trends that seek to ground our understanding of pre-modern pastoralists in concrete fauna, botanical, isotopic, landscape, and historical data, which clearly show the effect that pastoral practices and infrastructure have had on cultural landscapes through time. I draw on ethnographic and archaeological case studies from the Middle East to discuss some general political, social, and environmental issues affecting the elaboration of pastoralist infrastructure in seasonal territories and the complex relationships transhuman people have with the infrastructure of surrounding sedentary communities. Drawing on archaeological survey data, I also discuss water and pasture infrastructure of the last 500 years in southeastern Turkey and the changing political environment in which this infrastructure was used by mobile pastoralists to live in a “marginal” area under the Ottoman and modern Turkish states.

Hammerstedt, Scott (University of Oklahoma), Amanda Regnier (University of Oklahoma) and Marc Levine (University of Oklahoma)

The Discovery of a New Buried Building on Monte Albán’s Main Plaza

Large-scale geophysical survey was conducted at Monte Albán’s Main Plaza during the summer of 2017. The results suggest the presence of a substantial, but previously unknown, building with associated features located in the west-central portion of the plaza near Building H. In this paper, we describe our findings and present our preliminary interpretation of the geophysical data.

Hammerstedt, Scott [119] see Savage, Sheila

Hampton, Ashley (University of Montana)

A Stone Throw(n) Away: Examining the Interconnection between Identity and Division of Labor through an Evolutionary Analysis of Household Spatial Organization

This study examines issues of cultural change/continuity as embodied within a singular multi-generational housepit (Housepit 54) located within the Bridge River site in the Mid-Fraser Canyon, British Columbia, Canada. Previous research has focused on understanding the changing social dynamics at both a village and household-level, examining shifts from a more collaborative to competitive framework in response to external environmental pressures. As interpersonal dynamics within Housepit 54 were renegotiated within a context of increased competition, this study will address how—if at all—such changes beget corresponding shifts in identity-defining tasks in order to better understand the recursive relationship between culture, environment, and individual agency. If hunter-gatherer identities were tied to resource-extraction activities (i.e. individuals who hunted had identities based around such hunting practices) then changes in resource access may have caused subsequent, measurable shifts in identity. This study uses ArcGIS in order to examine the fine-grained detailed evolution of spatially-defined activity within HP54 in order to illuminate the interplay between personal identity, cultural transmission, and emergence of inequality.

Hampton, Ashley [239] see Bobolinski, Kathryn

Haney, Emily (BLOOMSBURG UNIVERSITY OF PENNSYLVANIA)

Mortuary Vessels at the Maya City of El Peru-Waka'

Residential burials are useful tools that help archaeologists better understand domestic ritual practices at the household level. With the household acting as a unit of social identity, funerary practices help archaeologists relate said practices to prominent trends of the time. These include, but are not limited to social and religious structures, identity, power, and social reproduction. One of the many types of artifacts that often appear in Classic Maya burials that are significant to burial practices are ceramic vessels. Through the utilization of several whole ceramic vessels uncovered during the 2017 field season at the Maya city of El Peru Waka’, this poster will attempt to explore the use of ceramics in funerary contexts at the site. In looking at mortuary vessels recently excavated in El Peru’s Chok Group, funerary contexts can help to reveal domestic ritual trends and purposes. After recovery of the vessels in the 2017 field season, they were brought to the lab where they were cleaned and analyzed. By using the type variety method, examining the vessels for presence of use ware, and original funerary context (through drawings and photographs) a better narrative of ceramic use in domestic funerary contexts is revealed.

Haney, Jennifer [135] see Walker, Karen
Hanks, Bryan (University of Pittsburgh, Department of Anthropology) and Miroslav Kocic (University of Pittsburgh)

We have two different types of clay to research. The first clay is yellow clay CH4444. The second clay is iron-rich, red clay CH2222. Our first task was to visually analyze the artifacts from the two different lots. CH4444 was associated with archea tools. CH2222 was associated with Preclassic pottery. We designed four different techniques to prepare the clays for our study. Our first group of CH2222 was aged directly in water and hand sieved. Both clays were moist from retrieval. This became problematic for the iron-rich clays. The clays were extremely difficult to break down. We dried them in open baskets. The remaining CH2222 and CH4444 were prepared by hand. Due to the weather and the iron bearing clays these processes took several days to accomplish.

Hankins, Sharon and Megan Skillern (University of Texas at Austin)

Experimental Ceramic Technology: Colha, Belize

We have been very fortunate this year to have Dr. Fred Valdez, Luisa Aebersold and their team graciously contribute to our research program in ceramic technology. They took time during their extremely busy field season to bring clay for our team to prepare and attempt to build pottery at Programme for Belize Archaeological Field School.

Hanschu, Jakob

Reassessing Neolithic Settlement Patterning in Central Serbia through Geophysical and Geochemical Survey

This paper details the results of recent large scale pedestrian, geophysical and geochemical surveys on Late Neolithic Vinca culture sites in Central Serbia. New data relating to settlement patterning, household organization, and diachronic developments will be discussed through combining surface survey and analysis and remote sensing. Results from these studies are adding a new perspective to conventional models for the Neolithic transition and the emergence of early village societies in southeastern Europe.

Hanschu, Jakob

Obsidian Procurement Patterns in the Strawberry Mountain Wilderness

Cultural resources in wilderness areas can be difficult to manage due to a lack of dedicated funding and few undertakings which trigger survey through the National Historic Preservation Act. After a series of extensive wildfires in the 1990s the Malheur National Forest surveyed much of the Strawberry Mountain Wilderness Area using volunteers from the Forest Service’s Passport In Time program. Crews documented several extensive obsidian dominated lithic scatter sites. The debitage and other artifacts recovered illustrated the full range of lithic reduction stages suggesting a nearby source of natural obsidian. Additional survey failed to locate any usable obsidian sources within the wilderness. X-Ray Fluorescence (XRF) characterization identified the two primary obsidian sources from these sites several miles, and approximately 2000 feet below, the sites in the wilderness. Likely travel routes between the obsidian sources and lithic reduction sites in the wilderness can be inferred from the XRF data.

Hanna, Jonathan

A Biological Profile of an Individual from Xultún Using Bioarchaeological, Starch, and Isotopic Analyses

Micro and macroscopic bioarchaeological analyses enable archaeologists to generate biological profiles of past individuals, including characteristics such as diet, sex, age, occupational stress, pathologies, and social status, among others. In this paper, we discuss the significance of a Maya individual by constructing a biological profile from both macro and microscopic analyses. The individual of interest was excavated during the 2012 field season at Xultún, Guatemala in a patio situated in the southeast portion of the site. The burial contained the remains of two additional individuals and was located just outside the Grupo Taaj structure, a small mural room dating to the Late Classic period. Through the use of microscopic analyses, such as starch and isotopes, and multiple macroscopic analyses, we provide a thorough investigation of this individual’s life, as preserved in the archaeological record, in order to provide insight into the importance of the burial and the role of both women and book makers in Maya society. Furthermore, this study expands on the role of an individual in Maya society and how that is reflected in a mortuary context, more specifically in the Classic period site of Xultún.

Hanselka, J. Kevin

Discussant

Hanselka, J. Kevin

Chair

Hannigan, Elizabeth (Boston University), Shintaro Suzuki (Universidad del Valle de Guatemala), Felipe Trabanino (Universidad Nacional Autónoma de México) and Boris Beltran (Proyecto Arqueológico Regional San Bartolo- Xultún)

A Biological Profile of an Individual from Xultún Using Bioarchaeological, Starch, and Isotopic Analyses

Scattered through parts of northeastern and north-central Kansas are prehistoric burial sites in the form of low rock and earthen mounds located atop bluffs overlooking stream valleys. In Kansas, the Unmarked Burial Sites Preservation Act exists to protect these sites, but this law is only effective if the location of these features is known. Most prehistoric mounds in this region are subtle in appearance, making them difficult to recognize. If sites are not recorded and protected, they may be unintentionally or intentionally destroyed. Using Geographic Information Systems (GIS) software and the Kanas State Historical Society Archaeological Site Inventory, a map was created pinpointing the locations of recorded burial mounds in Clay, Geary, Pottawatomie, Riley, and Wabaunsee counties. Geographic associations of known mounds relative to topographic and hydrologic features were highlighted in order to recognize spatial patterns and simple statistical procedures were used to predict areas with high potential for past use as prehistoric burial sites. Samples of these areas were targeted for pedestrian survey to identify and record additional burial mound features with the overall goal of helping protect prehistoric burial sites in northeastern Kansas. Four burial mound sites were recorded because of these surveys.

Hanselka, J. Kevin

Obsidian Procurement Patterns in the Strawberry Mountain Wilderness

Cultural resources in wilderness areas can be difficult to manage due to a lack of dedicated funding and few undertakings which trigger survey through the National Historic Preservation Act. After a series of extensive wildfires in the 1990s the Malheur National Forest surveyed much of the Strawberry Mountain Wilderness Area using volunteers from the Forest Service’s Passport In Time program. Crews documented several extensive obsidian dominated lithic scatter sites. The debitage and other artifacts recovered illustrated the full range of lithic reduction stages suggesting a nearby source of natural obsidian. Additional survey failed to locate any usable obsidian sources within the wilderness. X-Ray Fluorescence (XRF) characterization identified the two primary obsidian sources from these sites several miles, and approximately 2000 feet below, the sites in the wilderness. Likely travel routes between the obsidian sources and lithic reduction sites in the wilderness can be inferred from the XRF data.

Hanna, Jonathan

Chair
INDIVIDUAL ABSTRACTS OF THE SAA 83RD ANNUAL MEETING

Hansell, Patricia (Temple University)
[112] Discussant

Hansen, Daniel (University of Michigan)
[25] Death and Identity at Monte Albán
Archaeologists have long striven to interpret mortuary rituals as qualitative signs of a living people—indices of sex, gender, age, status, wealth, and craft. Though the doctrine “as in life, so in death” can have some merit for archaeological inquiry, viewing mortuary ritual in this manner ignores the social act itself, which is one of the most intimate, personal, and weightied actions humans produce, serving, among other roles, to return the society to homeostasis in the wake of the loss of a member. In interpreting mortuary ritual as a means to resolve a social death within a group, close ties emerge with ethnic and group identity. Rather than a passive reflection of a culture in life, mortuary ritual is an act constitutive of ethnicity. This paper examines mortuary practices at Monte Albán in the Oaxaca Valley from ca. 500 BCE until Spanish conquest, traditionally periodized as Monte Albán I-V. Drawing on primary data from past excavations, including those of Alfonso Caso in the early 20th century, it is an attempt to synthesize an identity-driven interpretation of mortuary ritual in Monte Albán, an urban center whose ethnic history is a source of ambiguity.

Hansen, David (Nazabaryev University) and Elissa Bullion (Washington University in St. Louis)
[185] Cranial Modification in Medieval Central Asia
This study examines the practice of cranial modification at the 12th-13th century site of Kalmikkilgan in modern day Uzbekistan. According to historical sources, the medieval period in Central Asia was a time of reshaping ethnic, religious, and political identities: Islam spread widely across the region, waves of Turkic peoples migrated into the region, and a series of large territorial states rose to power. This period has been understudied from an archaeological perspective, leaving gaps in our understanding of how groups and individuals expressed identity in these shifting social landscapes. One practice that bioarchaeologists have focused on in the examination of identity is cranial modification, due to its highly visible nature. Cranial modification has been identified in several individuals from the Kalmikkilgan site in the Khoresm region. To document the types and degrees of modification present, we digitized three-dimensional cranial landmark data and analyzed shape difference between individuals using finite element scaling analysis. Our results indicate that at least two types of cranial modification are present, with one individual lacking evidence of modification. This range may be indicative of a desire to visibly express identity in a period during which social changes were occurring rapidly across many spheres of life.

Hansen, John (American Museum of Natural History)
[138] When Is “Near” Close Enough? Old Data, New Interfaces and an Imperfect Present
The Division of Anthropology at the American Museum of Natural History launched its first online database in 1995. The image-oriented interface proved attractive to an audience with a moderate level anthropological background. Later, in response to numerous requests, unimaged archaeological collections with more technical data were offered through a password protected interface. As of September 2017, 250,000+ files with images were publicly available, the combined online database representing 450,000+ records. There are continuing issues with the source material, legacy data and user experience. Many database projects were underfunded and resulted in data inaccuracy. Inadequate context discourages novice users. Most frustrating is the lack of definition in object name and provenience. Although the inclusion of scans of original documentation mitigates some user dissatisfaction, the situation limits the use of existing web services. Even with these problems, the database has proved popular and useful. The web-based interface has permitted an agile, flexible and relatively easily modified presentation of data while maintaining integrity with the original catalogue. The resulting tool is not only the primary means of external access to our collections for students, educators, researchers and casual visitors but has become a valuable resource for divisional staff as well.

Hansen, Richard, Edgar Suyuc-Ley (Mirador Basin Project), Carlos Morales (FARES Foundation; Universite la Sorbonne, Paris), Beatriz Balcarcel (FARES Foundation; UNAM, Mexico) and Stanley Guenter (FARES Foundation; Mirador Basin Project)
[252] The Monumentality of the Preclassic Maya of the Mirador Basin, Guatemala
Archaeological investigations in 51 ancient sites within the geographical confines of the Mirador Basin of northern Guatemala have identified an extraordinary emphasis on monumentality in art and architecture dating well into the Middle and Late Preclassic periods of Maya occupation. The structure and format of this phenomenon is replicated in early complex societies in other parts of the world, and suggests a consistent human behavior of predictable characteristics. The analyses and forms of the varied demonstrations of monumentality provide an insight into economic, political, and social structure among the Preclassic Maya and, in particular, the unusual and precocious cultural development in the Mirador Basin.

Hansen, Richard [18] see Paine, Richard

Hanson, Kelsey (University of Arizona)
[136] On the Persistence of Tradition: Caves, Ritual Performance, and Secrecy among Multi-ethnic Communities in the U.S. Southwest
Discussions of ritual performance in the U.S. Southwest are often restricted to the analysis of architecture in residential settings, leaving the potential role of caves largely absent from regional discourse. As settings that are less accessible to the entire community, caves likely represent important venues for ritual performance whose participation is intended only for a select audience. The aims of this paper are twofold. First, through the reevaluation of select wooden ritual assemblages from caves in the U.S. Southwest, this paper addresses the distinctive role of these items in ritual performance—from production, use, and appropriate storage in caves. Second, using a case study based on a reevaluation of the ceramic and wooden ritual assemblages from the Point of Pines caves in east-central Arizona, this paper considers the persistence of ritual performance among multi-ethnic communities, asking to what extent the use of these caves represents incompatible imported traditions practiced in secret. By facilitating secrecy, I argue that caves serve as especially important settings for maintaining diverse religious traditions in multi-ethnic communities, allowing for the persistence of otherwise incompatible practices.

[136] Chair
Hanson, Kelsey [136] see Moyes, Holley

Hanten, Nicholas [225] see Hale, Micah

Hard, Robert (Univ of Texas at San Antonio), Jacob Freeman (Utah State University), Robert Gardner (University of Texas at San Antonio), Gabriella Zaragosa and Raymond Mauldin (University of Texas at San Antonio)
[105] Modeling Hunter-Gatherer Population Dynamics on the Texas Coastal Plain during the Holocene
A radiocarbon database is used to model prehistoric population dynamics on the Texas Coastal Plain in the context of Holocene climate change. Hunters and gatherers participated in a multifaceted social and ecological system that appears to have been highly resilient to climatic impacts by...
INDIVIDUAL ABSTRACTS OF THE SAA 83RD ANNUAL MEETING

utilizing multiple ecological zones and participating in wide-ranging social networks for over 6000 years. Climatic fluctuations include a dry middle Holocene and fluctuating but wetter late Holocene. During the early and middle Holocene the region experienced rising sea-levels followed by stabilization. Expectations from archaeological data indicate populations experienced a number of substantial population fluctuations, peaking during the Late Archaic period (4000–800 BP) and sharply declining during the Late Prehistoric period (800–350 BP). We will compare the patterns in the radiocarbon database to these expectations and Holocene climatic reconstructions.

Hard, Robert [91] see Gardner, Robert

Hardy, Thomas (University of Pennsylvania) [295]
Assembling Empire: Continuity and Change in the Long-Term Development of the Inca Empire
This paper explores the use of assemblage theory, derived from the work of theorists such as Deleuze, Guattari, and DeLanda, as a way of overcoming inherent problems in earlier attempts at understanding sociopolitical change. Exploring the implications of this historical materialist approach involves linking processes operating at different scales of time, and tracing historical genealogies of practice and the ways they were assembled to produce political sovereignty. I argue that not only are the conditions for sovereignty necessarily in place long before the emergence of particular regimes, but that the production and maintenance of these kinds of social relations are rooted in material culture over the longue durée. Research conducted at Minasapta, a multicomponent site located in the Lucre Basin, Cuzco, Peru, in the heartland of the Inca state, suggests that the emergence of Inca imperialism in the 14th-15th century CE was the result of a complex set of social relations, materialities, cultural practices, and ontologies that were "assembled" over the previous several centuries. These assemblages were produced through the interactions between humans and the broader material world and were transformed as they were drawn together, with distinctive historical genealogies that flowed at different temporalities.

[295] Chair

Hardy, Thomas [295] see Berquist, Stephen

Hare, Timothy (Morehead State University) [80]
Walking through Mayapán
I present a preliminary analysis of movement through the Postclassic political capital of Mayapán. The architectural features at Mayapán are some of the most densely concentrated of sites in ancient Mesoamerica, but its organizational principles defy explanation. Almost two decades of fieldwork, including using electronic total stations, RTK survey-grade GNSS, UAV-based aerial photography, and an aircraft-borne LiDAR survey of a 40 sq km area centered on Mayapán's defensive wall, allows mapping of much of the distribution of public architecture, dwellings, platforms, property walls, pathways, and non-residential features across the city and the region. This database is the basis for revealing the forces that drove the development of Mayapán’s urban form. I focus on the role of walled pathways in relation to the locations and forms of key architectural features, walled house lots, cenotes, the defensive wall, and major gateways.

[320] Discussant

Hare, Timothy [190] see Jones, Garrett

Hargrave, Eve and Kristin M. Hedman (Illinois State Archaeological Survey) [306]
Hoxie Farm: Bioarchaeology of a Late Prehistoric Community in Northeastern Illinois
The Upper Mississippian (A.D. 1400–1500) Hoxie Farm site is one of the best documented late prehistoric sites in Cook County, Illinois. In 1953, Elaine Blüm and David Wenner from the Field Museum of Natural History organized a volunteer crew of professional and avocational archaeologists to salvage portions of the site in advance of construction of the first interstate highway (I-80) in Illinois. In 2000–2003, the Illinois State Archaeological Survey (ISAS) conducted additional excavations at this site in response to planned construction activities on I-80. In total, these investigations documented thousands of habitation features, several longhouse structures, and nearly 70 burials. In this poster we highlight the bioarchaeology of the Hoxie Farm site. Mortuary patterns at the site hint at cultural connections with both Fisher and Oneota traditions in central and northern Illinois. Skeletal evidence for violent death and postmortem modification of isolated human elements (burning, cut marks, incised designs) reflect the dynamic cultural environment of Hoxie Farm, one that included conflict. A diet comparatively low in maize, high rates of nutritional stress and infectious disease observed within this population may reflect these challenging environmental and cultural conditions.

Hargrave, Michael, R. Berle Clay (Cultural Resource Analysts Inc.), Diana Greenlee (University of Louisiana Monroe, Poverty Point Site) and Rinita Dalan (Minnesota State University Moorhead) [156]
New Evidence for Poverty Point's Complex Developmental History
Magnetic survey at Poverty Point reveals new information about ritual facilities, ridge construction and use, and a complex developmental history that included both planned and organic growth. Thirty-eight circles (diameters range from 8 to 66 m with a mean of 35 m) in the plaza are interpreted as ritual facilities. Targeted excavation in four circles encountered large postholes in three but the fourth consists of pits. Magnetic images suggest closely spaced postholes in many circles, possibly indicating rebuilding by inserting new posts between older removed posts. Some circles overlap with and—assuming ridge slopes were steep—may predate the inner ridges. The concentric ridges are distinguished by negative magnetic “perimeter” anomalies and habitation materials. Innermost Ridges 1 and 2 have multiple perimeter anomalies suggesting extensive rebuilding. Ridges 3–5 lack that evidence of reconstruction and presumably date later. Planning is evident at Poverty Point, but several stages of ridge construction, extensive rebuilding of some ridges and circles, and overlapping ritual circles and domestic ridges suggesting shifts in activity patterning are inconsistent with interpretations that imply nearly synchronous construction and rigid adherence to a detailed masterplan.

Hargrave, Michael [238] see Baxter, Carey

Harke, Ryan [266]
The State of the (Conch) Republic: Renewed Archaeology in the Imperiled Florida Keys
Although the Florida Keys’ archaeological record famously made possible the seriation of south Florida pre-Columbian ceramic styles in 1949, this 356 km² archipelago has been largely ignored by academic archaeologists ever since. Today, Keys archaeological sites and historical properties are plagued by tourism-related development, a multi-faceted issue that is exacerbated by the compounding effects of weekly tidal erosion and seasonal tropical storms. Consequently, an untold number of sites have already been destroyed, and extant sites are at high risk of permanent inundation and/or demolition. Existing collections are therefore a crucial and fruitful resource in an area of such unfortunate circumstance. To be sure, they offer the best—and often the only—opportunity to study the diverse cultures that occupied this region in pre- and proto-historic times. With this poster, I highlight the history of terrestrial archaeological investigation in the Florida Keys; present a summary of ongoing collections-based geochemical research; and...
most importantly, demonstrate how and why these small islands played a significant role in pan-regional maritime networks that extend from the 14th century into contemporary times.

Harkins, Kelly [337b] see Schaffer, William

Harkleroad, Eric [29] New Perspectives on Warfare in the Iron Age of Wessex

Wessex, a region of southern England, has been the subject of more study than almost any other region of the UK. While much excavation has focused on the Iron Age little work has focused on the role of warfare at that time. Discussions of warfare have led to antithetical conclusions by researchers utilizing the same material with much of the disagreement stemming from fundamentally different interpretations of equivocal evidence and assumptions about life in the period. Some of these conclusions are ultimately founded on untested models and questionable historic accounts. I propose a new method of approaching warfare utilizing what I am calling bellicose references as a way of cutting through and resolving many of the issues that have complicated the study of warfare. Based in Practice Theory, specifically the idea of habitus, bellicose references are a conceptual tool that shifts focus away from the presence or absence of warfare and instead puts the focus on how these materials manifest socially, putting the focus on human action and practice. I demonstrate the usefulness of this approach utilizing data from Wessex and show how this, in conjunction with other information from the region, gives a more holistic understanding of violence and conflict.

Harmand, Sonia [329] see Duke, Hilary

Harmsen, Hans (Nunatta Katersugaasivia Allagaaatqarfalui/Greenland National Museum & Archives), Jørgen Hollesen (National Museum of Denmark), Henning Matthiesen (National Museum of Denmark), Bo Eberling (CENPERM, University of Copenhagen) and Christian K. Madsen (Greenland National Museum and Archives)

[135] Climate Change and the Rapid Loss of Organic Deposits in West Greenland

The REMAINS (REsearch and Management of Archaeological sites IN a changing environment and Society) of Greenland project has explored a number of factors that currently threaten Greenland’s archaeological landscape in the coming decades. This paper reviews recent work as well as the problems and threats to coastal and inland middens along the country’s West coast and adjacent inner fjord systems. Information gathered in recent years provides a baseline for “ground-truthing” predictive models of preservation and deterioration of material such as bone, antler, baleen, wood, leather and feathers frequently observed in relative states of decay in the middens. Loss of organic integrity in West Greenland is variable but overall the preliminary data suggests that regardless of age and geographical location, archaeological deposits within the study area are vulnerable. Discussion of these data is situated in the context of the next ten, twenty and fifty years intervals from a heritage management perspective and the possible scenarios we can expect as climate uncertainties continue to erode Greenland’s once outstanding archaeological legacy. The underlying theme is that there is a crucial need for greater international attention around the rapid loss of archaeological sites, features and deposits in the circumpolar North.

Harrelson, David [331] see Edwards, Briece

Harrington, Lucy (Mercyhurst University) [22] Measuring Mobility by Proxy: Use and Maintenance of Lithic Tools in Pennsylvania from Paleoindian to Middle Archaic Times

Archaic peoples in Pennsylvania were less mobile than their Paleoindian predecessors. One form of evidence supporting this argument is the increased use of local lithic raw materials in the Early and Middle Archaic. The utilization and retouch of unifaces and bifaces is a second form of evidence of mobility. The production of tools designed for long-term use and maintenance is associated with highly mobile groups where maximizing tool use-life reduces transport cost and reduces risk when moving into areas with little or only poor quality lithic raw material. This study reports on the examination of changes in biface and uniface resharpens using Andrefsky’s Hafted Biface Retouch Index (2006), Kuhn’s geometric index for the reduction of unifaces (1990) and a new index for the utilization of unretouched flakes in an effort to examine the relationship between changing levels of use and mobility over time. The materials included in analysis are from 11 lithic assemblages previously excavated from well stratified sites in Pennsylvania dating from the Paleoindian to Middle Archaic periods.

Harrington, Sue [40] see Buchanan, Brian

Harris, Alison (Stockholm University; University of York), Deirdre Elliott (Memorial University of Newfoundland), Tatiana Feuerborn (Stockholm University; University of Copenhagen), Gunilla Eriksson (Stockholm University) and Vaughan Grimes (Memorial University of Newfoundland)

[16] Inuit Sled Dogs in the Contact Landscape: An Isotopic Investigation of Dog Provisioning in 16th–19th Century Labrador, Canada

The 16th through 19th centuries witnessed increasing cross-cultural interactions between the Inuit of the Labrador coast and European explorers, traders, and missionaries. The effects of colonialism in this period have been studied with respect to Inuit identity, material culture, gender, and social organization, but the nature of Inuit-animal relationships has received comparatively less attention. In addition to occupying a prominent social role, the sled dog facilitated Inuit mobility and hunting practices, but required considerable care and provisioning. In this paper, we employ carbon and nitrogen isotope analysis of bulk bone collagen and amino acids to examine sled dog feeding practices between the 16th and 19th centuries. We analyze the remains of 60 archaeological dogs from six Inuit winter house sites from Labrador’s north and central coasts. While all of the dogs included in this study consumed predominantly marine-based protein, we note a degree of inter- and intrasite variation in both the carbon and nitrogen isotope values of the dogs. This variation is further explored with reference to the settlement history of Labrador, and to other stable isotope datasets from the Eastern Arctic to better understand the changing role of the dog in Inuit society.

Harris, Ashley (University of Wyoming), Jason Tooley (University of Wyoming) and Kirk Scheffler (University of Wyoming)

[240] GIS Applications in the Analysis of Prehispanic Settlement in Cajamarca, Peru

The Cajamarca Valley of northern Peru has seen changing settlement patterns throughout its nearly 12,000 year human occupation. Although several archaeological surveys have taken place in and around the basin over the past 70 years, this is the first project to apply the tools of Geographic Information Systems to this existing settlement data. This region-scale analysis is a significant addition to the traditional archaeological research in Cajamarca which has focused largely on the excavation of particular sites. The employment of nearest neighbor, central feature, view shed, and least costs analyses is revealing significant demographic change from the Formative Period through the Late Horizon. Analyses point to significant clustering of sites during the Formative Period with populations focused on large ceremonial mound sites in the basin. During subsequent periods, settlement oscillates between higher and lower elevation zones implying both economic and defensive pressures on settlement. The novel application of GIS tools
to existing settlement data is allowing us to speak to issues of population movement in the region with greater confidence than has been the case in the past.

Harris, Edwin (Colorado State University) and Christopher T. Fisher (Colorado State University)

GIS Analysis of the Road Network at the Postclassic Purépecha Site of Angamuco, Mexico

The growing adoption of LiDAR for archaeological analysis makes determining how ancient peoples modified, interacted and moved through the landscape more practical. Initial analysis of the LiDAR produced imagery covering the Postclassic (1000–1520 CE) Purépecha site of Angamuco, located in the Lake Pátzcuaro Basin of Michoacán, Mexico showed a highly urbanized multi-nucleated settlement sprawled across 26km2 of an ancient lava flow, with a complex urban structure. Here I discuss the results from a project to identify and extract road networks from the city. The Purépecha relied upon two primary types of roadways, typical ground level paths and elevated "highways" known as huatiztli. By using the GIS software ArcMap, the possible roadways were identified visually by a combination of multiple data visualizations including Hillshade, Sky View Factor, and Openness Factor. A Least Cost Path analysis (LCP) was also applied to the entirety of the site to locate the most economical routes for comparison. The combination of the visually identified road network and the LCP provides a means to determine the pre-planning and organizational decisions involved in control of movement through the city.

Harris, Jacob (Arizona State University), Curtis Marean (Institute of Human Origins, School of Human Evolution), Kiona Ogle (Applied Research and Development, Northern Arizona) and Jessica Thompson (Department of Anthropology, Emory University)

Employing Bayesian Probability Theory to Diverse Applications Relevant to Archaeology

The principle of equifinality describes a system where an end state may be reached from a variety of conditions and in a variety of ways and has proved to be a confounding element in several areas in archaeology. Archaeological data commonly occur in both qualitative and quantitative form and Bayesian modeling, coupled with modern computational routines, permits multiple data types to be incorporated into a single synthetic probability model. The Bayesian approach makes probability statements given observed data, constructing posterior probability statements about unknown model parameters including unknown (unobserved) data.

Here we describe how Bayesian inference offers a solution to several areas relevant to archaeology. We use a Bayesian algorithm to make categorical assignments for unknown archaeological samples in three analytically similar contexts: identifying bone surface modifications, distinguishing between heated and untreated silcrete, and distinguishing signatures from discrete volcanic eruptions. In each example, we use large samples of observed reference data to train the respective models. Out-of-sample cross validation is then used to assess model performance and predictive ability before analyzing archaeological samples. Monitoring posterior distributions of unobserved data result an assignment of probability associated with individual unknown (archaeological) samples, thereby formally addressing the issue of equifinality.

Harris, Jacob [89] see Murray, John

Harris, Kathryn (Washington State University)

Lithics and the Late Prehistoric: Networks and Interaction on the Southeastern Columbia Plateau

The people of the Columbia Plateau have been frequently characterized as a homogenous culture despite a 3,000-year depth of history and large spatial extent. Moreover, differences in artifact form, assemblage composition, and household features belie this characterization. The changing natural and social environment can be detected in modifications in cultural technology, and relationships among distinct groups can be inferred. The research presented here tracks these changes. By using concepts from evolutionary and social network theories, this study employs obsidian provenance sourcing and the morphometric analysis of projectile points to trace the ways people dealt with these environmental and social pressures through shifting adaptive strategies and increased intergroup interaction. Ultimately I ask can the cultural learning and adaptive strategies of late prehistoric cultural groups be identified in the variability of southeastern Columbia Plateau projectile points? And, how does obsidian procurement reflect changing cultural interactions and exchange networks in the southeastern Columbia Plateau over the past 3,000 years?

[151] Moderator

Harris, Matthew (AECOM Technologies)

A Site Is Not a Centroid: Modeling Archaeological Landforms and Uncertainty with Bayesian Distribution Regression

A Bayesian Distribution Regression using a Mean Embedding Ridge Regression (MERR) algorithm is developed to address two primary shortcomings of current Archaeological Predictive Modeling (APM) practice: 1) neglecting the richness of archaeological landforms by collapsing a site to a single point or observation; and 2) disregarding the implicit and explicit uncertainty of archaeological data, predictions, and model parameters. This research addresses the first hurdle by developing a Logistic MERR approach to Distribution Regression. This method first samples a distribution of variable measurements from the spatial area of each site, then uses a kernel to project the distributions into a non-geographical feature space to calculate mean embeddings, finally Kernel Ridge Regression estimates similarity coefficients for inference and prediction. The primary benefits of the MERR approach to APM are the consideration of archaeological landform richness and variation, explicitly modeling similarity between sites and the environment, and allowing for similarity metrics specific to archaeological research questions. The second hurdle is addressed by applying the MERR method within a Bayesian framework for probabilistic modeling. As such, the uncertainty of data and parameters can be explicitly modeled with priors resulting in a posterior predictive distribution useful for quantifying and visualizing risk.

Harris, Sarah (Connecticut College), Moriah McKenna (Connecticut College) and Anthony Graesch (Connecticut College)

(Im)movable Stone: a Comparative Analysis of Fieldstone Concentrations in Southern New England

Fieldstone concentrations are rarely accorded much significance in historical and archaeological studies of eighteenth and nineteenth century farmsteads in southern New England. This poster highlights research addressing the surface piles of stone remaining in and beyond the abandoned fields of colonial and early American farms. Whereas many have assumed that fieldstone was eventually or momentarily incorporated into the thousands of miles of stone walls that crisscross New England’s contemporary landscape, our research suggests that farmers may have allocated stone-clearing labor to a variety of purposes. We present the results of fieldwork aimed at systematically recording and mapping formal variability in fieldstone concentrations in relation to other field attributes—wall height, field size, proximity to barways—at/on three farmsteads. These data are then used to (1) explore how we might discern Indigenous from European stone features and, in cases of the latter, to (2) recognize different forms of labor associated to field maintenance. In particular, we distinguish between the products of labor allocated to (a) permanent storage of fieldstone outside of stone walls, (b) temporary staging of fieldstone for later removal, (c) creation and management of water supplies for animal herds, and (d) disposal.

Harrison, Ainslie (Virginia Museum of Fine Arts), Harriet “Rae” Beaubien (Museum Conservation Institute), Kimberly Cullen Cobb (KCC Conservation LLC), Emily Kaplan (National Museum of the American Indian) and Jennifer Giaccai (Freer and Sackler Galleries)

Re-contextualizing Pre-Columbian Gold and Resin Artifacts from Panama in the National Museum of the American Indian

Until recent years the study of Pre-Columbian gold and resin objects from Panama was slow to progress due to the relative scarcity of archaeological projects excavating these materials. While the original contexts of many museum objects have been lost, the collection of Panamanian gold and resin in the National Museum of the American Indian was re-evaluated for its potential to answer key questions about the ancient craftspeople of this region.
To ensure accurate provenience information was associated with each artifact, research was undertaken in the archives of the NMAI. The resulting letters and field notebooks provided insight into the fascinating history of these objects. Scientific analysis further contextualized these objects in terms of the materials and fabrication techniques. Compositional analysis of 231 gold objects using XRF revealed significant patterns related to the source of the raw materials and the technological choices that went into making them. Three resin objects also underwent FTIR and GC-MS analysis to identify the plant source of the resin. This project has produced valuable technical data on this region that has been relatively understudied archaeologically and additional detailed information has been added to the museum records for each of the objects in this study.

Harrison, Laura (University of South Florida)

[130] Digital Heritage in Archaeology in the 21st Century

The recent ‘digital turn’ in archaeology has spurred methodological advances and new research directions, with wide ranging impacts at multiple scales. The proliferation of imaging, remote sensing, laser scanning and photogrammetry applications has, at times, outpaced considerations about data archiving, digital epistemologies, and accessibility. This can lead to circumstances in which the creation of digital datasets is privileged over public dissemination or scholarly output—a situation that ultimately undermines the democratization of science. The future of digital heritage in archaeology thus lies in the integration of methodological approaches to digitization with explicit project outcomes targeted at various communities and stakeholders—an approach that might be thought of as “applied digital heritage.” To illustrate this concept in practice, I offer a case study from the UNESCO World Heritage site of Villa Romana del Casale in Sicily, which was recently digitized with terrestrial laser scanning. These 3D data were incorporated into a research agenda and public outreach activities that bring issues of heritage accessibility, assessment, and digital knowledge production to the foreground.

[130] Chair

Harrison, Laura [265] see Donner, Kristin

Harrison, Ramona (University of Bergen, Norway)

[135] Saving Siglunes from the Sea

Siglunes is one of a series of endangered sites in N Iceland where we investigate: the emergence and long-term development of Icelandic fisheries and marine mammal hunting, the changing connections between Eyjafjörður and the larger North Atlantic trade and exchange during the Viking Age and medieval times, processes of marine erosion and its effect on archaeological sites for heritage management efforts in Iceland and the wider region. The site’s archaeological and environmental samples can provide us with information on Viking Age fishing strategies in the North of Iceland, and serve as a case study on the origins and subsequent development from artisanal to larger-scale commercial fishing enterprise in the 13th and 14th c. Thus fueling a growing industry that transformed Atlantic economies in the 17th-18th c. and underwrote emergence of the early modern world system. However this site is in immediate danger from ongoing coastal erosion and some of the structures observed in 2008 on the fishing site have since been truncated by the sea. This paper presents new results from ongoing analysis and contributes to the discussion on addressing ongoing cultural heritage as well as scientific data loss due to erosion forces magnified by global climate change effects.

Harrison-Buck, Eleanor [7] see Phillips, Lori

Harrower, Michael (Johns Hopkins University)

[210] Discussant

Harrower, Michael [177] see Dumitru, Ioana

Harry, Karen (University of Nevada-Las Vegas)

[218] Shrines, Dedication Practices, and Closure Activities at Lava Ridge Ruin

Lava Ridge Ruin, located on the Shivwits Plateau near the northern rim of the Grand Canyon, is a late Pueblo II period site associated with the Virgin Branch Puebloan culture. Excavations at the sixteen-room pueblo suggest that its inhabitants used natural and cultural objects to maintain historical connections with their ancestors and with previously occupied settlements, as well as to signify their connection to important places on the landscape. These connections are reflected in the very location of the pueblo, which encircles a shrine (or ritual cache) created more than a hundred years before the settlement was established. The connections are further reflected by dedicatory materials, often associated with the Grand Canyon, placed in the building’s architecture during construction; as well as by specific closing rituals that marked the pueblo’s abandonment. The implications of these behaviors for understanding the worldview of the people who lived on the Shivwits Plateau is discussed.

[218] Chair

Harry, Karen [164] see Perez, Daniel

Hart, Thomas [37] see Trein, Debora

Hartford, Alexis [293] see Fash, William

Hartley, Ralph [239] see Renner, Amanda

Hartman, Gideon [177] see Brittingham, Alexander

Harvey, Amanda (University of Nevada, Reno), Julie Hoggarth (Baylor University) and Jaime Awe (Northern Arizona University)

[14] Maya Diet during the Postclassic to Colonial Transition: Tipu and Baking Pot Oral “Health” and Isotopic Signatures

The Colonial site of Tipu and pre-contact site of Baking Pot offer a unique perspective of the transition of Maya life in western Belize after Spanish contact. Tipu is a borderland town largely occupied from AD 1541–1704. Baking Pot was a regional civic-ceremonial center continuously occupied from the Late Preclassic (~400 cal BC) to the Terminal Classic periods (cal AD 800–900), and later reoccupied during the Late Postclassic (cal AD 1280–1420).

Oral “health” and carbon and nitrogen isotopic values were assessed from skeletal samples. Baking Pot bone collagen isotopes are lighter than Tipu (-1.1 (+1.0) and -9.8 (+1.4), respectively), suggesting slightly more consumption of C3 foods. Apatite supports a greater consumption of C3 foods at Baking Pot -6.6 (+0.6) compared to Tipu -5.3 (+1.4). Nitrogen values are the same, Tipu +9.2 (+0.8) and Baking Pot +9.2 (+1.3). Isotopic values are
Harvey, Virginia (The University of Manchester), Linas Daugnora (Klaipeda University) and Michael Buckley (The University of Manchester) 
Collagen Fingerprinting on Neolithic Fish from Lithuania
Archaeological fish remains are more taphonomically sensitive than those of other vertebrates as they are typically smaller and less biomineralised. Therefore, it is essential to retrieve as much information as possible from assemblages that favour their preservation. One of the most time- and cost-efficient methods of objectively achieving faunal identity in ancient bone is collagen fingerprinting technique ‘ZooMS’ (Zooarchaeology by Mass Spectrometry). ZooMS harnesses the potential of preserved collagen, the most dominant and time-stable protein in bone, to generate peptide mass spectra that are diagnostic of faunal identity. Here, ZooMS is applied to 116 fish bone samples from a 5000 year-old assemblage from the Sventoji region of Lithuania to deduce species identity and construct assemblage compositions. Identifications from ZooMS analysis uncovered incorrect morphological identifications in 14% of the fish samples analysed. Furthermore, through the analysis of over twenty different species, we demonstrate the ability to distinguish between closely diverged members of the Salmo spp. (salmon) and Scophthalmus spp. (turbet) genera; some of the taxa most frequently misidentified in this assemblage. This research highlights the great potential for applying ZooMS to archaeological fish remains that are otherwise often left unidentified.

Hassam, Stephan [130] see Tanasi, Davide

Hastorf, Christine A. (University of California-Berkeley) 
The Flavors Archaeobotany Forgot
Archaeobotanists find herbaceous plants in their collected macrobotanical collections regularly. Usually they are associated with animal fodder and fuel. But what if they were condiments? Recently there has been more information on wild herbaceous plants and insects as part of rural people’s cuisines. These oft-hidden ingredients should be recalled when taxa are collected, nurtured and cultivated in and around kitchen gardens and houses. For example, the current Italian kitchen garden weed Portulaca was not only eaten in salads in the past and into the present in some rural locations, but it also interestingly has helpful blood pressure lowering capacities, further suggesting that local weeds that grew next to people’s houses and in their nearby kitchen gardens were potentially essential to cuisines, flavors, as well as the health of the inhabitants.

Hatza, Ani [204] see Moran, Kimberlee

Hauser, Mark (Northwestern University) 
Language Shift and Material Practice
The model of linguistic creolization had a particular impact on archaeological practice. Drawing inspiration from Sidney Mintz’s and Richard Price’s Birth of African American Culture (1992), archaeologists have been quick to recognize how they could use the concept to interpret material culture and relations of power. Indeed, the histories and processes associated with settler colonization in the Caribbean, including indigenous displacement, forced migration of Africans and the appropriation of land and labor of both made it untenable to employ strategies that equated culture, biology, and language. The model helped archaeologists imagine, if not analyze, a less static understanding of social, political, and economic boundaries that shaped the colonial past. In this paper I build on this scholarship to consider a longer term set of processes that shaped Dominica’s landscape in the early modern period and that continue to reverberate today. Specifically, I rely on linguistic and archaeological evidence to parse some of the historical threads and relations of power.

Hautefeuille, Florent [23] see Géraud, Manon

Haverstock, Gregory
Archaeological Resource Protection: Challenges to Federal Enforcement of Antiquity Law among Land Managing Agencies
The Archaeological Resources Protection Act (ARPA) of 1979 was partially intended to address shortcomings in previous federal antiquities law. While the act corrected constitutional deficiencies with the Antiquities Act, federal land management agencies still grapple with a number of practical, cultural, and institutional barriers in carrying out archaeological law enforcement. This paper examines issues facing ARPA enforcement from the perspective of a land management agency. Case studies and court opinion will be used to highlight the relevant issues. These challenges include the use of science in a courtroom, logistical issues of carrying out a multi-year legal investigation, getting the support of the United States Attorney, archaeologists serving as law enforcers, facing the court of public opinion, and assigning monetary values to cultural items.

Haviser, Jay (St. Maarten Archaeological Center) 
Legacies of Syncretism and Cognition: African and European Religious and Aesthetic Expressions in the Caribbean
Incipient aspects of syncretic processes among Africans and Europeans had begun on the African continent from the fifteenth century, with a particular reference noted for religious practices. Considering the relatively isolated participation of the two groups within the early interactive sphere of West Africa, as well as the in-situ contexts of the African cultures, some syncretical expressions were evident, yet due to the disproportional ratio of populations, were more subtle on the continent. However, once the various African populations were forcibly transported to the Caribbean, eliminating a strong homogeneity of cultural traditions, the degree of interactive exchange between Africans and Europeans increased dramatically, resulting in more complex and open forms of syncretism. This presentation seeks to provide a discussion of how African-European syncretic processes manifested themselves in successful forms, such as with benign cognitive compromises relating to religious practices, as well as how these syncretic processes were also rejected, such as with conflictive cognitive aspects in forms of aesthetic expression. It is proposed here that variable degrees of syncretical effectiveness were based on the fundamental variation of African and European cognitive approaches, with two archaeological case studies presented, one of successful syncretism and another rejected syncretism on St. Maarten.
Hawley, Kirsten [101] see Scheiber, Laura

Haws, Jonathan [221] see Gomes, Ana

Hawthorne, Paige (National Park Service), Margo Schwadron (National Park Service), Alexandra Parsons (National Park Service), Carla Hadden (University of Georgia) and Tanya Peres (Florida State University)

Paleoecological Continuity and Change Over Time in South Florida

Florida National Parks preserve millions of acres of wetlands, subtropical estuaries and prehistoric waterways interconnecting thousands of tree islands, midden and shell work islands, comprising one of the largest and most complex prehistoric maritime landscapes worldwide. Recursive human and natural dynamics shaped these landscapes over deep time, but they are now beginning to be impacted by rising sea level and climate change. What can we learn from changes on the landscape and human and animal adaptations? Looking at various data sets as proxies for paleo-ecological and past environmental change from Canaveral National Seashore, Everglades and Biscayne National Parks, we provide several case studies that illustrate differences in sustainability, resilience and changes in resources over time.

Haydon, Rex [335] see Lozada, Maria

Hayflick, Emily (The Field Museum)

Inscribing and Reinscribing Place: The Persistence of Hot Spring Sites in the Northern New Mexico Landscape

This paper examines the ways in which humans create meaningful and enduring relationships with significantly unique environmental locations through a discussion of hot springs in the Rio Grande Gorge and Taos plateau. These springs demonstrate continual persistence as meaningful sites of visitation, marking, and of cultural importance for those dwelling in the Taos area from the archaic to the contemporary. Through an exploration of the markings and constructions around the springs, I hope to elucidate how the layering of culturally significant markers and the residues of past visitations shape the subsequent connections to these sites. The paper will then focus on the capitalistic interventions onto and the post-capitalistic interactions with the sites to elucidate ideas of ownership, restriction, and reclamation of these environmentally and culturally significant locations.

Haynes, Gary (University of Nevada-Reno)

Elephant-Hunting with D. Stanford

Dennis Stanford's work at the Dutton, Selby, Lamb Spring, and Inglewood sites was a major part of his lifelong search for breakthrough evidence about North America's earliest human encounters with mammoths. He encouraged me to study the megafaunal bones from those sites, and gave me room to disagree with him. His support allowed me to start looking into new ways to understand how the bones were modified and how such sites came to be. This presentation ties together data from those fossil sites with results of my actualistic research on megafaunal bones, starting with carnivore feedings at the National Zoo, and moving on to field studies of modern bonesites in North America, Australia, and Africa. Thanks to Dennis, critically important lessons have been learned about mega faunal bone assemblages. For example, we know that noncultural processes can spiral break proboscidean bones in ways that may be mistaken for human-caused fracturing, and that mortality profiles of multi-mammoth assemblages may reflect causes of death. Mammuth and other proboscideans feature prominently in debates about the evolution of human abilities to exploit large mammals, and Dennis Stanford has done much to advance the state of our knowledge.

Haynes, Gary [189] see Hutson, Jarod

Hays, Maureen [41] see Franklin, Jay

Hays-Gilpin, Kelley [218] see Barker, Claire

Hays-Gilpin, Kelley [70] see Smith, Jaye

Hayward, Michele (Panamerican Consultants), Michael Cinquino (Panamerican Consultants), Frank Schieppati (Panamerican Consultants) and Don Smith (Panamerican Consultants)

Shrines, Pilgrims, Pilgrimages in the Caribbean?

There is some suggestion in the literature, most explicitly developed by Espenshade (2014) for Puerto Rico, that major enclosures, particularly with rock art, at some point in their life cycle could be considered shrines or special religious places that increasingly attracted visitors or pilgrims from non-local on- and off-island locations. Pilgrimage rounds are well-established components of religious systems both past and current in various parts of the world, including the incorporation of a prehistoric rock art site in a present-day Voudou sacred journey on Haiti. The degree to which this concept applies in a prehistoric Caribbean setting will be examined through detailing probable archaeological correlates of pilgrimages and comparing rock art locations in the Greater and Lesser Antilles.

Chair

Hazard, Rebecca [224] see Field, Julie

He, Xiaqing [89] see MacDonald, Brandi Lee
INDIVIDUAL ABSTRACTS OF THE SAA 83RD ANNUAL MEETING

He, Yongshan (University of Toronto) and Chen Shen (Royal Ontario Museum; University of Toronto) [24]  
*What Can Artifacts Do: A Case Study of Miniaturized Architectural Models in Early China Tombs*

One major shift in mortuary practices that happened over the Han dynasty (202 BCE-220 CE) China, from burying bronze/pottery vessels to burying miniaturized architectural models, was usually explained as a result of the contemporary ideology of “treating the dead as alive”, or as a reflection of the social-economic transformation. While these previous interpretations invariably presumed that artifacts were passive representations and projections of ideological/social conditions of their contemporary people, the current paper intends to show the active roles of artifacts by shifting the main question from “what did grave goods represent or reflect” to “how did they influence people and what were their effects”. To do this, the paper first demonstrates that the material context created by existing pottery vessel styles was crucial for the emergence of granary terracotta as the earliest type of miniaturized architectural model; then it discusses how the newly invented granary models, by evoking the cognitive concept of miniaturism through their concrete material forms, resulted in a new category of grave goods being made and popularized, and eventually transformed people’s tomb practices. Thus artifacts should be seen as actively participating in social processes, influencing how people interact with and understand their world.

Headrick, Annabeth (University of Denver) [209]  
*Out of Clay and into Stone: The Emergence of Warriors at Chichen Itza*

In the Early Classic period a distinct characteristic of Central Mexican art is the appearance of warriors in public art. To the contrary, these figures generally appear on more private, personal items in the art of the Classic Maya, though their proliferation on these media distinctly rises in the Late Classic. In a remarkable development, the presence of warriors in public art explodes in Early Postclassic Chichen Itza. While central Mexican influence may have sparked this development, this paper explores the tangled web of cultural traditions, exposing the very Maya origins of many of these “portraits.” Looking primarily at the sculptural art of the Temple of the Warriors, the hybridity of this phenomenon will be emphasized. In addition, the individualization of the various figures testifies that a Maya concept of self within society characterized Chichen’s social organization, even as new segments of society asserted their status within the city.

Healan, Dan [169] see Hernandez, Christine

Heath, Barbara [188] see Upton, Samantha

Hechler, Ryan (Tulane University) [178]  
*Over the Andes, and Through their Goods: Integration Period Relations in Northern Ecuador*

While highland Peru’s Late Intermediate Period (AD 1000–1400) is characterized by community isolation, regional violence and shrinking exchange networks, the contemporary northern Ecuadorian Late Integration Period was a time of large-scale interregional activity that saw the flourishing of market economies. The northern Ecuadorian Andes demonstrated highly diverse cultural practices amongst an intimately connected Barbacoan world that stretched from between the highlands of northern Ecuador and southern Colombia to the Amazon and the Pacific coast. Late Integration Period groups such as the Caras, Yumbos, Quijos, and Pastos were intimately connected via political affiliation and economic exchange—relations that were built and sustained in highly varied environments. This region proved the most difficult to subdue during the late Inka conquest of the region. The Inkas’ imperial attempts to segregate the subjugated highland Caras from surrounding groups via constructing the highest concentration of fortifications in the Pre-Columbian Andes proved insufficient to quell ties with un-conquered selva communities, which maintained complex relations throughout Inka and Spanish colonialism.

[324] Discussant  
[324] Chair

Hecht, Erin [227] see Stout, Dietrich

Heckenberger, Michael (University of Florida) and Wetherbee Dorshow [161]  
*Anthropocene Amazonia, Beyond the Buzzword: Centennial-Scale Anthropogenic Influences on Southern Amazonian Forests, 1000–2000 CE*

The Anthropocene is defined here as the time when human-induced alterations of the environment become a driver of regional and global climate. The Amazon has very deep histories of human alterations of forest systems, but settled occupations that dramatically altered forest structure in regional systems of Late Holocene age, particularly following the Medieval Warm Period (MWP), ca. 900–1300 CE. Global population loss in the Old World, beginning in the 13th century, and the demographic collapse of New World populations, following European contact, resulting in the LIA, creating the closed forest conditions that characterize the Amazon today. During the Current Warm Period (CWP) deforestation threatens to force a near-term tipping event in the southern Amazon and other areas. This paper summarizes data from archaeological and paleoecological work in the transitional forests of the southern Amazon over the past millennium, including past adaptations to warmer climates in the MWP, such as large-scale forest management. These can provide practical solutions to changes afoot today in the CWP.

Heckenberger, Michael [116] see Dorshow, Wetherbee

Heckman, Robert [268] see Hellen, Michael

Hedgepeth Balkin, Jessica (University of Colorado, Boulder) [192]  
Moderator  
Discussant

Hedin, Benjamin [106] see Canaday, Timothy

Hedman, Kristin M. [306] see Hargrave, Eve

Hedquist, Saul (University of Arizona) [218]  
*And the Legacy Continues: Homol’ovi Looking Forward*

This paper honors the anthropological contributions of the Homol’ovi Research Program (HRP) and its directors. We reflect on the conception and implementation of field and curation protocols that enabled years of innovative research into ancient Pueblo lifeways, work that continues today. Though fieldwork in the region has ceased, researchers still benefit from exceptional field recording standards, sound conservation techniques, and an explicit behavioral project methodology. HRP was particularly meticulous in its attention to nuanced variation in archaeological deposits. In homage to the latter, we outline a case study of depositional content at Homol’ovi I, a late prehispanic Hopi village and the most intensively excavated site within the Homol’ovi Settlement Cluster. Using HRP data, we examine the co-occurrence of marine shell and turquoise—two relatively rare and symbolically important material varieties. Despite their scarcity, however, both were commonly deposited together at Homol’ovi I. We consider the social
Implications of the pairing, past and present, using archaeological and ethnohistorical insights. Our collections-based study demonstrates the lasting benefits of detail-oriented field techniques, an enduring hallmark of the HRP.  

Heidkamp, Blair (University of Cincinnati)  
[265] Spinning through Time: Comparing Spindle Whorl Assemblages from the Southern Levant  
Spindle whorls, a flywheel attached to a shaft used for the production of thread, are one of the only artifacts related to the textile industry which survives in the archaeological record. At the crossroads between Anatolia, Mesopotamia, and Egypt, the southern Levant is at the intersection of cultural and technological change, particularly throughout the chronological scope of my study: the Pottery Neolithic, Chalcolithic, and Early Bronze I periods. There has yet to be a comprehensive study of spindle whorl assemblages covering the entirety of the southern Levant over multiple chronological periods. As a part of my Master’s thesis, I collected data from published sources to create a database of whorls. I noticed specific trends in the data, most notably, a shift with primarily ceramic whorls in PN assemblages to a majority of EBI whorls made of stone. Evaluating the observed trends in spindle whorls, along with identifying the materials and potential processes individuals were using to spin thread, I was able to draw conclusions about the prehistoric textile industry in the southern Levant.  

Heilen, Michael (Statistical Research, Inc.), Monica Murrell (Statistical Research, Inc.), Phillip Leckman (Statistical Research, Inc.) and Robert Heckman (Statistical Research, Inc.)  
[268] Exploring the Relationship between Surface and Subsurface Contexts in the Permian Basin, Southeastern New Mexico  
Analysis of previous cultural resource management investigations conducted in the Permian Basin of southeastern New Mexico indicate that many data are of poor quality, unstandardized, and of limited utility for comparative purposes or regional planning. Part of the problem is the limited understanding of which methods are best suited for site recording and testing and, more specifically, how observations made at the site surface correspond to subsurface content. This poster presents an experimental project sponsored by the Bureau of Land Management that investigated how survey, site-recording, and subsurface testing methods can be used to improve the analysis and interpretation of sites in southeastern New Mexico. Four previously recorded sites were re-recorded with the truncated recording unit (TRU) system, then tested through a continuum of hand and mechanical techniques and subjected to intensive geoaarchaeological investigations in order to identify techniques best suited to understanding their significance, integrity, and subsurface potential. The results of these efforts were analyzed to better understand the costs and benefits of the TRU system for survey and site recording, identify analytical procedures for leveraging TRU data in a management context, and assess the utility and reliability of different test methods commonly employed during site testing.  

Heiden, Theresa (University of California—Riverside)  
[129] Ancient Maya Land Use: Water Management and Agricultural Production at Actuncan, Belize  
Research conducted during the 2015–2017 Actuncan Archaeological Project field seasons revealed several land use strategies utilized during the Late and Terminal Classic periods, including terracing, agricultural plots, and cobble mounds. Excavations conducted in the Northern Neighborhood of
Actuncan exposed two terracing methods: 1) terraforming, in which earthen berms created to facilitate water drainage and 2) two small agricultural plot systems filled with a large amount of redeposited domestic trash. Such high levels of redeposited domestic trash, and the arrangement of these plots, suggest that agricultural and water drainage activity took place at an intra-household or larger community level. In addition, a number of linear cobbled mounds have been found east of Actuncan along the Mopan River floodplain. Based on soil chemistry and proximity to the river, this area may have been used as a cacao orchard, thus creating an economic opportunity that could have benefited the entire community. Together, these systems reflect how the ancient Maya at Actuncan managed water and agricultural production, and the scale at which these technologies were administered. These systems would have required collaboration between multiple households, creating community-wide cooperation towards food production (through terracing and agricultural plots) and for economic activity (through cacao orchards).

Heilman, Carolyn [15] see Reed, Paul

Heilman, Carrie (University of Nebraska-Lincoln) and Paul Reed (Archaeology Southwest) [122] An Archaeology of Ash? Exploring Chacoan Contexts and Practices

The goal of this paper is to bring together disparate data sources on various Chaco-era sites both within Chaco Canyon, NM and outside (Salmon Pueblo) to examine the use of ash in intramural contexts. In light of recent work on the dimensions of animation, precedence, ancestors and heirlooms evident in Chacoan architecture, what patterns emerge regarding the deliberate use and deposition of ash? And how might we use Puebloan ethnographic accounts of ash to help inform our interpretations? This paper aims to contribute to the growing body of research on archaeological ash deposits.

Heizer, Melanie (University of Victoria) [238] Photogrammetric Results of Cemetery Inscription Analysis

Being presented here are the results from the digital work done in the cemetery. Focusing on revealing the lost inscriptions, the goals of this project have been to corroborate the list of people buried in the cemetery, and identify the names and dates of those either not listed or those for whom the records are not complete.

In using photogrammetry, burial monuments in the Emanu-El cemetery in Victoria, BC are being rediscovered and assessed for cultural preservation purposes. This digital technology is being used in conjunction with archival research, looking at the individuals buried in this cemetery. By identifying the names and dates associated with the monuments, we are able to recreate an identity for the individuals buried here. Additionally, we are able to assess which monuments are in danger of environmental damage, and identify them for potential preservation efforts. This digital project has been run alongside other archaeological and cultural surveys in the cemetery.

Heller, Sky [294] see Ingraham, Robert

Helmer, Matthew (US Forest Service) and David Chicoine (Louisiana State University) [82] Variations in Settlement Patterns and Neighborhood Organization in Early Horizon Peru

This paper examines forms of proto-urban settlements in coastal Ancash, north-central Peru, centered on the Nepeña Valley. During the Early Horizon (800–100 BC), the region witnessed the development of culturally and economically interrelated settlements with varying degrees of architectural diversity of residential adaptations during the first millennium BC.

Helms, Christopher [147] see Stanchly, Norbert

Hemer, Katie (University of Sheffield) [87] Non-adult Dis/ability and Care in Early Medieval Britain

A child who is unwell or physically impaired naturally causes concern and anxiety for his or her parents/carers. For many in today’s modern society, accessible medical care means that the challenges associated with caring for a sick or disabled child can be overcome or, at least, minimized. But how did parents/carers respond and adapt to the demands of ill-health and physical impairment in children during the early medieval period? In seeking to address this question, this paper will explore evidence for physical impairment (e.g. achondroplasia) from the analysis of non-adult skeletal remains from early medieval Britain. Through an exploration of the burial rites accorded to physically impaired children, this paper will consider whether or not parents/carers put in place any provision for their child either during and/or after life, and whether such evidence offers insight into early medieval attitudes towards dis/ability.

Hemer, Katie [87] see Shiner, Marion

Hemmings, C. A. [35] see Adovasio, J. M.

Henderson, A. Gwynn (Kentucky Archaeological Survey), Linda S. Levstik (University of Kentucky), M. Jay Stottman (Kentucky Archaeological Survey) and Janie-Rice Brother (Kentucky Archaeological Survey) [94] Investigating a Shotgun House: “Who Knew Shelter Was So Emotionally Charged?”

Investigating a Shotgun House, a Project Archaeology: Investigating Shelter case study, asks students to use multiple data sources (oral history, historical documents, architecture, and archaeology) to examine a single question: what can we learn about the lives of mid-20th century urban working-class people from the study of their homes? In this case, shotgun houses. Formal field testing in elementary school classrooms, and interviews with piloting teachers and their students documented that the unit is a highly motivating teaching tool that promotes deep conceptual understanding of basic historical, anthropological, and archaeological content, concepts, and methods while eliciting empathetic attention to issues of social justice, agency, and civic engagement. Our research also determined that the unit is an excellent model of an active learning, inquiry-based teaching approach. Inquiry-based teaching begins with a question, and requires content, data, analysis, thinking, and drawing conclusions to answer it. For many teachers and students, inquiry represents a major pedagogical paradigm shift. If deep conceptual understanding is a course goal, instructors
Henderson, A. Gwynn [26] see Pollack, David

Henderson, John (Cornell University) and Kathryn Hudson (University at Buffalo) [299] Toward an Ulúa World: Defining, Delimiting, and Interpreting Interaction Networks
Framing the lower Ulúa valley and adjacent regions as part of a southeastern Mesoamerican frontier has always entailed an interest in external relationships, especially those connecting frontier regions with the Maya world to which they were supposedly peripheral. The belief that the periphery was occupied by simple non-Maya societies, lightly “influenced” by their more civilized western neighbors, appeared early in the development of orthodox frameworks and continues to influence archaeological perspectives. The advent of World Systems Theory and other core-periphery perspectives brought an interest in the character of the relationships but little advance in attention to the material remains that might reflect the supposed derivative nature of frontier cultural patterns.

Understanding interaction requires methodologies that move beyond unilateral region-to-region or community-to-community connections and focus instead on the development of innovative approaches to documenting multiple overlapping networks connecting many groups within many communities. Taking ceramic systems as our focal point, we explore the potential of pottery to map links among lower Ulúa valley groups and their counterparts in adjacent regions. Delineating the distributions of these likely traces of interaction illustrates a new and more sensitive framework for assessing the movement of ideas and things in a complex landscape.

Henderson, Lucia (Independent Scholar) [176] Looking Beyond Teotihuacan in the Art and Architecture of Early Classic Kaminaljuyu
This paper examines the foreign connections evidenced by the material record of Early Classic Kaminaljuyu. The author discusses the ways in which public art, architecture, and elite funerary contexts evolved at Kaminaljuyu during this time, evaluating how these changing styles may have led to evolving relationships with distant sites and regions such as Teotihuacan, Veracruz, and the Maya lowlands. The Early Classic relationship between Kaminaljuyu and Teotihuacan has, in many ways, eclipsed the myriad other relationships evidenced by Kaminaljuyu’s material record during this time. The singular scholarly focus on the interaction between these two sites has created the impression that Early Classic Kaminaljuyu had a single, monolithic approach to foreign style and a single, primary foreign relationship. Stepping back to consider this time period more holistically, however, a pattern emerges instead of diachronic change and synchronic variation, with Kaminaljuyu laying claim to evolving sets of relationships with numerous foreign powers through time. In sum, this paper seeks to both dig deeper into the nature of the Early Classic relationship between Kaminaljuyu and Teotihuacan as well as give a stronger voice to other connections encountered in the art and architecture of Early Classic Kaminaljuyu.

Henderson, Julia (Gettysburg College) [278] Moderator
[278] Discussant

Hendrickson, Mitch (University of Illinois at Chicago), Stéphanie Leroy (LAPA-IRAMAT, NIMBE, CEA, CNRS, Université Paris-Sa), Quan Hua (Australian Nuclear Science and Technology Organisation), Kaseka Phon (Royal Academy of Cambodia) and Enrique Vega (LAPA-IRAMAT, NIMBE, CEA, CNRS, Université Paris-Sa) [175] Space, the Iron Frontier: Production, Spatial Organization and Historicity of Iron Metallurgy within the Angkorian Khmer Empire, Cambodia (9th to 15th c. CE)
Iron production was a critical process in the expansion of the Angkorian Khmer Empire. Recent surveys by INDAP around the Phnom Dek region have revealed a massive industrial landscape that appears to have fueled Angkor’s expansionist ambitions between the 11th to 13th centuries. This paper presents a spatial and morphological GIS analysis of hundreds of slag concentrations mapped in this region to evaluate changes in the scale and organization of metal production. Combined with pXRF data of tap slags analyzed in the field, we model smelting recipes zones around Phnom Dek to reveal patterns of ore selection and producer practice. The results dovetail with the rigorous artifact-based analyses conducted by IRANGKOR with the overall goal of tracking how the Khmer iron economy functioned and impacted development of the most expansive state in mainland Southeast Asia.

Hendrickson, Mitch [175] see Leroy, Stéphanie

Hendryx, Greg, Joost Morsink (SEARCH, Inc.) and Charlotte Pevny (SEARCH, Inc.) [140] From Quarry to Mine: Citronelle Gravel Extraction in Southwest Mississippi
Excavation was performed on the periphery of a substantial Pliocene-age deposit of Citronelle gravel in southwest Mississippi, 20 miles north of the Gulf Coast. This gravel deposit, which covered hundreds of acres, represents the southern-most exposure in the region. Historic Citronelle mining throughout the twentieth century has extirpated the signature of primary lithic reduction deposits; however, a discrete loci of cultural material spanning two millennia remains intact, and buried beneath the mine tailings. This paper provides information on the activities conducted during stone-seeking forays from the coast and includes a discussion on historic period mining.

Henebry-DeLeon, Lourdes (Central Washington University) [253] Born and Bred on the Columbia Plateau: The Ancient One in Time and Place
In looking at all available population specific data for the Columbia Plateau, the Ancient One falls within the variability exhibited on the southern Columbia Plateau at the same time period and throughout time. He was not outside of the norm for the population existing during the Early Cascade period when he was alive and for the population that followed for which he has a shared group identity. The Ancient One’s biological identity, cranial morphology, stable isotope values, and DNA data reflects the most recent and direct lines of evidence establishing a distinct, identifiable earlier group. Biological and other evidence provides a sufficient link to culturally affiliate the identifiable earlier group through time to nearby populations. The same biological evidence, seen in the Ancient One is present within the regional area of the wider Columbia Plateau through time.

Henebry-DeLeon, Lourdes [253] see Neller, Angela

should consider incorporating some aspect of an inquiry-based approach in their teaching. Our poster presents a brief overview of the unit, highlighting its inquiry approach and its social justice aspects. A mini lesson is provided.
No Fire without Wood? Some Reflections on Late Pleistocene Pyrotechnology in Northern Tundra Environments (East Siberia, Interior Alaska)

The use of alternate fuels such as grasses, bones or dung has often been interpreted as a typical response of Late Pleistocene (LP) hunter-gatherers to harsh environments, in which woody resources are scarce. In the context of early human dispersal from south-east Siberia into the Americas, the question of prehistoric migration and settlement is closely linked to the one of fuel availability, fire being considered, to the same extent as food, a vital element for survival. However, data regarding the modalities of LP fuel and fire use in Siberia/Beringia are still too scarce to integrate pyrotechnology into the reflection about ancient human behaviour and adaptation to cold climates. New multi-proxy fuel analyses (wood charcoal, phytoliths, burned bone remains) of two LP sites, Kovrižhka IV (Irkutsk region, Russian Federation) and McDonald Creek (Alaska, USA), allowed us to obtain first results on the neighbouring vegetation as well as on fuel management practices in the shrub-tundra zone. Heath micromorphology is also planned at these sites and will provide valuable complementary data on feature formation and functioning. Our results will be discussed in light of the current hypotheses on prehistoric fuel use as well as ethnographic examples from eastern Siberia.

Henry, Edward [291] see Grooms, Seth

Hepp, Guy (California State University, San Bernardino)

Coastal-Highland Interaction in Early Formative Period Mesoamerica: The Ceramic Affiliations of La Consentida

Early Formative period pottery from the site of La Consentida in coastal Oaxaca, Mexico, bears indications of both local developments and interregional influences. In previous papers, I have presented stylistic evidence for interaction between La Consentida and potters from distant West Mexican traditions such as Capacha and Opeño. While some of La Consentida’s decorated Tlacuache phase vessels suggest involvement in a system of long-distance interaction along Mesoamerica’s Pacific coast, more utilitarian wares such as globular jars and undecorated hemispherical bowls imply affiliations closer to home, specifically with Early Formative period highland assemblages of the Espiridión, Tierras Largas, and Purrón phases. In this paper, I discuss formal similarities between highland pottery and La Consentida’s Tlacuache phase assemblage. On the basis of these affiliations, I propose a model in which La Consentida’s diverse ceramics are explained as partly the result of the cooperating or even conflicting emphases of overlapping interaction spheres: one along the Pacific coast and one tying the coast to the southern and central Mesoamerican highlands. These patterns suggest that people at La Consentida both maintained some traditional practices of Red-on-Buff potters in adjacent regions and self-consciously participated in a coastal interaction network involving more superficial decorative styles.

Hepp, Guy [306] see Rumberger, Jacklyn

Herbert, Joseph (Cultural Resources Management Program, Fort Bragg), Jonathan Schleier (Center for the Environmental Management of Military and William Feltz (Oak Ridge Institute for Science and Education)

Long Leaf, Fire and Hunter-Gatherers of the Carolina Sandhills

In presettlement times long leaf pine forest dominated the Carolina Sandhills, where frequent wildfire, sandy soil and steep hydrologic gradients produced high biodiversity, but low hunter-gatherer carrying capacity. Land-use models based on the results of systematic shovel testing across 162 square miles at Fort Bragg, North Carolina, indicate continuous occupation throughout prehistory, small group size and short terms of residential tenure. Although the archaeological site is the unit of resource management, most sites comprise multiple components, and comparing component spatial density across presettlement vegetation communities and wildfire-frequency zones provides a means for exploring prehistoric land use. Archaic components are more dense in Xeric Longleaf Pine–Wiregrass Sandhills communities where upland flats offer long sight lines and minimal topographic relief, ideal for overland travel, logistical procurement, large game hunting and family-band migration. The spatial density of Woodland components is higher in Mesic Longleaf Pine–Wiregrass Slope, Small Stream Swamp and Depression Pond communities where less frequent, lower intensity wildfire encourages deciduous mast-bearing trees and richer soil for horticulture. Quantifying cultural component spatial density across vegetative community type also provides a standard for evaluating the research potential of resources, determining NRHP eligibility, and ranking potentially eligible resources for further testing.

Herckis, Lauren (Carnegie Mellon University)

Archaeology as Anthropology: Chaîne Opératoire and the Analysis of Contemporary Technologies

The application of archaeological methods to modern contexts is an emergent trend in cultural anthropology. This paper presents a case study of chaîne opératoire methodologies in the analysis of modern technologies. New materialist ontologies and digital archaeologies offer powerful tools for understanding the past. Behavioral archaeologists apply method and theory to relationships between people and things in all times. Dawdy, McGuire and others address the current archaeological turn in anthropology. The application of archaeological methods in analyses of contemporary material landscapes and social contexts isn’t new. This paper adds to the ongoing discussion, arguing that these efforts provide data to refine our understanding of the past and also contribute to our understanding of the present. Transformations in social and material landscapes are entangled today as they were in the past. Many aspects of raw material, discard, refinement, and locality have significant effects on the chaîne opératoire of modern technologies. Social factors contribute to the spatial arrangement of craft production, elaboration, use, and repair at a research university. A chaîne opératoire approach provides an integrated understanding of production processes related to educational technologies, exposing complex relationships between labor, emergence and diffusion of technological traditions, and exploitation of available resources.

Discussant

Heredia Espinoza, Verenice [31] see Marino, Marc
Hernandez, Christine (Tulane University) and Dan Healan (Tulane University)

Sourcing studies conducted over the past 45 years have identified obsidian from the outcrops around Ucareo and Zinapécuaro, Michoacán in Guanajuato, our investigations have produced a considerably refined and expanded sequence made possible by a much larger data set and archaeological sites located across Mesoamerica including San Lorenzo, Xochicalco, Tula, Chichén Itzá, and Tzintzuntzan. Archaeological investigations including survey and excavation conducted by Tulane University during the 1990s have provided the first detailed information on prehispanic settlement and obsidian exploitation within what is now called the Ucareo Zinapécuaro obsidian source area (Healan 1997, 1998; Hernández 2006). In this presentation, we formally introduce the regional ceramic sequence and chronology established for the source area and adjacent northeastern Michoacán. While based on the sequence and chronology published by Gorenstein (1985) for neighboring Acámbaro, Guanajuato, our investigations have produced a considerably refined and expanded sequence made possible by a much larger data set and chronometric dating of 30 radiocarbon samples. The result is a ceramic and cultural chronology that encompasses nearly 2,000 years of dynamic prehispanic occupation, obsidian exploitation, and consumption that is so deeply rooted in western North Carolina.

Hernandez, Christine (Tulane University) and Dan Healan (Tulane University)

[169] The Ceramics and Chronology of the Ucareo-Zinapécuaro Obsidian Source Area, Michoacán, Mexico

Examining Environment, Ecology and Patterns of Maya Culture at Mensabak, Chiapas, Mexico

Our study examines the interplay of the environment, topography, conflict, and social change. Recent research stresses the role of environmental and ecological fluctuations in the Classic Maya collapse (AD 700–1000). Scholars have linked drought cycles and changing climate to increased warfare and culture change at the end of the Classic Period (AD 200–900). However, numerous studies highlight that not all places in the Maya area collapsed, some communities grew and continued to be places of human settlement for many centuries. More local high-resolution environmental data are necessary to understand the interplay of environment, ecology and Maya culture change. This paper examines data from the Selva Lacandona region to understand how climate and ecology may be linked to social transformation within the vicinity of Lake Mensabak. After the collapse, the Maya lowlands were massively de-populated, but during the Late Postclassic (AD 1200–1600) Lake Mensabak became a place of renewed settlement. As Maya migrated to the lake for its aquatic resources and defensible landscape, elites chose islands with elevated terrain to instantiate a cosmological/ideological scheme. People of lesser rank resided near the lake shore and at lower elevations, which were areas of lesser religious importance and more exposed to attacks.

Hernandez, Christopher (University of Illinois-Chicago) and Joel Palka (University of Illinois-Chicago)

[167] Examining Environment, Ecology and Patterns of Maya Culture at Mensabak, Chiapas, Mexico

Industrial Heritage and Henequen Landscapes: The Social Spaces along the Conkal-Progreso Railway in Northern Yucatan (1886–1950)

From the second half of the nineteenth century the Yucatecan henequen industry experienced an extraordinary growth that would result in a “Gilded Age”. The most notorious vestiges of this era are the henequen haciendas, which were dispersed across the entire peninsula and whose ruins evoke nostalgia for an era of industrial and commercial splendor. By the end of the century, new developments in communications and construction industries also appeared. Yucatán’s accelerated economic growth, tied to the henequen boom, resulted in new transport infrastructure such as the railroad, which became the force behind the growth of agricultural, industrial, and commercial production on the peninsula. A narrow-gauge railway that ran from the town of Conkal to the Port of Progreso is a clear example of a capitalist project of that epoch which brought changes to the Yucatec landscape and the social relations that impacted native populations. This paper focuses on the survey and register of archaeological evidence along this railway using modern technologies such as UAV’s, as well as excavation, and material culture analysis. Our goal is to illustrate how economic boom and industrialization had drastic environmental, social, and cultural repercussions within indigenous communities of the Yucatan peninsula.

Hernández, Irais [172] see Lucet, Genevieve

Hernández, Laura

[57] Where Are You Staying? Lodging Facilities in San Juan, Puerto Rico

In the 19th century there was a large influx of people traveling to Puerto Rico, many stayed in lodgings throughout the capital city of San Juan. This study focuses on the hotels, guest houses and hostels within the walled city, currently known as Old San Juan, during the late 19th century and early 20th century. Using primary sources that include photographs, maps, blueprints and newspaper advertisements, the goal of my research is to establish the location of this type of businesses. Also, to address issues related to the movement of foreigners from various social groups within the city. Once the location was pinpointed, a virtual map was created to include street views, data related to the location, rates and clientele, and other relevant details. A list of lodging facilities was used to visit the location and photograph the buildings, and to cross reference it with the cultural resources management projects that have been completed. The data produced by this study can be used to develop a larger project that includes excavations in some of these locations.

Hernández, Mario

[260] Análisis geoespacial de la distribución de sitios arqueológicos en la Sub-Región Diquís, Región Gran Chiriquí

La Sub-región Diquís de la Región Gran Chiriquí posee a la fecha un total de 1.595 registros de sitios arqueológicos documentados en la Base de Datos Orígenes del Museo Nacional de Costa Rica. El presente trabajo expone los resultados logrados al aplicar un análisis geoespacial diseñado para conocer la distribución de dichos depósitos arqueológicos, en un contexto fisiográfico modelado para tal efecto mediante sistemas de información geográfica (SIG), que permite aproximarse a las características de la ocupación precolombina de la sección noroeste de la región Gran Chiriquí aprovechando los datos de antigüedad y funcionalidad que se consignan en la mencionada base de datos.
INDIVIDUAL ABSTRACTS OF THE SAA 83RD ANNUAL MEETING

Esta investigación busca conocer la dispersión y concentración de sitios arqueológicos en diferentes unidades paisajísticas de índole fisiográfica, para aportar a la discusión sobre la localización propuesta de asentamientos de la fase Aguas Buenas (500 a.C.-800 d.C.), con una tendencia en las tierras altas de esta sub-región en contraste con la frecuente distribución de yacimientos adscritos a la fase Chiriquí (800–1550 d.C.) en las tierras bajas. La distinción de las distintas funcionalidades de estos yacimientos, según las diferentes fases, ha permitido brindar aproximaciones al uso de la tierra en tiempos prehispánicos para la sub-región bajo estudio.

Hernandez Garavito, Carla (Vanderbilt University) [257] From there, a great long time ago, even before the Incas were born: Representations of the Inka Empire among the Lurin Yauyos Andean archaeology consistently uses the Spanish colonial written record as a guide in interpreting the characteristics of the different societies that fell under the Inka rule. However, a growing body of scholarship on the material culture of such incorporated societies shows that the nature of their relationship with the Empire was variable, and that Inka control was not territorially continuous. One key strategy through which the Inka incorporated these groups was the entangling and capture of their local religious practices with those of the official state cult. In this paper, I propose to flip this model and ask how local polities interpreted the Inka within their own memory and history. In other words, what were the narratives that some of these polities spanned to define their own standing within the Empire? I focus on the Yauyos people from the highlands of Peru. Through and archaeological and historical analysis, I argue that local rituals and spaces served as the critical medium through which the Yauyos defined their own interpretation of the Inka and their new position within their empire, thinking of themselves as allies as of the Inka as subjected to their own local deities. [257] Chair

Hernández Sarriñana, Daniela [184] see Buckley, Gina

Hernández Sarriñana, Daniela [293] see Carballo, David

Hernandez-de-Lara, Odilanyer (Cuba Arqueológica) [57] Documenting the First Battle of the Spanish-Cuban-American War (1898): Insights for an Archaeological Perspective

The Spanish-Cuban-American War of 1898 constituted not only the events leading to the start of the first modern war but also marked the beginning of the colonialist expansion of the United States throughout the world. The explosion of the USS Maine in Havana’s harbor has often been interpreted as the excuse used by the US to get involved in the Cuban War of Independence; a war that Cubans and Spaniards had been fighting since 1895, but rooted since 1868. Previous research has traditionally focused in the naval encounters of the Spanish and US fleets in Santiago de Cuba, or the end of the war with the occupation of Puerto Rico, the Philippines, and Guam, thus underestimating the role of the Cuban troops and leaving the early events of the war poorly explored. Our research focuses on the first battle of the war, which occurred on Matanzas Bay, Cuba, on April 27th, 1898. Historic documentation from Cuban, Spanish, and US archives is analyzed, and compared to the available archaeological data, to deepen the understanding of the defensive and offensive strategies employed, and their impact on the media and their publicist strategies. [57] Chair

Herndon, Brianna (University of California, Riverside) and Sara Becker (University of California, Riverside) [270] Movement in Moquegua: Detecting Differential Activity Types via the Knee in a Tiwanaku Subgroup

Previous studies regarding femoral fossa morphology center on risk levels and variables associated with non-contact anterior cruciate ligament (ACL) injury. Increased risk of ACL injury is associated with smaller femoral fossa size. While fossa size is influenced by many variables, biologically “plastic” responses to early life experiences, such as traversing local topography or cultural factors, are appearing to emerge as perhaps the most impactful. Due to the crucial nature of the knee, it is one of the most common locations of focus to detect how stressors of daily life (e.g. movement, activity) shape the underlying skeletal structures. Available studies of the skeletal elements of the knee almost exclusively focus on linear landmark measurements as methods for analysis. Such reductive methodology neglects the three-dimensional, dynamic nature of this joint. This research seeks to present an alternative methodology utilizing digital models that tests for skeletal differences at the knee between subsistence/activity groups (settled agriculturalists versus pastoralist/lama caravanners in a Tiwanaku sample). The use of three-dimensional models is intended to more accurately represent the complexity of the knee joint in analytics, results, and interpretations of the movements and activities of past populations.

Herrera, Valentina (Institute of American Indian Arts) [337c] Discussant

Herrera-Casanova, Lorenzo [131] see Martínez-Tagueña, Natalia

Herring, Erin [38] see Cromwell, Richard-Patrick

Herrmann, Corey (Yale University) and Nicholas Brown (Yale University) [249] The Thorny Problem of Spondylus Sourcing in the Ancient Andes

Archaeologists have long been fascinated with the exploitation and exchange of Spondylus spp. across the ancient world. This is especially true for the Andes, where the “thorny oyster” has been found far afield from its tropical breeding sites along the coasts of Ecuador and northern Peru. However, factors such as the uneven development of archaeology between Peru and Ecuador and the persistence of certain myths about Andean Spondylus have led to a “black-boxing” effect where exchange from Ecuador to Peru is assumed rather than tested. This paper briefly presents the state of understanding in Andean Spondylus, as relates to: its exploitation by ancient people; its exchange through the coast, highlands, and jungle; its production into remarkable artifacts of beauty and importance; and its cosmological significance for numerous Andean societies. This review highlights the potential impact of developing techniques to source Spondylus shells from their coastal Ecuadorian and Peruvian breeding grounds on the study of the ancient Andes. The paper will present preliminary results of archaeometric sourcing efforts, the difficulties of extending this technique into the Andean paleoclimate, and the implications of defining the sources of Spondylus for exchange in the ancient Northern and Central Andes. [324] Discussant

Herrmann, Edward (Indiana University Department of Earth and Atmospheric Sciences), Mackenzie Cory (Indiana University Bloomington), Katie Hunt (IUPUI), John Flood (IUPUI) and Josh Myers (IUPUI) [5] Chronologies of Paleoindian Site Distributions and Raw Material Use in Indiana: An Analysis of State-Level Data

In this paper, we present an analysis of all recorded Paleoindian sites in Indiana and place them in a diachronic framework. Our findings are part of a long-term project to construct a Geographic Information Systems database of Paleoindian sites that can be queried for data relevant to a better understanding of the Paleoindian presence in Indiana. Preliminary data indicate that time-transgressive differences exist for where Paleoindians placed themselves on the landscape, and for how Paleoindians exploited lithic raw materials. Due to different reporting standards through time, state-level
data are inherently difficult to compare, however, our team evaluated each site in terms of landform location, artifact typologies, and when available, raw material types. We also describe our experience with various issues related to state-level data and the use of gray literature to help provide additional data and site context.

Herzog, Nicole (Boise State University), Lisbeth Louderback (University of Utah and the Natural History Museum) and Bruce Pavlik (Red Butte Garden, Conservation Department)

[86] Comparing Starch Granules from Wild and Cultivated Solanum jamesii to Determine the Effects of Domestication

The processes, antecedents, and outcomes associated with plant domestication have been central themes in archaeological and interdisciplinary research for the last century. While domesticates can often be readily distinguished from their wild progenitors both genetically and morphologically, the steps leading to domestication (transport, selective harvest, deliberate seed dispersal, active plant management, i.e. cultivation) can be difficult to track archaeologically. Techniques for identifying morphological changes in macrobotanical remains (e.g. seeds, fruits, caryopses) from archaeological sites have been well established, but there are virtually no systematic studies on starch to identify morphological changes in microbotanical remains (e.g. starch granules) despite claims that larger granules are characteristic of domesticated species. Here we test the hypothesis that domesticated plants produce larger starch granules than their wild progenitors. We measured granules from the Four Corners potato (Solanum jamesii) that were a) grown in the wild, b) associated with archaeological sites, c) propagated in a greenhouse, and d) cultivated in a garden. This systematic approach provides the first attempt to establish a protocol for identifying the domestication process in starch granules.

Herzog, Nicole [86] see Louderback, Lisbeth

Hess, Michael [134] see Lo, Eric

Hewitt, Ray [261] see Frederick, Jennifer

Heydari-Guran, Saman [174] see Ghasidian, Eiham

Hicks, Megan (City University of New York), Árni Daniel Juliusson (Reykjavik Academy), Ragnhildur Sigurðardóttir (Reykjavik Academy), Aastrid Ogilvie (INSTAAR, University of Colorado) and Viðar Hreinsson (Reykjavik Academy)


In the early modern Atlantic World, core/periphery mercantile economics ascribed a marginal place for Iceland. The island’s role in trade involved the production of low-cost bulk goods destined for markets mostly via Denmark into the 19th century. The focal area of this paper, the rural and upland Mývatn region, was in some ways socially and ecologically marginal even within Iceland. The growing environment was affected by unpredictable cold weather while volatile erosion zones hemmed local grazing land and hayfields. Although the community was home to two small rural municipal centers, it was distant from coastal trading points. Through interdisciplinary archaeology, environmental investigation, and documentary evidence, this paper investigates and describes how people in Mývatn managed ecological productivity and economic engagement at a periphery. We find that their significant efforts to secure abundance from marginal places was inseparable from social transformations through which the community ultimately assumed an influential role in changing the conditions of regional and national trade. This integrated social and ecological approach contributes to understandings of marginality as not an essential property of landscapes and societies, but one that is actively produced and contested through relations at many scales.

[195] Chair

Higa, Naoki [24] see Sweeney, Alex

Higelin Ponce de León, Ricardo (Indiana University Bloomington), Alicia Gonzales (Oregon State University) and Jeffrey Blomster (George Washington University)

[288] Skeletal Health and the Impact of Agriculture within the Mixtec Population from Etlatongo, Mixteca Alta, Oaxaca during the Middle Formative

Sedentism and agriculture had major impacts on early human societies by increasing social complexity. Some scholars attributed an intensification of inequalities to a greater dependency on agriculture. This dependency, consequently lead to decreased health status of the non-elite/rulers population. Our goal is to address the overarching question of how did agriculture impact ancient societies? And specifically, does the emergence of agriculture correlate with decreased health? Therefore, we assess the impact of agriculture within the Middle Formative (850—400 BC) population from the Mixtec prehispanic society from Etlatongo, located in the Nochixtlán Valley, Oaxaca. We use archaeological and bioarchaeological data to evaluate health of 21 individuals and compare them with other skeleton collections within the same time period, from the Mixteca Alta, Valley of Oaxaca and the Coastal regions, all from Oaxaca. Through these comparisons, we propose that it is possible to extrapolate that agriculture does impact human health in the Middle Formative Mixteca Alta population.

[337c] Discussant

Higelin Ponce de León, Ricardo [306] see Gonzales, Alicia

Higelin Ponce de León, Ricardo [288] see López López, Alba

Higham, Tom (University of Oxford), Thibaut Devièse (University of Oxford), Marine Frouin (University of Oxford) and Katerina Douka (Max Planck Institute for the Science of Human History)

[41] Neanderthals, Denisovans and Modern Humans: Unravelling the Chronology of the Middle to Upper Palaeolithic of Eurasia

For more than half a century Paleolithic archaeologists have grappled with radiocarbon-based chronologies that are often contradictory and imprecise. Several key debates in the Palaeolithic have their roots in basic issues related to chronology; did the Aurignacian predate the Chatelperronian in some regions of Europe? When did Neanderthals disappear? How long did anatomically modern humans (AMH) and Neanderthals overlap, and what implications did this have for interaction, acculturation or interbreeding? Without reliable time control, these questions are unanswerable and unravelling the Paleolithic remains a distant and virtually unachievable goal.

Recent research in AMS dating has seen significant improvement in the situation, however. One of the main areas of improvement has been in chemical pretreatment and sample decontamination which has resulted in superior purification, particularly of bone proteins targeted for dating. We have been working on dating >100 sites covering the Middle to Upper Paleolithic transition across Eurasia. We have used optimized techniques of AMS dating as well as OSL dating, coupled with Bayesian modeling, to produce robust site chronologies. Combining results from absolute dating with paleo-genomics results in novel insights into what happened between 70 and 30,000 BP in Eurasia, as we will summarise in our presentation.

Higham, Tom [41] see Frouin, Marine
Higley, J. H. [35] see Adovasio, J. M.

Hilbert, Klaus

A History of Knowledge of the Amazonian Dark Earths

The anthropogenic origin of the Amazonian dark earths (Terra Pretas) has been a methodologically assured fact for 70 years. Especially during the last 30 years, Terra Preta have been scientifically investigated with increasing intensity and in an ever-widening context. Currently, the dominant concept guiding research is the idea of binding atmospheric carbon which artificially produced dark earths. The large-scale production of terra preta is said to be an efficient instrument to combat global warming. This talk attempts to present a history of the knowledge on Amazonian dark earths (terra pretas) focusing not only on scientific knowledge but also takes into account traditional indigenous knowledge. At the end, I show, that without indigenous knowledge, modern terra preta research would not exist. This has bearings for ethical evaluation of applied modern terra preta research.

Hildebrand, Elisabeth (Stony Brook University)

Dress Pins, Textile Production, and Women’s Economic Agency across Early Second Millennium Anatolia

Nearly seventy years of excavations at Kültepe have yielded a remarkable assemblage of material reflecting the rich and fluid daily lives of the Anatolians, Assyrians, and others who inhabited such a dynamic and cosmopolitan city. A diverse category of objects, megalith dress pins, has been recovered from burials at Kültepe and other Middle Bronze Age Anatolian sites, providing tangible connections to the ancient people who wore them. Previous scholarship has focused on the style and origin of these pins, generally associated with female adornment, but both the cuneiform and material records also allow for glimpses into the economic power they held for women during this period. For example, the Old Assyrian mercantile indicate that pins could function as working capital in times of need. Furthermore, the survival of their impressions on crescent-shaped loom weights across Anatolia also demonstrate their importance to the economic agency of women. Through a study of the various types of pins and their associated objects within the contextual framework provide by the texts, this paper will explore the multiple roles of these personal objects and analyze how both Anatolian and Assyrian women used pins to mediate the social, religious, and economic worlds in which they navigated.

Hill, Austin Chad [4] see Rowan, Yorke

Hill, Brett (Hendrix College) and Bernard Siquieros (Tohono O’odham Nation Cultural Center and Museum)

Exploring the Interaction of Culture and Technology in the Acoma Culture Province

The Acoma Culture Province is the geographic expanse of the ancestral homeland of the Pueblo of Acoma documented for adjudication through the Indian Claims Commission and through archaeological research. Pottery made during both the prehistoric and historic periods found within the Acoma Culture Province was made using crushed potsherds as an addition to the pottery clay. The practice of adding crushed potsherds represents a cultural choice for Acoma potters, a choice that has considerable time-depth. Pottery containing crushed pot sherds appears around A.D. 900 in decorated and
undecorated utilitarian vessels, a practice that continues today. The continued use of crushed pottery sherds as a component of Acoma ceramic technology represents an example of a conservative technology.

Hill, Erica (University of Alaska Southeast)  
[216] Women, Sex and Sacrifice in Moche Iconography
Moche iconography depicts women in ritual roles as priestesses, objects of sacrifice, and possibly as deities; however, the roles of ordinary women have received much less attention from archaeologists. This paper explores the nature of women’s power in Moche society as represented in iconography and as inferred from bioarchaeological data, contrasting the roles of women in elite and non-elite contexts. With the exception of elite women performing rituals, Moche ideology inextricably linked women’s power and status to the female body itself, primarily in sexual and sacrificial contexts.

Hill, Matthew E. (University of Iowa), Cerisa R. Reynolds (Aims Community College), James Mayer (GEI Consultants, Inc.) and John P. Laughlin (Wyoming State Historic Preservation Office)  
The Finley site is in the western Killpecker dunes in the Green River valley in southwest Wyoming, and consists of at least two Cody age bison bonebeds. For modern Paleoindian researchers, Finley still poses important questions and offers several potential avenues for research. The prior work with the Finley faunal remains, as well as our current investigations, demonstrate that the site is associated with an enormous collection of bison remains that are thought to have been killed on site or nearby. Our reexamination of the site combines a taphonomic-based zooarchaeological analysis of the bison remains from both components with additional field-based investigations of the geoarchaeological context of the bonebeds. This work is being undertaken in order to 1) improve our understanding of the natural and cultural formational histories of the deposits, 2) evaluate prior interpretations concerning site function and season of occupation, and 3) evaluate how the Finley site improves our understanding of regional Paleoindian chronosтратigraphy and paleoenvironments. Ultimately, our goal is to evaluate the validity of the prior interpretations of the site and consider the importance of the site to understanding the Paleoindian occupation of North America.

Hillman, Leaf  
[321] Discussant

Hillman, Lisa  
[321] Discussant

Hils, Kendall (University of Illinois at Chicago)  
[175] Networks of Power: Sandstone Temple Production in the Provinces of the Angkorian Khmer Empire
Anthropological research suggests that early states and empires frequently relied on state-sponsored building projects to produce networks of state control and identity on the landscape. The production and use of monumental architecture, however, can also be influenced by local agency, resilience and/or resistance, and degrees of socio-political autonomy. Rather than a homogenous blanket of state/imperial power, the result is a mosaic of core state control and local choices across the landscape. Focusing on the Angkorian Khmer Empire (9th to 15th c. CE), this paper employs a landscape network approach to investigate degrees of state control and evidence of intermediate elite power, thus providing a more dynamic perspective of the imperial landscape. These investigations are informed through an analysis of the assemblage of provincial sandstone temples, which were key loci for the negotiation of state and intermediate elite power within the Khmer Empire. Emphasis is placed on understanding the geographic distribution of temples, the acquisition of sandstone for temple production, and temple form and organization, as variations in these variables may reflect different intermediate elite strategies and levels of agenteive decision making.

Hilmer, Hilary (University of Alaska, Fairbanks)  
[250] Subsistence Practices at Healy Lake Village Site
Healy Lake Village site (XBD-00020), an important multicomponent site with occupations spanning the terminal Pleistocene and Holocene, provides an important opportunity to address fundamental issues of sub-arctic hunter-gatherers economies as they changed through time. To date, there are a limited number of sites in former Beringia with preserved faunal remains. Fourier transform infrared spectroscopy (FTIR) is an analytical method that can confirm the visual identifications of burned bone as well as provide the temperature of the heat source. This paper presents the results from a zooarchaeological analysis that used FTIR to address questions relating to cooking/processing practices in eastern Beringia (and the western Subarctic) for recent Athabaskans.

Hinojosa, Marlen, Claudia Garcia-Des Lauriers (California Polytechnic University Pomona) and Matthew Des Lauriers (California State University Northridge)  
[19] Los Horcones, Offering 1: The Archaeology of Music and Ritual on the Pacific Coast of Chiapas
Offering 1 from Los Horcones is an assemblage of figurine masks, whistles, rattles and vessels that offers an interesting opportunity for analysis that provides information of the auditory, olfactory, and visual experience of this small ritual. The offering, initially thought to be simply a collection of figurines and masks, were later discovered to be whistles—small musical instruments whose simplicity belies the importance of the meanings they encoded. Experimental archaeological analysis revealed that some made a variety of avian sounds, along with several other unidentified sounds. The whistles were played and recorded using a B-flat tuner that then allowed the recording of the range for each working whistle. Variations in notes and performed sounds varied based on whether the player approached them as whistles, flutes, or trumpets and the body size and lung capacity of the player. While the exact songs and notes of the whistles may never be fully elucidated, we were able to propose some potential applications in ceremony, and entertainment.

Hinojosa-Balino, Israel (Durham University) and Gerardo Gutiérrez (University of Colorado Boulder)  
Drone technology has become widely available, easy to use, and relatively inexpensive over the last four years, and archaeologists have embraced it eagerly. Apart from the technological breakthroughs of the UAV platform and its assortment of sensors, we need to interpret these data beyond the beautiful models and topographic measurements. In this paper, we use the concept of monumentality and compare three iconic sites in Central Mexico to understand how their architectural expression correlates with the ways they organize their societies and display their power.

Hinthorne, James [89] see Skowronek, Russell
Hiquet, Julien (Université de Paris 1 Panthéon-Sorbonne), Julien Sion (ArchAm-CEMCA) and Divina Perla-Barrera (USAC Guatemala) [80]

Households, Growth, Contraction, and Mobility at the Classic Maya Center of Naachtun

At Naachtun, extensive excavation programs carried out in monumental Group B, a compact set of three large elite clusters of residential compounds located in the site epicenter, and intensive test-pitting programs applied to the residential zones which surround the monumental core, have enabled us to understand the site occupation development during the Classic phases. We identify contraction, dispersal and expansion where and when most households units were occupied. We compare these space-time dynamics in epicentral Group B and surrounding urban residential zones, explore their articulation, and discuss possible intra-site population mobility. Although some of the dynamics resulted from royal-court elite attraction and urban planning, the permanence of a dense, post-dynastic occupation, and new housing practices in Group B indicate that people did not need rulers’ coercion to organize and modify their settlement in accordance with what they perceived to be their socioeconomic interests.

Hiquet, Julien [80] see Nondédéo, Philippe

Hirschman, Amy (West Virginia University) [169] Petrographic Perspectives on the Ceramic Complexity in the Lake Pátzcuaro Basin

Archaeologically known ceramic pastes from the Lake Pátzcuaro Basin, Michoacán, Mexico, involved long-lived paste recipes that have been identified both visually and via neutron activation. This paper focuses upon Late Postclassic Tarascan state-period ceramics (AD 1350–1525) and contextualizes new petrographic data within the regional geology and prior research in order to assess aspects of the longevity and complexity in potter’s paste choices within the basin.

Hirth, Kenneth (Penn State University), Alejandro Figueroa (Southern Methodist University), Alejandra Domic (Penn State University), Heather Thakar (Texas A & M) and Harry Iceland (Smithsonian institution) [59] The Esperanza to Middle Marcala Phase Subsistence Practices at El Gigante Rockshelter (11,000–7400 cal B.P.)

The earliest human occupation of the El Gigante Rockshelter in the highlands of western Honduras dates to the Early Esperanza phase at 11,010 cal B.P. This paper examines the perishable and imperishable remains from the Early Esperanza through Middle Marcala phase occupation from 11,010–7,430 cal B.P. and what they inform about human adaptation and forager subsistence practices in the highlands during this early period of Honduran prehistory.

Hirth, Kenneth [184] see Buckley, Gina

Hitchens, Gail [329] see Spikins, Penny

Hlubik, Sarah (Rutgers University), Russell Cutts (University of Georgia, Athens), David R. Braun (The George Washington University), Francesco Berna (Simon Fraser University) and Craig Feibel (Rutgers University) [41] Fire in the Early Pleistocene: Evidence for the Use of Fire by Hominins at the 1.5 mya Site of FxJj20 AB, Koobi Fora, Kenya

The Cooking Hypothesis contends that fire use became common in the Early Pleistocene and was part of a suite of characters that were associated with the appearance of Homo erectus. The morphological changes associated with H. erectus support this hypothesis. Archaeological evidence for the control of fire in this time period is generally sparse, and arguments for controlled fire at early sites have been controversial. Here we present evidence for fire use by early hominins at the open-air site of FxJj20 AB, Koobi Fora, Kenya. Bone and sediment exhibiting FTIR signatures consistent with burning at high temperatures have been recovered from a single horizon. A magnetic anomaly has been identified close to a cluster of artifacts. Micromorphological analyses indicate site formation processes with relatively little post-depositional modification. This is further supported by fabric analysis. The site is one of the earliest known sites, to date, with evidence for an association of fire and human activity. This validates a methodology for investigating early fire by highlighting the importance of using techniques geared toward identifying and verifying combustion features in open air contexts. This research was supported by the U.S. National Science Foundation, OISE awards 1358178 and 1358200.

Hockaday, William [182] see Roos, Christopher

Hockett, Bryan [47] see Goebel, Ted

Hocsman, Salomón [120] see Flegenheimer, Nora

Hodder, Ian (Stanford University) [1] Discussant

Hodgkins, Jamie [99] see Simeonoff, Sarah

Hodza, Paddington [42] see Arksey, Marieka

Hoff, Aliya [66] see Fletcher, Britanny

Hoffecker, John (INSTAAR) [182] A North American Plains Perspective on the East European Paleolithic

For historical reasons, the Middle and Upper Paleolithic record of Europe has been viewed largely through the prism of rockshelters in the southwestern corner of the continent. Europe is dominated geographically, however, by an immense plain that stretches from the Carpathians to the Ural Mountains, much of which is devoid of natural shelters. Vance Holliday has made a significant contribution to the study of soils, stratigraphy, and site-formation process in open-air Middle and Upper Paleolithic sites on the central East European Plain. More generally, he has enhanced our understanding of these sites by introducing a North American Plains perspective to their analysis and interpretation.

Hoffman, Christopher and Michael Black (University of California, Berkeley) [172] CollectionSpace at the Phoebe A. Hearst Museum of Anthropology: A Strategic Information Platform for Cultural Heritage Collections

Museums use collection management systems to manage metadata about objects in their collection and track transactions such as loans and exhibitions. At UC Berkeley however, museums are turning the open source CollectionSpace system into a strategic platform for research, education, and public service. The Hearst Museum of Anthropology is in the midst of a major effort to improve the quality of the data documenting its collection of approximately 3.8 million objects. With this improved foundation, the Hearst Museum and its partners in Research IT have turned attention to the most important priorities for cultural heritage information preservation, sharing, research and education. This case study will describe how the Hearst
Museum uses CollectionSpace and its partnerships with Research IT and the CollectionSpace community to accomplish these goals. Particular attention will be given to how the Hearst Museum and its community stakeholders have made decisions about when and how to share sensitive information such as field collection location and photos of sacred objects. The paper will conclude with the emerging challenges and opportunities that the Hearst Museum and its partners are considering, including building in support for managing and displaying 3D models and improving support for research, education, and public service.

Hoffman, Courtney [14] see Wright, Sterling

Hoffman, Sarah E. (University at Buffalo) [282] No Man Is an Island: Death and Burial on the Island of Haffjarðarey During the 13th century Iceland became a major hub of the North Atlantic fishing industry sparking international conflict over fishing rights between mercantile interests from Norway, Denmark, England, the Netherlands and Northern Germany. From ca. 1200—1563 the Catholic Church and cemetery on the island of Haffjarðarey served as the burial place for the large geographic region of Eyjahreppur in western Iceland. The church and cemetery were closed during the Lutheran Reformation and the island was subsequently abandoned. Folklore intended to support this abandonment appeared soon afterwards and generated a negative perception of the island as a place of death and danger. Early 20th century accounts considered Haffjarðarey an unlikely location for an important community gathering place due to difficulty of access and apparent isolation, however recent research has demonstrated quite the opposite. The medieval population of Eyjahreppur was engaged in the international fishing industry. Human remains exhibit pathological features suggesting they experienced the long-term impacts of unique local and global political, economic, and cultural influences. This paper discusses the human skeletal remains from the Haffjarðarey church cemetery and interpretations of community attachment (topophilia) and fear (topophobia) during a period of increasing global contact and conflict. [282] Chair

Hofman, Corinne L. (University of Leiden), Roberto Valcárcel Rojas (University of Leiden) and Jorge Ulloa Hung (University of Leiden) [275] Colonization, Transformation and Continuities in the Indigenous Caribbean The indigenous peoples of the Caribbean were the first to have suffered European colonization of the Americas. From the arrival of Columbus in 1492 the insular territories were transformed in a massive slave raiding arena in which the knowledge of so-labelled ‘indios’ was used and manipulated by the Europeans and transferred across the Caribbean Sea. Indigenous peoples were put to work in the goldmines and farms of Hispaniola, Cuba and Puerto Rico or in the pearl fisheries in Cubagua. On the other hand, in the Greater Antilles the encomienda system generated an intensive exploitation that disarticulated the indigenous societies and transformed their sociocultural practices. The influence of a forced African diaspora, and the concomitant Amerindian-African-European inter-cultural dynamics at play changed the indigenous Caribbean landscape forever. The impact of these initial acts of colonialism and the role played by the Amerindian populations in the colonial process are often discounted for and remain up until today a far neglected chapter in global history. Despite the infamous genocide that took place, indigenous cultural and religious continuities are strongly represented in today’s multi-ethnic and multi-cultural society of the Caribbean.

Hofman, Corinne L. [83] see Borck, Lewis

Hoffman, Courtney (University of Oklahoma) [143] Chair

Hofman, Jack (University of Kansas) and Barbara Crable (University of Kansas) [90] Cultural, Taphonomic, and Biogeographic Considerations of Black Footed Ferret at the Burntwood Creek Bison Kill Site, Central High Plains, USA Feature 15–1 at a 9,000 year old bison kill site in Rawlins County, northwest Kansas yielded remains of black footed ferret (BFF) and numerous other species. Here we summarize cultural and taphonomic factors related to the feature’s formation and review BFF biogeography for the early Holocene period in the central Plains region. The diverse fauna from this feature and its varied modifications may reflect special cultural behavior associated with the bison kill at Burntwood Creek. Both natural and cultural processes contributed to formation of this distinctive feature, and some elements may represent part of a “medicine” bundle.

Hoggarth, Julie (Baylor University) [147] Using Bayesian Radiocarbon Chronologies in Conjunction with Artifact Inventories to Reconstruct the Timing and Formation of Peri-abandonment Deposits at Baking Pot, Belize A variety of functions have been proposed for ‘problematic deposits’ across the Maya lowlands. All of the explanations have archaeological and temporal implications that have rarely been operationalized together to gain better insights into the nature of these deposits. In this presentation, we describe these features as ‘peri-abandonment deposits’, as all proposed explanations imply that the events that led to the formation of the deposits occurred around the time (or after) ceremonial centers experienced political and/or demographic decline. We use evidence from the site of Baking Pot as a case study to test multiple hypotheses for the formation of these deposits and to illustrate the utility of the combined use of Bayesian radiocarbon chronologies, calendrical dates of hieroglyphic texts, and artifact proportions to better understand the timing and artifactual composition of each feature. Finally, we discuss the temporal and depositional differences between multiple peri-abandonment deposits at Baking Pot and contrast these data with radiocarbon evidence for political and demographic decline at the site and across the broader Belize River Valley. [147] Chair

Hoggarth, Julie [14] see Harvey, Amanda

Holcomb, Justin [48] see Mark, Andrew

Holdaway, Simon [200] see Douglass, Matthew

Holland, Caitlin (Center for Mountain and Plains Archaeology, Colorado State University) [267] The Fremont Canyonlands: Granary Architecture in Northwestern Colorado With the introduction of horticultural practices in northwestern Colorado during the Formative era, the ruins of prehistoric masonry granaries represent a storage strategy utilized by the Fremont people to store equipment and maize near their communities. In northwestern Colorado, storage features such as granaries are primarily found in three geographic locations: Dinosaur National Monument, Skull Creek Basin, and the Canyon Pintado Historic District, all of which are located within a 1,200-square mile area. These high desert areas represent distinct ecological zones on the Colorado Plateau, with granary architecture reflecting the local environmental and social landscapes. This poster compares granary architectural data from several
INDIVIDUAL ABSTRACTS OF THE SAA 83RD ANNUAL MEETING

documented Formative era granaries to examine variability in construction style, material use, granary dimensions, and form between the three geographic clusters.

Hollenbach, Kandace (University of Tennessee)  
[94] The Volunteer Spirit: “Archaeology Volunteer Day” at the Archaeological Research Laboratory at UT-Knoxville
In January 2015, we instituted a monthly “Volunteer Day” at the Archaeological Research Laboratory at the University of Tennessee. Originally conceived as a way to increase outreach to the general public as well as prepare a large number of artifacts for curation, this activity has developed into a “citizen science” opportunity, where participants help collect data. Here we reflect on the positives and negatives of the program as we have implemented it over the past two years, with feedback from our volunteers. We also explore ways to develop it into a community-based participatory research project, incorporating additional participant groups (including students and descendant communities) into our corps of volunteers.

Hollesen, Jørgen [135] see Harmsen, Hans

Holliday, Vance (University of Arizona)  
[182] Discussant

Hollinger, Eric (Smithsonian Institution)  
[337a] Beyond Repatriation at the Smithsonian’s National Museum of Natural History
Congress intended federal repatriation legislation to go beyond removing collections from museums. They hoped that it would lead to new relationships between Native Americans and museums that would recognize the interests of all parties. The Anthropology Department of the Smithsonian’s National Museum of Natural History has worked, through its Repatriation Office and other programs, to collaborate with tribes and Alaskan Natives on projects that go beyond repatriation to include initiatives with 3D replication, traditional care, language revitalization, and cooperative curation. Repatriation is about fostering new relationships for the long term not the short term rush to meet a deadline or check a bureaucratic box.

Hollingshead, Anäliste (Florida State University) and Morgan Smith (Texas A&M University)  
[102] A Fabric and Spatial Analyses of the Artifacts Recovered from the Ryan-Harley Paleoindian Site (8JE1004) in North Florida
The Ryan-Harley site (8JE1004) is a Suwannee point site located in North Florida along the Wacissa River. Ryan-Harley is significant because it is the only archaeological site in the Southeast United States where diagnostic Suwannee material has been recovered in-situ within a discrete geological layer through extensive excavations. A broad faunal assemblage interpreted as dietary remains was also recovered from the same stratigraphic layer as the Suwannee material. Taxa identified include extinct Pleistocene species such as tapir, horse, giant tortoise, and muskrat. This association relatively dates Ryan-Harley to the terminal Pleistocene, most likely between 10,900 14C yr B.P. to ~10,500 14C yr B.P. The association of lithic and faunal material at the site is critical to the interpretation and proposed age of the site. We examine this association through fabric and spatial analyses of artifacts and faunal material recovered at the Ryan-Harley site to test the null hypothesis that the site represents an intact Suwannee campsite. We compare how cultural material accumulates due to post-depositional processes with how intact archaeological deposits are oriented in space to determine which case compares most favorably to the lithic and faunal material at Ryan-Harley.

Holloway, Caitlin (National Park Service; UA Museum of the North)  
[250] Hearth Features in High-Latitude Environments
The depositional context of many high-latitude archaeological sites often inhibits preservation of hearth features and associated organic remains. When preserved, subsurface hearth features provide insight into the role of plant resources in prehistoric hunter-gatherer economies. This research addresses questions of taphonomy, paleoecology, and prehistoric plant use with archaeobotanical analysis of hearth features from sites located in Yukon-Charley Rivers National Preserve and Gates of the Arctic National Park and Preserve. The results inform on the deposition and preservation of archaeobotanical remains in high-latitude environments and contribute to our understanding of arctic and subarctic forager exploitation of plant resources.

Holloway, Richard (Dept. Biological Sciences NAU) and Karl Laumbach (Human Systems Research Inc.)  
[290] Macrobotanical and Pollen Analysis of the Canada Alamosa Project
Analysis of macrobotanical materials from the Cañada Alamosa Project began with materials from the 1999 field season and continued to materials from the 2011 season. The samples were retrieved from four sites (LA 1125, LA 2292, LA 88891, and LA 88889). A total of 1,359 samples were analyzed for this project. In total, 223 individual specimens of corn cob fragments were examined via digital electronic photography (Table 2). A total of 3,052 individual cupules provided measurements for our database which was then used to compare types of remains. New methods were developed during this project, which allowed us to obtain large quantities of measurements on the charred cob fragments without harming the specimen. The improvement of digital electronic photography allows measurements to be taken off the digital pictures instead of directly on the specimen. All cobs examined were photographed and then measurements taken on the photos.

Holly, Donald [34] see Wolff, Christopher

Holmberg, Karen (New York University)  
The role of performance in disaster risk reduction provides the focus for evocative recent discussions of somatic experience, embodied knowledge, and climate change (e.g., Cosgrove and Kelman 2017). In this paper, I’d like to expand this perspective on the perception of dynamic environments through consideration of how material residues in caves link to large-scale transformations in the complexly entwined natural and cultural landscapes outside of the caves. I draw on four seemingly disparate cave contexts: a 7,400 year stratigraphic sequence in Banda Aceh, Indonesia that extends the record of tsunami events beyond what oral history provides; a preceramic rock shelter in western Panama with an unusual lithic cache interpreted as evidence for the earliest example of shamanistic practice in Central America; a coastal cave in northern Patagonia, Chile filled with prehistoric rock art and the bones of a child; and the paleolithic caves of Matera, Italy, which helped secure the city’s designation as a European Capital of Culture for 2019. In each case, whether in prehistoric or contemporary contexts, I posit that acts and actions performed in caves link the performers literally to a scale that is geological in span and chthonic in association.

Holmes, Charles (University of Alaska Fairbanks)  
[250] Discussant

Holmes, Charles [50] see Krasinski, Kathryn
INDIVIDUAL ABSTRACTS OF THE SAA 83RD ANNUAL MEETING

Holyoke, Kenneth (University of Toronto)
[199] Persistent Places in the Prehistoric Wabanaki Homeland: Understanding the Role of Lithics in Interaction, Exchange, and Territoriality on the Maritime Peninsula
This paper presents a method for addressing questions of prehistoric Wabanaki territories and territoriality, human movement and exchange, and how persistent places in the prehistoric landscape of the Lower Saint John River (LSJR) shaped ancient Wabanaki ontology, and so too, the archaeological record. Persistent places like bedrock lithic sources may shape human movement; however, patterning in the distribution of stone tools may provide more than just settlement and exchange information. The bedrock source for Washadamook multi-coloured chert (WMCC) lies nearby what has been historically viewed as a boundary between the traditional territories of the Mi’kmaq and Wolastoqiyik people (e.g., Ganong’s 1899 “Map No. 12”). WMCC is a ubiquitous stone tool material found throughout the LSJR sub-region during the Maritime Woodland Period (ca. 3000–500 BP) and appears as a (presumably) traded material in assemblages outside of the LSJR. Thus, the location of the bedrock source may have facilitated social interaction between different ethnic groups. The material has a diverse range of colours and qualities for which preferences may have changed over time. Further, WMCC, at least within the LSJR, may have been distributed differentially over time into the late pre-Contact period, and potentially on into the protohistoric period.
Holzman, Cayt [241] see Hermitt, Elijah J.

Homsey-Messer, Lara [52] see Burgess, Harley

Hoober, Ellen (Walters Art Museum)
[70] Cultural Exchange in Times of Crisis: A Historical Perspective from Mexico of the 1930s and ’40s
During the depths of the Great Depression and prior to and after World War II, Mexico’s Museo Nacional de Antropología undertook exchanges, or canjes, of archaeological pieces with a variety of museums, disseminating small portions of its collection across the nation and the world. Actual trades of archaeological works were completed in the early 1930s with museums in Yucatán, Mexico; Lima, Peru; and New York and Chicago in the United States. There were more limited exchanges of casts with museums in Berlin and Brussels. In 1948, a particularly large swap was completed with the Brooklyn Museum. Other interchanges were contemplated, but apparently not completed, with museums in Colombia, Madrid and Philadelphia. Many of these trades were linked by the involvement of Alfonso Caso, the most famous Mexican archaeologist of his generation, and an important figure in archaeological bureaucracy of Mexico of the 1930s and ’40s. What were the kinds of objects that Mexico’s National Museum offered to and received from these other museums? What were the motivations for and circumstances of such exchanges? The incentives behind such exchanges seem to have transcended the needs of the Museo’s collection, and were related closely to cultural diplomacy at the time.

Hood, Larkin (The Pennsylvania State University)
[313] You Read It; Don’t Forget It: Designing Activities That Help Students Learn
Ideally, exercises and activities for an open textbook should encourage students to engage with and apply the information beyond a single course. This session provides a reflection on the process of designing resources that activate student motivation to engage with content, and provide checks on student understanding (for students and instructors). Activities are also a means for students to practice retrieving what they have learned so they can use it in other situations, and provide ways for students to use study approaches that work for learning archaeology, which can be different from approaches they have learned for other subjects.

Hoogland, Menno (Leiden University), Angus Martin (Leiden University) and Corinne L. Hofman (Leiden University)
[123] Reimagining Creole, The Deep History of Mixed Identities in the Windward Islands, Lesser Antilles
The Lesser Antilles are known as an arena of to- and froing of peoples from different areas of the insular Caribbean and coastal mainland areas of south America during its entire pre-colonial history. Migration, and intensive networks of human mobility and exchange of goods and ideas have created diverse ethnic/cultural communities across these small islands. These, coupled with constantly shifting alliances among the various peoples have resulted in what can only be described as Creole communities. This paper will examine the ideal of Creole in terms of the mixed identities that emerged among the Windward Islands of the Lesser Antilles in pre-colonial times and we will look into the historiographical and emerging archaeological information we have on formation of Kalinago and Garifuna identities during early colonial times.

Hoogland, Menno [323] see Pagan-Jimenez, Jaime R.

Hoopes, John (University of Kansas)
[291] Fantastic Archaeologist: Stephen Williams and the Perennial Task of Debunking Pseudoarchaeology
The history of archaeology is replete with assertions about lost tribes, sunken continents, and ancient aliens in the context of failed hypotheses, deliberate hoaxes, and intentional frauds. Williams chronicled these, in the process helping others hone skills in critical thinking. New technologies proliferate spurious explanations of the past that archaeologists must continually address. As the Talmud says, “It is not your responsibility to finish the work of perfecting the world, but you are not free to desist from it either”. This paper offers strategies based on Williams’ methodology, ones based in meticulous historiography and evaluations of the cultural and historical contexts of specific individuals, their possible motivations, and critical examination of the specific paradigms, theories, and evidence that conditioned their claims. Williams demonstrated that many myths promulgated today have deep roots in American history and that familiarity with this background is a valuable element of successful, ongoing, scholarly refutation of claims from the “wild side” on the fringes of science.

Hoover, Corey (Pontificia Universidad Católica del Perú) and Patrick Mullins (University of Pittsburgh)
[68] Exploring Classification Methods for Drone Based Imagery on the Peruvian North Coast
With the growing availability of high-resolution aerial imagery, capabilities for scalability of land-use analyses also become more of a possibility to researchers. Drones are becoming more affordable with sensors capable of capturing imagery at sub-meter resolutions. Ground cover classification allows further investigation into land use, disturbance and site integrity. This paper discusses the use of supervised and object based classification methods using image analysis software and high-resolution imagery obtained from unmanned aerial systems. It also discusses the use of multispectral imagery in drone-based survey applications and capabilities for classification based on varying image resolutions. Best practices for maintaining resolution and image integrity are discussed along with processing capabilities based on project goals. A training area located near Peru’s North Coast is used to create classification parameters, which is then tested against similar areas on the North coast. Utilizing this method, we are able to classify land use, disturbances, and cultural sites with some limitations.
Hopkins, Maren (Anthropological Research, L.L.C.)

[131] **Archaeology and Ethnohistory of the Western Papaguería: Let’s Not Forget the People**

The O’odham and other tribes of southern Arizona and northern Sonora have occupied the Western Papaguería since time immemorial. This dry and desolate corner of the Sonoran Desert is home to rich histories and living traditions that have left their subtle marks on the land, and that archaeologists have continuously tried to identify, describe, and interpret. For too long, ethnographic and ethnohistoric records from this region have run in parallel to the archaeology; however several recent studies demonstrate the value in merging these accounts to construct a comprehensive picture of people on the land that includes perspectives about their own experiences and worldviews. Work on the Barry M. Goldwater Range, Organ Pipe Cactus National Monument, and in the proposed area of the Great Bend of the Gila National Monument, draws on ethnographic and ethnohistoric accounts to understand the archaeology, and remains archaeology to make sense of the longevity and fortitude of living Native American traditional cultural practices. Following, and hopefully adding to, the legacies of Father Kino, Carl Lumholtz, Ruth Underhill, Julian Hayden, and countless others who devoted themselves to the Western Papaguería, this work reinforces the significance in working with the people who are behind the material record.

Horta-Cook, Elizabeth [105] see Finley, Judson

Hopkins, Maren [72] see Price Steinbrecher, Barry

Horn, Sherman (Grand Valley State University) and Anabel Ford (University of California, Santa Barbara)

[302] **Through a Scanner...Darkly? LiDAR, Survey, and Mapping at the Ancient Maya Center El Pilar**

Survey at the ancient Maya center El Pilar, along the border between Belize and Guatemala, has incorporated LiDAR imagery since 2013, allowing expansive—yet targeted—coverage of settlement beyond the monumental core. Successive field seasons have revealed a complex picture of landscape modification, resource extraction, and settlement concentration in different micro-environmental zones around the city center. Our fieldwork in 2017 had three foci: 1) explore and map the Amatul Supercluster, a grouping of domestic and monumental structures identified in LiDAR imagery west of the monumental core; 2) remap the minor ceremonial center K’um, where LiDAR signatures suggested a more complex site than was recorded in the 1990s; and 3) survey the area between these centers and validate settlement remains suggested by analysis of LiDAR imagery. We present our results and examine relationships between settlement, landscape modification, and resource use around El Pilar. We further explore the differences between what LiDAR returns indicate and what is discovered by putting survey boots on the ground. Our results suggest new survey protocols, such as those we present, are necessary to fully realize the power of LiDAR as a survey tool in the Maya Lowlands.

Horning, Audrey (College of William and Mary)

[327] **Ethics, Positionality, and Pragmatism: Archaeological Approaches to Identity and the Role of Archaeological Practice in Conflict Transformation**

The ‘ontological turn’ in archaeology encourages the decentering of the human subject, and the longstanding focus upon identity, in favour of exploring material relationalities. While the discipline may congratulate itself for finally finding a way out of the twin traps of Enlightenment dualism and the humanism which underpins neoliberal geopolitics, it runs the risk of becoming even less relevant to society at large at a time when global conflicts are widely understood through the lens of competing and contested identities. Such identities are often framed as rooted in archaeological pasts as much mythical as material, but no less efficacious in the present. Drawing from experience in Northern Ireland, the discussion will focus upon the contribution of pragmatic philosophy in not only shaping ethical archaeological practice in conflict and post-conflict setting, but allowing for a significant and socially valuable role in conflict transformation.

Horowitz, Mara (Purchase College SUNY)

[40] **Performative Aspects of Early Monumental Architecture at Late Bronze I Phlamoudhi-Vounari, Cyprus**

The small (1 hectare) site of Phiamoudhi-Vounari was built in Late Cypriot IA:1 and abandoned early in Late Cypriot IIA, a lifespan of c. 200 years. This paper presents a 3D model and spatial analysis suggesting that the Vounari mound functioned as a stage during community gatherings (and greeting visitors). Vounari’s plan is unique on Cyprus: a likely man-made, eight-meter-high mound topped with a sequence of superimposed structures. Initially built with open access to the summit of the mound, the monumental plastered north façade, double gateway, 16 x 16m stone façade platform, and circuit wall added to Vounari in Phase IV restricted access to the hilltop as well as creating an imposing effect. Using a viewshed approach, this paper examines the monumental north façade and broad plaster ramp as seen from the seaward approach. As a comparator to Vounari, the New World platform mound phenomenon is reviewed. These sites also arguably functioned as stages for ceremonial community activities that reinforced the corporate identity even as an elite class was beginning to emerge and increasingly circumscribe the space for themselves. This analysis is relevant to the ongoing debate about the first emergence of complex society in Cyprus.

Horowitz, Rachel (Tulane University)

[140] **Chert Extraction and Production in Resource-Rich Regions: Chert Economies among the Late Classic Maya of Western Belize**

Global studies of raw material extraction permit us to examine the methods and involvement of different individuals in the extraction and production of lithic materials. One variable which can influence the organization of extraction and production is the abundance or scarcity of raw materials in a region. This paper presents a 3D model and spatial analysis suggesting that the Vounari mound functioned as a stage during community gatherings (and greeting visitors). Horowitz’s paper addresses the extraction and production of chert materials among the Late Classic Maya (A.D. 600–900) in the lowland Maya region, specifically the Western Belize, a chert-rich area, to address the relative economic involvement of varying individuals in those processes and how these activities linked people throughout the region. Specifically, this paper compares the extraction mechanisms and reduction sequences from a chert quarry and production area, Callar Creek Quarry, and a nearby production area, Succotz Lithic Workshop, using detailed lithic attribute and aggregate analyses to examine regional trends in lithic production and the economic activities involved in these trends. This paper finds that householders living adjacent to chert source areas produced specialized lithic materials for exchange through a range of mechanisms, including reciprocal and market exchanges, thus creating regional connections. The density of chert sources in the region influenced both people’s abilities to produce tools but also the mechanisms of their exchange.

Horton, Elizabeth [168] see Beahm, Emily
INDIVIDUAL ABSTRACTS OF THE SAA 83RD ANNUAL MEETING

Horton, Shannon (University of Nevada, Las Vegas)
[225] What the Ceramics Tell Us About the Inhabitants of the Steve Perkins Site
The purpose of this research is to examine the ceramic assemblage present at the Steve Perkins site, located in the lower Moapa Valley of southern Nevada. A full analysis of the ceramic assemblage has never been undertaken. Thus the goal of this research is to fully analyze the assemblage. Thereby providing more information on the lifeways of the Virgin Branch Puebloan (VBP) people residing at the Steve Perkins site. In addition, the examination of possible trade wares will also help to better understand the VBP’s extensive distribution network that began to increase considerably during the Pueblo II period.

Hoskins, Andrew J. [92] see Martin, Erik

Hosoya, Leo Aoi [24] see Owlett, Tricia

Houk, Brett A. (Texas Tech University)
[147] “Problematic Deposits” at Chan Chich, Belize
The Chan Chich Archaeological Project has documented two types of terminal, above floor “problematic” artifact deposits in a number of different locations and contexts at the site of Chan Chich, Belize. The first type comprises light scatters of “exotic” ceramics and other artifacts on the steps to examination of possible trade wares will also help to better understand the VBP’s extensive distribution network that began to increase considerably during the Pueblo II period.

Houk, Brett A. [173] see Booher, Ashley

Houk, Brett A. [30] see Gallareta Cervera, Tomás

Houle, Jean-Luc [3] see Parrish, Deborah

Housse, Romuald (Université Paris 1—Panthéon Sorbonne)
[75] Beyond the Wall: Defensive Arrangements, Conflicts and Coexistence Inside an Andean Oasis during the Late Intermediate Period (1100–1450 AD)
Located on the western foothills of the Andes, in the region of Tacna, the study area seems to have been densely occupied during the Late Intermediate Period (1100–1450 AD) as the recent archaeological research carried out in the area has demonstrated it. The many agricultural terraces and irrigation canals, as well as the numerous residential settlements, some of which are fortified, seem to demonstrate a strong desire for control and management of resources among the different groups occupying the area. Indeed, this region is known to be one of the many archipelagos of the Andean verticality and, on the northern margins of the Atacama desert, it can be also considered as a real oasis where different groups of people lived to harness resources together.

Houston, Stephen [248] see Alcover, Omar

Hovezak, Tim (National Park Service), Gary Ethridge (National Park Service) and Gay Ives (National Park Service)
Site preservation has been an essential function at Mesa Verde National Park for a full century as well as a major prerogative of the National Park Service since its very inception. Early archaeological investigations at the park and attendant preservation efforts were instrumental in the definition of Ancestral Pueblo culture history by players who themselves were instrumental in the development of the science of North American archaeology. This presentation chronicles some of the remarkable accomplishments of these efforts, the evolution of preservation theory and practice, and contributions of the key players.

Hovezak, Tim [226] see Ives, Gay

Howe, Ellen [139] see Thibodeau, Alyson

Howell, Cameron (ERM)
[81] Ritual Circuits and the Distribution of Exotic Sherds in Hopewell Contexts
The exchange of exotic goods between disparate geographic and cultural groups across the Midwest and Southeast is a hallmark of the Hopewell Period. Ceramics Are recognized by archaeologists as an important component of this interaction sphere. This exchange is usually conceptualized as whole vessel distributions across the landscape. In this paper, it is posited that sherds could be the unit of exchange instead. Using ritual circuits as a theoretical framework, this preliminary paper seeks to lay a foundation for how sherds can be reinterpreted as imbued objects on their own, and representative of complex social interactions during the Hopewell Period.

Howey, Meghan (University of New Hampshire)
[133] Mishipishu and Danger in the Inland Waterway Landscape of Northern Michigan
The Inland Waterway is a series of lakes, rivers, and streams that creates an inland route between Lakes Michigan and Huron. During the 1970’s, Lovis helped lead the NSF-funded Inland Waterway Project which involved survey and test excavations. The results of this research have been vital in advancing understandings of hunter-gatherer-horticulturalist social, economic, and ideological processes in the region and beyond. In a 2001 article, Lovis argued a set of clay products found at the Johnson site, a Late Woodland site from the Inland Waterway Project, were clay effigy representations of bear and Mishipishu. In this paper, inspired by this work, I examine a set of clay products recovered from other sites in the Inland Waterway region as similar possible Mishipishu effigies. Mishipishu is a complexly powerful, seductive, and dangerous underwater panther known as the head of all water spirits. Ethnohistoric accounts indicate this manitou was a malevolent figure in dreams of hunters as well as one that received special prayers for
INDIVIDUAL ABSTRACTS OF THE SAA 83RD ANNUAL MEETING

Howie, Linda (HD Analytical Solutions / The University of Western Ontario), Jillian Jordan (University of New Mexico, Albuquerque) and Heather McKillog (Louisiana State University, Baton Rouge) [95] Mineralogy without Minerals: A Proposed Methodology for Reconstructing the Original Compositions of Highly Altered Ceramic Bodies Using Thin Section Petrography

The rock and mineral fragments present in archaeological pottery, whether naturally occurring in the clay component or intentionally added as a temper, often serve as the primary geologic basis for provenance ascertainment in petrographic analysis. In certain contexts, however, the original compositional characteristics of pottery have been highly altered through technological or postdepositional processes. In these situations, accurate characterization and sourcing of original raw material ingredients must be based on a wider range of microscopic attributes than the rock and mineral assemblage alone. This is especially the case when diagnostic aplastic components have been completely removed.

We present two case studies of Late Classic Maya pottery from archaeological sites in Belize in which the original mineralogy of the raw material ingredients and paste recipes were reconstructed in the complete absence of actual rock and mineral fragments. We discuss the factors contributing to the removal of these essential fabric components, which are different in each case, and their identification. We propose a methodology for the reconstruction and description of the original compositions of highly altered ceramic bodies using a descriptive systems approach that integrates an appropriately broad range of microstructural and textural criteria, which are oftentimes otherwise ignored.

Howie, Linda [95] see Ford, Anabel

Howland, Matthew (UCSD Anthropology Department) and Thomas E. Levy (UCSD Anthropology Department) [238] Digital Deforestation: DTM Generation with Agisoft Photoscan

Image-based Modeling (IBM) is an increasingly-applied technique for field archaeologists for generation of high-resolution spatial data. IBM is effectively and easily applied for generation of Orthophotographs and Digital Surface Models (DSMs). Yet raw DSMs are not suitable for analysis or mapping purposes in vegetated environments due to the fact that they contain measurements of trees, bushes, and even architecture, ancient and modern. Archaeologists often instead require Digital Terrain Models (DTMs), showing only the surface of the underlying earth, for cartography or volumetric calculations. Fortunately, the popular IBM software package, Agisoft Photoscan, contains point cloud classification functionality, allowing researchers to categorize points according to their location or color. By doing so, users can classify and then disregard vegetation in generating elevation models, and in doing so produce a true DTM without the need for complex GIS manipulation. This poster displays an Agisoft-based DTM-generation workflow, using the Mycenaean site of Kastrouli, Greece, as a case study.

Howland, Matthew [68] see Liss, Brady

Hoxha, Timothy [73] An Archaeological Analysis of Identity as Presented in Southwestern Indigenous Rock Art

Rock art panels in the American Southwest contain defining markers of Archaic, Hohokam, Anasazi, Fremont and Historic Ute social practices. This paper will employ archaeological social theory and various communication theories to decode tribal information, including identity, that indigenous people recorded on rock surfaces.

Through case study analysis of particular physical characteristics for several rock art panels, this paper will analyze their potential applications as ancient communication platforms. It will compare, as evidence, shared characteristics between modern and ancient aboriginal cultures, such as matriarchal social values; religious practices, including dance ceremonies and pilgrimage rituals; and political identity formation via the development of tribal states.

This paper will use linguistics and semiotics theories to illustrate ways in which indigenous rock art sites may have:

1) Showcased tribal council leadership through defined characterizations of political and social roles;

2) Instructed populations in visual communication literacy to publicize and interpret significant events;

3) Cultivated tribal thinking to encourage conformity through social and ceremonial participation; and

4) Displayed advancements in technological communication.

Assessing rock art through the lens of archaeological social theory and various communications theories can provide unique insights into the social practices that defined ancient indigenous life in the American Southwest.
INDIVIDUAL ABSTRACTS OF THE SAA 83RD ANNUAL MEETING

Hoyle, Alesia (University of Texas at San Antonio) and Sonia Alconini (University of Texas at San Antonio)

[207] Water Management, Pastoralism and Settlement Shifts in the Andean Apolobamba Region

The qochas of the high-altitude Bolivian Apolobamba Puna region had a pivotal importance in the local agropastoral economies. Fed by snow melt and inner water sources, the qochas formed a complex hydrological system along the rich marshes. Although we do not know their origins, some of these qochas were modified during the Late Intermediate period, and a network of canals expanded in order to accommodate increasingly specialized pastoralism. Later the Inka arrival prompted specialized agriculture and pastoralism in the hands of increasingly diverse ethnic groups. We explore these changes by comparing the shifts in the size and settlement distribution around the qochas, and the symbiotic relations maintained between farming and pastoral communities along the ecological spectrum. This information will be useful to assess the different forms of social integration that such groups maintained, the archaeological evidence of ayllu-like organizations, and the importance of qocha systems in the reorganization of the landscape.

Hranicky, Jack [81] see Hranicky, William

Hranicky, William and Jack Hranicky (Virginia Rockart Survey)

[81] Paleoamerican Archaeology in Virginia

This illustrated paper presents over ten years of early American research in Virginia and Maryland. It covers 12 pre-Clovis sites, a summary of hundreds of Pleistocene/Early Holocene artifacts, and relies on various professional papers on this topic. It discusses the change over from blade/core technology to biface/core technology around the Younger-Dryas geological event. The paper shows artifacts that have not been seen in the archaeological literature. Several ongoing site investigations are shown showing volunteers. A prehistoric calendar is suggested which argues for a 10,000 years Pleistocene occupation in Virginia which starts with the now famous Cinmar bipoint. There are six sites in the Middle Atlantic area with date around or older than 16,000 years.

Hreinsson, Viðar [167] see Hicks, Megan

Hren, Michael [177] see Brittingham, Alexander

Hritz, Carrie (National Socio-Environmental Synthesis Center, University of Maryland)

[247] Archaeology as Actionable Science on Climate Change: Lessons from Interdisciplinary Collaboration

Within archaeology, it is widely assumed recognized that the field has much to offer present and future efforts to address climate change. From an archaeological perspective, this may be directly through data, improved models of human adaptation, building or preserving modern connections to place, to name a few. However, to date these have not been well-incorporated into federal efforts to address climate change, largely as a result of a lack of systematic engagement. To address this gap for archaeology and other social sciences, in 2016 the US Global Change Research Program (USGCRP) undertook an effort to engage four underrepresented social science disciplines to support preparation of the fourth US National Climate Assessment and other ongoing federal work. This paper presents the experiences of three archaeologists and one anthropologist involved in this project and an assessment of what worked, what was a challenge, and recommendations for improving the art of connecting study of the past to actionable government results for global climate change.

[247] Chair

Hronec, Laura (Bureau of Land Management, Roswell Field Office)

[261] Chair

Hronec, Laura [222] see Waggle, Tawnya

Hruby, Julie (Dartmouth College)

[298] Building a Statistical Model to Evaluate the Sexes of Ancient Greek Fingerprints

While fingerprint impressions have been used archaeologically to approach a range of cultural questions, the methodologies developed to date tend to be labor intensive, statistically unsophisticated, or require large numbers of complete prints. Recently, numerous quantitative print attributes that correlate with sex in modern populations have been discovered, almost always from two-dimensional data. It is probable that there are additional, yet-unrecognized features that correlate with producer attributes, especially if we include three-dimensional data. This project is a collaboration between an archaeologist and two professional mathematicians, with the goal of building a mathematically rigorous model for sexing ancient prints. The reference sample upon which it is based is a set of high-resolution 3D scans of fingerprint impressions left by modern Greek potters of both sexes; they were chosen on the basis that they are the closest population group, both genetically and occupationally, to their ancient predecessors. A scan of a print provides a high-resolution representation, akin to a digital elevation map of the topography of the print, including ridge patterns, overall size, shape, and depression depth. We plan to use high dimensional multivariate statistical techniques to develop informative metrics that show high predictive power for the sex of the imprint maker.

Hruby, Zachary (Northern Kentucky University)

[330] Obsidian Trade at the Edge of the Maya World

The position of Vista Alegre at the Northeastern edge of the Yucatan Peninsula, a gateway between the Caribbean and the Gulf of Mexico, made it a strategic location for circumpeninsular maritime trade in Pre-Colombian times. A robust sample of obsidian artifacts from the Terminal-Postclassic transition increases our understanding of trade relations between the eastern and western sides of the Maya world. Technological and source analyses of obsidian artifacts from the site are presented to fill in gaps in our knowledge, not only of Terminal and Postclassic trade, but also first evidence from Early Classic and Preclassic deposits.

Hrynick, Gabriel (University of New Brunswick)

[199] The Devil's Head Site in Maine: The Organization of the Protohistoric Wabanaki World

Archaeological studies of the Protohistoric period in Maine and the Maritimes have emphasized cosmology implicitly through their focus on copper kettle burials. Archaeologically, copper kettle burials may be the only truly diagnostic archaeological manifestation of the Protohistoric period in this region. The Wabanaki ethnographic record reveals that seemingly mundane activities—the organization of space, the disposal of animal remains, for instance—were also central to Wabanaki relational ontology. The Devil’s Head site, located on the St. Croix River, in the Passamaquoddy Bay region of Maine (the “Far Downeast”), has yielded features with Protohistoric radiocarbon dates, a rarity on the Maritime Peninsula, as well as Late Maritime Woodland features. In this paper, I employ the organization of space and the disposal of food remains at Devil’s Head to consider changes and continuities in cosmology from the Late Maritime Woodland to the Protohistoric period.
Hrynich, Gabriel [84] see Betts, Matthew

Hsu, Teresa (Smithsonian Institution), Nawa Sugiyama (George Mason University), Leila Martinez-Bentley (George Mason University) and Mónica García Provencio (Escuela Nacional de Antropología e Historia, Mexico) [293]  
Zooarchaeology and Bioarchaeology: Ceremonial Feasts and Human Caches at Plaza of the Columns Complex, Teotihuacan  
Preliminary analyses of the zooarchaeological assemblage from the Plaza of the Columns Complex illustrate a snapshot into past human activities such as specialized ceremonial events and faunal acquisition strategies for food consumption. The fauna from this complex, located just northwest of the Sun Pyramid, add to the database of forty years of archaeofaunal exploration throughout Teotihuacan. Here, we focus upon animal species distributed among four areas to understand the economic and ritual activities that took place in this complex. Results from our analyses revealed intra-site variation among the general debitage fills and areas used for human caching and burnt offerings. One front, in particular, located along the Avenue of the Dead, featured a high concentration of human remains. These remains exhibited cranial deformation and some also teeth modifications atypical for Teotihuacan. Even further, one mound excavation revealed a burnt offering site where the zooarchaeological assemblage was predominately lagomorph and avian remains, mainly that of cottontail rabbit and partridge. High volumes of these easily managed species suggest the offering was representative of a ceremonial function like a feasting event, and furthermore, provides evidence that the Teotihuacanos were provisioning and managing these animal species for larger purposes.

Hu, Lorraine (Washington University in Saint Louis), Fiona Marshall (Washington University in Saint Louis), Henry Saitabau (National Museums of Kenya), Angela Kabiru (National Museums of Kenya) and Stanley Ambrose (University of Illinois Urbana-Champaign) [99]  
Pastoral Neolithic Mortuary Site Sedimentology at Noomparrua Nkosesia, Kenya  
Mobile pastoralism was the earliest form of food production in eastern Africa. The spread of pastoralism in Kenya c. 5000–1200 BP involved peoples with diverse subsistence patterns and material culture repertoires. However, little is known about the social landscapes and mortuary practices in southern Kenya. The mosaic of Pastoral Neolithic burial traditions across Kenya is diverse, ranging from monumental pillar sites to the north to cairns and rockshelter cemeteries to the south. In 2016, members of a Maasai community in the Loita Hills discovered a unique Pastoral Neolithic mortuary site named Noomparrua Nkosesia (GxJg2). This rockshelter held the remains of five cremated individuals, approximately 90 ground stone bowls and 44 obsidian artifacts, but no grindstones. We report on the chronology, stratigraphic profile, and formation processes of this site. Particle size, magnetic susceptibility and FTIR analyses demonstrate the presence of distinct layers of ash and red ochre at the site. Our analyses provide insight into mortuary practices clearly distinct from those at Elmenteitan cemitation sites such as Njoro River Cave.

Hua, Quan [175] see Hendrickson, Mitch

Huanan Oros, Oliver [224] see Whitlock, Bethany

Huang, Cindy Hsin-yee (University of Victoria), April Nowell (University of Victoria) and Leslie Van Gelder (Walden University) [118]  
Tracing Ice Age Artistic Communities: 3D Digital Modeling Finger Flutings  
Finger flutings are lines and markings drawn with the human hand in soft cave sediment in caves and rock shelters throughout southern Australia, New Guinea and southwestern Europe, dating back to the Late Pleistocene. Two decades ago, Kevin Sharpe and Leslie Van Gelder developed a rigorous methodological framework for the measurement and analysis of finger flutings that allows researchers to identify characteristics of the creators, such as age, sex and group sizes. However, despite a comprehensive framework of study, data collection is still reliant on in-field measurements and is often constrained by physical challenges within the caves. With advances in technology, new methods of digital documentation are emerging. Creating three-dimensional models of finger fluting panels would allow for off-site measurements and other forms of analysis. This paper presents the results of an experimental archaeology project that tests three different 3D scanning techniques to determine the most appropriate method for the documentation of finger flutings based on factors such as portability, cost, efficiency, accuracy, as well as other challenges present in cave and rock shelter settings. A consistent method of 3D documentation for finger flutings will allow researchers to document sites globally and give rise to new perspectives and questions.

Huang, Jiawei (Pennsylvania State University, Department of Geography), Claire Ebert (University of Pittsburgh, Center for Comparative A), Jan Oliver Wallgrün (Pennsylvania State University, Department of Geogr), Jaime Awe (Northern Arizona University, Department of Anthrop) and Alexander Klippel (Pennsylvania State University, Department of Geogr) [101]  
Immersive Augmented and Virtual Reality for Archeological Sites Exploration and Analysis  
Immersive technologies such as virtual reality (VR) and augmented reality (AR), in combination with low cost yet high quality photogrammetry techniques, are beginning to change the way that archaeologists understand space and place. The availability of affordable immersive technologies is dissolving natural boundaries of space and time, and offering new ways of communications. The maturity of existing software environments such as Unity additionally allows for integrating spatial analysis tools into immersive environments, boosting archaeological research. We present the results of recent field work at the ancient Maya site of Cahal Pech, located in the Belize Valley of west-central Belize. We used a range of environmental sensing technologies, 3D modeling (e.g., structure from motion mapping and hands-on modeling) and 360° photography/video急需的architecture to create an immersive experience for Cahal Pech (for an overview see: http://sites.psu.edu/archaeology/). Importantly, we developed a field protocol that could be implemented at other archaeological sites to allow researchers to view, interact with, and analyze data both on and off-site immersively. Our goal is to create a comprehensive suite of immersive applications for important Maya sites across Belize to enhance site visits, enable immersive tours and virtual time travel (VTT), and create immersive archaeology workbenches for researchers.

Hubert, Erell (Montreal Museum of Fine Arts) [216]  
Moche Women: Multiple Realities and Alternative Powers  
The growing breadth of data coming from scientific excavations of Moche sites in different valleys along the north coast of Peru has led to major advances in our understanding of the diverse ways of being Moche as well as the complex relationship between religious and political powers. How gender relations played into these Moche experiences however remains relatively understudied. Here, I specifically focus on the place of women in Moche society through time and space. Some women have now been shown to have played leading roles in practices linked to the dominant Moche ideology. However, these women appear to have lived mostly in the northern part of the Moche sphere and were exceptional in the way their status and gender identity intersected. Furthermore, beyond the positions of various women within the dominant hierarchical structure, the combination of multiple lines of evidence reveal alternative spaces where and ways in which the power of women may have been enacted.

Huckell, Bruce (University of New Mexico) [182]  
Black and Blue, Red and Yellow: Clovis Exploitation of a Central New Mexico Lithic Source  
Along the western edge of the Rio Grande Valley in Central New Mexico is a huge expanse of late Cenozoic volcanics, including a high-quality hydrothermally altered rhyolite. Colloquially known as Socorro jasper, at least one source of this material was exploited frequently by Clovis groups.
This paper describes this source—the Black Canyon quarry—and the physical and geochemical properties of the “jasper” from it. Recent and continuing studies of its use by Clovis groups are reviewed, and its role in technological organization in central New Mexico is considered. The Mockingbird Gap site and the newly discovered Blue Canyon site reveal that Clovis groups practiced flexible strategies for procurement, reduction, transport, and consumption of this material. It is hypothesized that biotic and abiotic resource distribution and mobility strategies, in relation to the source location, appear to underlie this flexibility. The hypothesis is evaluated using these two sites, examining the composition of artifact assemblages of transported versus locally consumed Socorro jasper. Finally, comparisons are made with similar patterns of lithic source exploitation by Clovis foragers elsewhere in North America.

Huckell, Bruce [186] see Birkmann, Joseph

Huckert, Chantal (Universidad Veracruzana)

[33] Una iconografía estelar en figuras y esculturas de las culturas del Clásico del Centro de Veracruz
La presentación se centra sobre figuras estelares de ojos emplumados, cruces, estrellas de tres o cinco puntas, y máscaras. Están pintadas y moldeadas en bajo relieve en la vestimenta y el cuerpo de representaciones humanas en barro que pertenecen a los tipos, rojo sobre crema, mayaide, sonriente y escultórico.

Se identifican las variantes, procedentes de las culturas del centro de Veracruz, a la luz de formas análogas en las artes y los registros gráficos de Mesoamérica, referidos por los especialistas como gílicos de Venus o “estrella”, conjunto sínico al que estudian en sus aspectos divinizados, y en sus funciones calendáricas asociadas a prácticas sacrificiales, entre otras.

Efectivamente, las figuras y las esculturas del centro de Veracruz son investidas por un discurso sínico estelar o venusiano que se sedimenta en raíces mesoamericanas. Las tratamos como los instrumentos y los testigos de la relación entre los poderes divinos y los hombres, que dan cuenta de la manera en que estos últimos concebían el cielo.

Proponemos una lectura interpretativa sobre los espacios simbólicos estelares, articulada en torno a los sistemas de significados que son los elementos formales de las tipologías, los temas figurativos y la iconografía estelar que se contextualizan mutuamente.

Huddart, David [59] see Gonzalez, Silvia

Hudson, Jean (U Wisconsin- Milwaukee)

[165] Bones Left Behind: Living Spaces at a Residential Compound at Cerro la Virgen, a Rural Chimú LIP Settlement
Cerro la Virgen (CLV) is a town-sized LIP site located in the Moche Valley a few kilometers from Chan Chan, the administrative and political center of the Andean polity of Chimú. Previous studies have focused on ceramics and regional politics (Keatinge 1974, 1975), the kinds of plant and animal remains found in residential dumps (Pozorski 1976, 1979; Billman et al in press), and multiple lines of evidence for the nature of the political relationship between the residents of CLV and the leadership and residential population at Chan Chan. What was life like at home for households at CLV? This study looks at the remains of a single residential compound, originally one among hundreds, and asks how room sizes and spatial relationships, in conjunction with a detailed look at vertebrate remains left behind, both near the floors and in the fill above them, can contribute to a fuller understanding of the use and reuse of space within a residential context.

[165] Chair

Hudson, Kathryn [299] see Henderson, John

Huebert, Jennifer (International Archaeological Research Institute) and Melinda S. Allen (University of Auckland)

[85] Arboriculture, Translocated Flora, and Ecological Inheritance in the Marquesas Islands, East Polynesia
Contact-period accounts point to considerable variability in Polynesian agronomic production systems. In the Marquesas Islands, a mountainous island group in the eastern Pacific, food production in the proto-historic period was narrowly focused on tree cropping and breadfruit cultivation in particular. Early western visitors remarked on the archipelago’s large and thriving island populations, and their stable and productive arboricultural systems. In this paper, we present the results of a multi-valley archaeobotanical study that documents the timing and character of native forest transformations and the creation of anthropogenic ones on Nuku Hiva, the largest island in the archipelago. The evidence suggests that early niche construction activities (forest clearance, species replacement, erosion management, and the creation of extensive tree plantations) gave rise to an ecological inheritance that was beneficial to the long-term fitness of Marquesan populations. We consider the co-evolution of local landscapes, translocated arborescent flora, and Marquesan societies.

Huebert, Jennifer [171] see Quintus, Seth

Huerta, Danielle (University of California, Santa Cruz), Heather Trigg (University of Massachusetts, Boston) and Judith Habicht-Mauche (University of California, Santa Cruz)

[104] Analysis of Rio Grande Glaze Ware Glaze F Pottery from LA 20,000 Using Petrographic and Chemical Composition Techniques
The pre-Revolt period (1598–1680) in New Mexico was a tumultuous time characterized by the forced making and breaking of ties between Spanish and Indigenous peoples on the Spanish Colonial settlement landscape that resulted in the circulation of cultural and economic resources. For Pueblo communities, colonial incursions significantly affected daily life through the ravages of war and disease, the privations of taxation and religious persecution, and the disruption of traditional economic and resource allocation practices that accompanied the introduction of Spanish goods and new domestic plants and animals. This paper presents combined petrographic and chemical compositional data from the analysis of 28 Rio Grande Glaze F ceramic vessels from the site of LA 20,000, a seventeenth-century rural Spanish ranch just outside of Santa Fe, New Mexico. This analysis was carried out to investigate the procurement, production, and movement of late glaze wares and their raw material constituents in order to examine the structure and scope of social networks connecting Spanish and Pueblo households and communities.

Huerta, Edgar [285] see Wendt, Carl

Huertas Sánchez, Geraldine (Proyecto Qhapaq Ñan-Ministerio de Cultura)

[273] El caso Huaro y la hegemonía Inca en el valle bajo de Cañete
En el valle bajo de Cañete, la élite Huaro compartía una tradición cultural similar con las élites vecinas a lo largo de la costa centro-sur; a la llegada de los incas, esta tradición se mantuvo pero reconfiguran sus estrategias políticas y económicas. De esta manera lograron proteger sus relaciones interregionales en este territorio, con el fin de aprovechar los beneficios de la presencia inca en el valle.

El Huaro, de acuerdo a los relatos etnohistóricos fue un señorío fuerte e independiente, también es señalado como un señorío que formó parte de una confederación política conquistada por los incas. Las investigaciones arqueológicas priorizaron el análisis estilístico; como consecuencia, su
INDIVIDUAL ABSTRACTS OF THE SAA 83RD ANNUAL MEETING

organization política, económica y cultural se redujo estrictamente a un espacio geográfico determinado.

Por ello, actualmente nos replanteamos la idea de cómo la costa centro-sur fue ocupada por uno o más grupos sociales en tiempos pre-incas y su posterior desarrollo bajo la dominación inca.

El presente análisis de los materiales cerámicos recuperados durante dos temporadas de excavaciones en el sitio arqueológico El Huarco-Cerro Azul (Proyecto Qhapap Nan-Ministerio de Cultura) con el fin de caracterizar la ocupación del sitio y comprender la adaptación o transformación de sus instituciones bajo la conquista inca.

Huffer, Damien (Postdoctoral Fellow, Stockholm University) and Shawn Graham (Dept. of History, Carleton University)

[88] Bioarchaeological Approaches to Investigating Supply, Demand and Authenticity in the Colonial-era Human Remains Trade

During the Colonial era, numerous “trophy skulls” from various Indo-Pacific cultures entered Western museum and private collections, and continue to be sought as “authentic” collector’s items. However, very little bioarchaeological research exists investigating their provenience, intra-cultural variation in decoration and manufacture, and how examples created for Indigenous ritual use differed from those created for sale to Colonial explorers at the beginning of “curio” trade, let alone what characterizes a modern forgery. Using c. late 1800s-early 1900s Dayak and Asmat “trophy skulls” as a case study of the global trade in the “exotic” dead, this presentation will discuss preliminary results from in-progress research on numerous museum collections. The systematic database created will allow for a much more detailed examination of variation in source, manufacture and use. Combining morphological, biodistance (metric and non-metric), and biogeochemical (strontium and lead isotope ratio) data analysed at the individual and population level, key findings to date will be discussed in the context of how a multi-faceted bioarchaeological approach can improve our ability to understand the Colonial-era roots of modern markets.

Huffer, Damien [118] see Graham, Shawn

Huffman, Thomas (University of the Witwatersrand)

[32] Excavations at Great Zimbabwe: Commoner Housing versus Elite Enclosures

Salvage excavations in the 1970s at the famous capital of Great Zimbabwe, southern Africa, uncovered several residential complexes dating to Periods IVb (AD 1300–1450) and IVc (AD 1450–1550). Overall, granaries and middens surrounded closely-spaced houses of commoner families living between the Outer and Inner Perimeter Walls. These high-density concentrations stood in marked contrast to the open spaces typical of elite enclosures. One midden against the Outer Perimeter Wall yielded a copper coin minted in Kilwa in honour of al Hasan bin Sulaiman (AD 1330 and 1333). Within the compounds, most structures had undergone several renovation stages. In addition, separate kitchens and sleeping houses—together with split fireplaces—show a change in attitudes about male and female roles. Among other things, the excavations showed that Great Zimbabwe was a dynamic town rather than a vacant ceremonial centre.

Huggins, Kathleen (University of California, Berkeley)

[141] It’s (Not) Just a Phase: Characterizing Surfacing Techniques in the Ancient Andes

This presentation introduces a technique for quantitative analysis of ceramic surface topography, using false-color images generated through reflectance transformation imaging and automated quantitative analysis using cell-counting software. A preliminary study of surface topography variation in Early Formative and Middle Formative ceramics from Chiripa, Bolivia, will be presented, along with an outline of a reference database, Ceramic-Surface Topography of the Andes. The purpose of this study has been to expand the documentation and analysis of surfacing techniques. Alongside extensive attributional analysis, expedient quantitative analysis of various surface-topographies can enrich operational sequence studies and illuminate the creative environment in the past. The time spent burnishing a ceramic is a compressed time of repetitive and monotonous actions, when gestures blur into the next as easily as the former, and the non-linearity of productive labor can be seen and heard. Burnished ceramics, like quilts in a knitting circle, were audience to the kinds of social interactions which reinforce ties, circulate gossip, and hash out political grievance and agreement. Bringing surface-topography into the larger project of attribute analysis and archaeometry may help in understanding the relationship between the production of objects and political objectives.

Hughes, Lauren [202] see Button Kambic, Emily

Huiyuan, Gan [45] see Lina, Zhuang

Hull, Emily (Hamilton College), Nathan Goodale (Hamilton College), Alissa Nauman (Hamilton College) and Colin Quinn (Hamilton College)

[186] Lithic Raw Materials and Social Landscapes: Mica-Lamented Quartzite Tools from Slocan Narrows, Upper Columbia River Area

Utilitarian stone tools produced from raw materials that are linked to a place or landscape of significant social, ritual, and economic importance likely still carry that importance when tools are transported away from their source. Such objects can serve as indices of social relationships, economic priorities, and ritual practices. By transporting and using these objects, communities would have daily reminders of their connections to important places and activities that take place there. Ethnographically, the Sinixt People of the Upper Columbia seasonally migrated within their territorial range from Kettle Falls, WA north to Revelstoke, BC. Slocan Narrows is a pithouse village located in the center of that traditional territory. Excavations at Slocan Narrows recovered an assemblage of mica-lamented quartzite tools from a geological formation at Kettle Falls, nearly 200km away. We demonstrate the utilitarian use of these quartzite tools through microwear and experimental analysis in conjunction with archaeological and ethnographic contexts. We suggest the daily practice of using these tools at Slocan Narrows linked inhabitants to the site to prominent fishing grounds at Kettle Falls that had social, economic, and ritual significance. This highlights the importance lithic raw materials can have in conveying social information and connecting people to landscapes.

Hull, Kathleen (University of California, Merced)

[191] Discussant

Hulme-Beaman, Ardern (University of Liverpool & Liverpool John Moores University), Thomas Cucchi (Muséum national d’Histoire naturelle), Jeremy Searle (Cornell University) and Keith Dobney (University of Liverpool)

[125] Competition for Resources: How Commensal Competition Informs Us of Past Human Activity

Humans have a dramatic impact on environments around them. They augment, manipulate and engineer local environments to their own benefit, often resulting in a concentration of easily available food and nest sites. These anthropogenic resources and environments are readily exploited by a myriad of other organisms. These organisms, in local and neighbouring environments, engage in a range of different relationships with humans, reflecting the level of interaction and dependence. Due to the ubiquitous nature of some of these organisms and their sheer numbers, it is often assumed that humans provide a predictable and buffered environment, free from the normal annual cycles of resource availability and climate. However, this is a serious misconception, which can lead to a misunderstanding of the dynamics and intense competition experienced by organisms living within anthropogenic environments. A re-examination of human constructed environments illustrates why and how certain species survive, providing greater
insights into how we impact organisms around us. Here we examine the evidence for (un)predictability in anthropogenic environments and competition in modern and ancient commensal species to identify the true nature of this relationship and what it reveals about the human past.

Hulme-Beaman, Ardern [212] see Dobney, Keith

Hummel, Rebecca (University of Kentucky), Katharine Alexander (University of Kentucky) and George Crothers (University of Kentucky) [52] Initial Timing and Spread of the Eastern Agricultural Complex: Need for a Comprehensive Database

Extensive research has illuminated many aspects of the emergence of the Eastern Agricultural Complex, yet gaps remain surrounding the origin and spread of these early domesticated plants. The long-term goal of our research is to create a comprehensive, online database of accurately dated EAC plant samples similar to the Ancient Maize Map project (Laboratory of Archaeology, University of British Columbia). Compiling this chronology will contribute to our understanding of the social, economic, and ecological consequences of plant domestication in this region and highlight where additional research is needed. We have begun by compiling all known instances of four early domesticates (goosefoot, maygrass, marsh elder, and sunflower) in Kentucky and surrounding states. We describe our database project, provide summary information for the Kentucky region, and discuss future plans to increase the regional scope.

Hundman, Brittany (East Tennessee State) and Jay Franklin (East Tennessee State University) [241] Crock and Canning: Economics of Homesteading on Boone Lake

Situated at the confluence of the industrial North and the agricultural South, the rural Appalachian Mountains of east Tennessee had unique access to a variety of material and agricultural goods. These resources were key to the practice of homesteading: a type of small-scale subsistence living that was a mechanism not only for survival but of familial and communal pride that continues to this day. Boone Lake, formed from the damming of the Holston and Watauga Rivers, has covered many early occupation sites from this region. Surface survey along the lake periphery and riverbanks indicates historical occupations beginning as early as the late 1700s, continuing until the mid-1900s. Examining the distribution of artifacts from these disturbed sites by material type proportions and temporal spans will shed light on occupational patterns and social dynamics for this underinvestigated region. The composition of the glass and ceramic assemblages will investigate food preservation patterns, availability of consumable resources, and household economics. Self-reliance and sustainability are continued cultural traditions in this mountainous region and would have played a major role in the maintenance of an autonomous homesteading household.

Hunt, Chris (Liverpool John Moores University), Evan Hill (14Chrono Centre, School of Natural & Built Environ), Paula Reimer (14Chrono Centre, School of Natural & Built Environ) and Graeme Barker (McDonald Institute for Archaeological Research, Un) [137] Radiocarbon Dating of Land Snail Shell and the Chronology of MSA-Neolithic Human Activity in the Haua Fteah, Libya

Land snails have a radiocarbon ecology which leads to offsets in shell radiocarbon age, relative to contemporary biogenic carbon. We describe new methods for evaluating and calculating this offset. We radiocarbon date and apply the new methods to land snail food debris, from the deep MSA to Neolithic sequence in the Haua Fteah cave, NE Libya. Oxcal modelling of the resulting 136 dates over ~45000 years shows the site was used for short episodes separated by long periods of abandonment. The archaeological record had suggested continuous activity. The record in this, and similar sites, needs reassessment in this light.

Hunt, Katie [5] see Herrmann, Edward

Hunt, Rebecca (Binghamton University), Tiffany Raymond (Binghamton University), Anna Patchen (Binghamton University), Sarah Gilleland (Binghamton University) and Matthew Sanger (Binghamton University) [156] Prepared Floors on Mound A Revealed through Near-Surface Geophysics

Mound A is the largest earthen construction at Poverty Point and the second largest mound in North America. Limited excavations on the mound have documented the construction history of the deposit, but have failed to find evidence of how the mound was used. Recent geophysical surveys (including resistivity, ground penetrating radar, and magnetometry) reveal specialized use areas—including prepared floors that we interpret as dance and presentation platforms. The discovery of these platforms suggests that the mound was not simply an earthen pile, but rather a focal point for ritual gatherings whose height allowed greater visibility of activities taking place on it. The successful application of geophysics on Mound A also highlights the applicability of near-surface geophysics as a technique for better understanding other earthen construction at Poverty Point and elsewhere.

Hunter, Carly [241] The Last Ones Out: The Impacts of the National Park Service on the Inhabitants of Cataloochee Valley, NC

This poster will highlight the benefits and drawbacks associated with the establishment of the National Park Service in western North Carolina. Specifically focusing on the Cataloochee Valley of the Great Smoky Mountains National Park, the implementation of government regulations both culturally and geographically affected the region in ways that did not always align. Some of these programs actually disenfranchised the local population, but simultaneously supplied the federal protection that has provided a means by which the public can enjoy the land for years to come.

Hunter, Carly [241] see Hermitt, Elijah J.

Hunter, Raymond (University of Chicago) [297] Cultivating Ideology: Food Production in Colonial Cusco, Peru

Historical and archaeological research on the Colonial Andes and Spanish colonialism more broadly has drawn parallels between the conversion of indigenous populations to Catholicism and the conversion of agricultural land to ‘Christian’ food production. This scholarship contends that for colonizers, religious conversion was irrevocably connected to agricultural practice—a particular concern to Spaniards in the Andes given the strong links between agrarian production and Inka ritual practices.

Evidence from the site of Markaqocha, in the Cusco region of Peru, both corroborates and complicates arguments that link religious and ecological conversion. At Markaqocha, archaeological, historical, and pale-environmental data provide a lens on Inka and Colonial ritual economies. These data suggest that while the intervention of religious organizations was critical to initial attempts to convert from an Inka to Spanish political ecology, the connections this process affirmed between ritual spaces and agricultural production later prompted conflict between secular and religious institutions. Further, data from Markaqocha suggest that attempts at such a conversion were not entirely successful. The data demonstrate that pre-Colonial and Catholic ritual practices have together influenced food production in the vicinity of the site through the five centuries since the arrival of colonizers in the region.
Huntley, Ashley, Jon-Paul McCool (University of Cincinnati, Valparaiso University), Nicholas Dunning (University of Cincinnati), Samantha Flaid (University of Arizona, University of Cincinnati) and Vernon Scarborough (University of Cincinnati)

**Lithic Technology of Manufacturing Stone Tools at Gravel Quarry Source Locations Using Heat-Treatment**

Prehistoric flintknappers world-wide typically used heat-treatment to improve the flakeability of lithic materials after initial reduction into smaller-sized packages. In contrast, along the eastern escarpment of the Southern High Plains of northwest Texas, Late Archaic-age (4,500–2,000 calBP) flintknappers used heat-treatment to improve large quartzarenite clasts prior to initial clast reduction. Heat-treatment in this case was used as part of procurement at quarry gravel source locations. These quartzarenite clasts along with other knappable lithic material occurred within large secondary gravel deposits eroded from the nearby Southern High Plains basal section of the Ogallala Formation. The Potter member quartzarenite clasts were the largest sized clasts within these gravel deposits. A surface survey at Macy Locality 313 (41GR911), a Late Archaic hunter-gatherer campsite and hearthstone. A technological study of this assemblage examined the role heat-treatment in the initial reduction of Potter member quartzarenite clasts. Results indicated the process of heat-treatment improved the unmodified clasts for primary reduction and produced heat fractured debitage that also was used to fashion stone tools.

**Reassessing Agricultural Potential in Chaco Canyon: Exploring the Link between Soil Salinity and Soil Texture**

Hurst, Stance (Museum of Texas Tech University), Ricardo Chacon (Museum of Texas Tech University), Eileen Johnson (Museum of Texas Tech University) and Doug Cunningham (Museum of Texas Tech University)

**The Reshaped Sherd: A Comparative Study of Ancestral Pueblo Worked Sherd Assemblages**

Huo, Wei

**Recent Archaeological Discoveries in Tibet and the ‘Plateau Silk Road’**

Huntley, Ashley, Jon-Paul McCool (University of Cincinnati, Valparaiso University), Nicholas Dunning (University of Cincinnati), Samantha Flaid (University of Arizona, University of Cincinnati) and Vernon Scarborough (University of Cincinnati)

**Forensic Photography and the VCP—Teaching Veterans and Capturing History**

Hurt, John Duncan (University of Texas at Austin)

**The Cividade de Bagunte and the Problems of Castro Architecture**

Hutte, Sr., Guilliam (VCP Alexandria) and Gabriel Brown (VCP Alexandria)

**Satisfying hobby, but also as a possible career choice.**

With the skills and experience acquired through the VCP, many veterans have discovered the value of photography not only as a therapeutic and satisfying hobby, but also as a possible career choice.
Taphonomy, the study of how organisms fossilize and information that is lost and gained along the way, has emerged as pivotal to reconstructing the paleoecology of animal communities and ancient human lifeways. Through taphonomic analysis, we can decipher the sources of bone accumulations, and comparative. Archaeologists demonstrate Maya elite identity by comparing them to non-elites in terms of energy expenditure in burial preparation, and/or through examination of the actual specimens at the museum. We encourage archeologists, paleoanthropologists and paleontologists to utilize this valuable comparative resource.

Hurtubise, Jenna (University of Alabama) [117] Preliminary Understandings of the Casma’s Response to Chimú Conquest in the Nepeña Valley, Peru: Findings from the 2017 Pan de Azúcar Excavations

Around A.D. 1300, the Chimú conducted a series of expansions south of the Moche Valley conquering the Casma, a regional group whose territory spanned from the Chao to the Huarmey Valleys. While past research has examined this event in the northern and southern extent of the Casma’s territory, there exists a void in our knowledge on the Casma’s experience during the Chimú conquest in the central Santa and Nepeña Valleys. In 2017 the Proyecto Investigación de Arqueología de Pan de Azucar (PIAPAN) conducted the first season of excavations at the principle Casma site of Pan de Azucar. The project’s goals are to understand the Casma’s response during the Chimú conquest in whether they conformed, resisted, or hybridized their daily practices through taking a multi-component analysis of cultural and biological data. Based on findings from the first season of excavations at Pan de Azucar, this paper discusses the data discovered and presents preliminary hypotheses on how the Casma reacted to Chimú conquest in the Nepeña Valley.

[117] Chair

Hurtubise, Jenna [65] see Shimada, Izumi

Huster, Angela (Arizona State University) [257] Being Matlatzinca: Ethnicity and Household Activity at Aztec Calixtlahuaca

In written sources, the Mexica provide stereotyped descriptions of other groups, many of whom had been conquered and incorporated into the Aztec Empire. I use data from the site of Calixtlahuaca to evaluate the archaeological validity of such stereotypical practices for one group, the Matlatzinca. In particular, I focus on the heavy reliance on maguey, and locally distinctive foodways relating to maize. I then consider whether these practices became more or less pronounced once the area came under Triple Alliance rule. I find that there is a modest shift toward more characteristically Aztec practices in both activities over time, but that these changes are highly unevenly distributed among households. Given that both of the activities under consideration are relatively low-visibility, household-level practices, it is unlikely that they were specifically targeted by Aztec imperial policies. This suggests that shifts toward more Aztec practices were largely voluntary actions by particular subgroups of the local population.

Hutson, Jarod (Department of Paleobiology, Smithsonian Institution), Anna K. Behrensmeyer (Department of Paleobiology, Smithsonian Institution), Diane Gifford-Gonzalez (Department of Anthropology, University of California), Gary Haynes (Department of Anthropology, University of Nevada,) and Amanda Millhouse (Department of Paleobiology, Smithsonian Institution) [189] Zooarchaeological Contributions to the Smithsonian’s National Taphonomic Reference Collection

Taphonomy, the study of how organisms fossilize and information that is lost and gained along the way, has emerged as pivotal to reconstructing the paleoecology of animal communities and ancient human lifeways. Through taphonomic analysis, we can decipher the sources of bone accumulations at paleontological and archaeological sites and the processes involved in bone modification and preservation. Such inquiries rely upon well-documented reference collections that link certain bone modifications to specific taphonomic agents, processes, and ecological contexts. Here we introduce two major additions to the Smithsonian’s National Taphonomic Reference Collection (NTRC), consisting of roughly 5,000 taphonomic specimens assembled by two of us (Gifford-Gonzalez and Haynes), during many decades of experimental, ethno-archaeological, and landscape-scale taphonomic research in North America and Africa. The taphonomic significance of each specimen has been meticulously documented using original field notes, photographs, and inventories, in a searchable online database. The NTRC is the first global taphonomy repository and is designed to grow with future additions of modern and fossil bones that document known or inferred taphonomic processes. The collection can be accessed digitally and/or through examination of the actual specimens at the museum. We encourage archeologists, paleoanthropologists and paleontologists to utilize this valuable comparative resource.

Hutson, Scott (University of Kentucky) [109] Creations of the Lord: New World Slavery and Sacrifice

In the ancient cities of Ur and Chan Chan, excavations revealed that when a lord died, dozens of servants were sometimes put to death and buried with the lord. Such examples of retainer sacrifice, also mentioned for Aztec kings and documented in Maya tombs, raise questions about slavery, violence, and subjectivity. David Graeber has argued that slavery played a key role in the origin of commercial systems. The transition at issue concerns the melding of human economies (which make and remake relations between people) with commercial economies (which concern the acquisition of goods and wealth). Social currencies power human economies, but such money can never substitute for a person because each person and their relations are unique. Sufficient violence, however, can reduce a person to mere property, a slave. In a well-known passage from Phenomenology of Spirit, Hegel states that the bondsman (the slave) has no consciousness of own: his/her essential nature is to live for the lord. Some aspects of captives and human sacrifice in the New World accord well with Graeber’s and Hegel’s position, yet there are salient differences. This paper explores these discrepancies and considers their consequences to a relational approach.

[82] Discussant [109] Chair

Hutson, Scott [37] see Plank, Shannon

Hyche, John (University of Maryland, College Park) [296] Shanties on the Mountainside: A Look at Labor on the Blue Ridge Railroad

From 1850 to 1860, the Blue Ridge Mountains were home to roughly 1,900 Irish laborers as they worked on the construction of the Virginia Central Railroad. Upon its completion, the railroad stretched from Norfolk, Virginia, to the Ohio River. Along the Blue Ridge Mountains, the Irish immigrants constructed several cuts and tunnels, including the Blue Ridge Tunnel. At its completion, the tunnel measured 4,263ft long and bridged two Virginia counties. This project proved to be an especially daunting task that took ten years to complete and cost many lives. Workers and their families nearby were forced to live in groups of shanty homes, prone to regular outbreaks of disease throughout construction. In 2011, a local non-profit organization, focused on pinpointing the remains of these Irish shanty homes, contacted the University of Maryland to see if an archaeological survey could aid their search. Over the course of two years, archaeological research shed light on the material culture of transient labor and reinforced strong community ties related to the surrounding cultural landscape. The aim of this paper is to evaluate the archaeological evidence collected and determine if the data conclusively points to the existence of shanty settlements at the two sites investigated.

Hyde, David (Western State Colorado University) [142] Elite Maya Social Identity at a Hinterland Community: The View from Medicinal Trail, NW Belize

Social identification is the perception of oneness with, or belongingness to, some human aggregate. The definition of others and self is largely relational and comparative. Archaeologists demonstrate Maya elite identity by comparing them to non-elites in terms of energy expenditure in burial preparation,
house and platform construction, access to luxury items, and cranial and dental modifications. Although non-elites include some urban residents and all hinterland residents, this study proposes that some hinterland residents also identified as elites. The Medicinal Trail Community is a hinterland settlement with considerable variation in household complexity, ranging from simple perishable structures informally arranged, to households on elevated platforms formally arranged around a courtyard. The latter residents attempted to adopt the social identity of the urban elites by using the symbols and material culture of the “Urban Elites,” therefore becoming “Hinterland Elites.” As a result, these “Hinterland Elites” economic and sociopolitical status was elevated above most of the community’s inhabitants, providing them with limited social power. Although their elite identity was probably not acknowledged by the urban centers, by distinguishing themselves from those in their immediate community, they used this identity to gain and maintain power within the community.

Hyde, David [243] see Sullivan, Lauren

Iannone, Gyles (Trent University), Piyet Phyo Kyaw (University of Yangon), Nyien Chan Soe (Yadanabon University), Saw Tun Lynn (University of Yangon) and Scott Macrae (Trent University) [56] Water, Ritual, and Prosperity at the Medieval Capital of Bagan, Myanmar (11th to 14th Centuries CE): Preliminary Exploration of the Tuyin Thetso “Water Mountain” and the Nat Yekan Sacred Water Tank

The IRAW@Bagan project is aimed at developing an integrated socio-ecological history for residential patterning, agricultural practices, and water management at the Medieval Burmese (Barna) capital of Bagan, Myanmar (11th to 14th century CE). As part of this long-term research program investigations have been initiated on the Tuyin-Thetso mountain range, located 11.25 km southeast of Bagan’s walled and moated epicenter. This upland area figures prominently in the chronicles of early Bagan, and numerous 13th century religious monuments were erected there. Recent explorations on Tuyin-Thetso have drawn attention to an additional feature of historical significance, a rock-cut tank located along the eastern edge of the Thetso-Taung ridge. Referred to by local villagers as Nat Yekan (Spirit Lake), this reservoir appears to have been integral not only to the initial collection and subsequent redistribution of water via a series of interconnected canals and reservoirs spread across the Bagan plain, but also, through its associated iconographic imagery, it may have been intended to purify this water, symbolically enhancing its fertility. This presentation will provide a preliminary assessment of Nat Yekan’s potential economic, political, religious, and ideological significance during Bagan’s classical era.

Iannone, Gyles [142] see Demarte, Pete

Ibarra, Eugenia (Universidad de Costa Rica) [260] What Archaeologists Can’t See: Contrasting Ethnohistorical and Archaeological Data in Talamanca, Costa Rica in the 16th Century

Archaeologist Francisco Corrales and myself recently undertook the study of the exploitation of natural resources and their exchange in the areas close to Juan Vázquez de Coronado’s route in 1564, traced from the Pacific coast to the Caribbean in Southeastern and Southwestern Costa Rica. This presentation aims to underline how resources of the different altitudes on both slopes formed an important part of the various activities carried out by the inhabitants during the 16th century and immediately before. I will detail the paraphernalia used by usékares and sukias as it becomes important to understand the nature, presence and movement of distinct objects. I will also discuss how, on the area, ethnohistorical, ethnograpical, linguistic and mythological data are able to depict clues to the presence or absence of material culture. The Museo Nacional de Costa Rica holds materials coming from that precise area, with no context. A sharper look at written sources can help reconstruct the sociocultural dynamics which can aid archaeologists to interpret and orient their specific work objectives.

Ibarra, Julio (INAH OAXACA) [158] Trabajos de Conservación Arquitectónica en el Sitio Arqueológico de San Pedro Nexichó, Colaboración INAH-FAHHO-Comunidad

La conservación del patrimonio arqueológico en la región de la Sierra Norte del estado de Oaxaca, representa un gran reto debido entre otros aspectos a su entorno geográfico, a cuestiones del ámbito social que se relacionan con el arraigo a sus costumbres y tradiciones; y más aún, a la falta total de antecedentes sobre trabajos previos de conservación sobre el patrimonio cultural local. En esta ponencia se presentarán los trabajos de intervención para la conservación y restauración de los vestigios arqueológicos efectuados durante el desarrollo del proyecto de intervención en el Sitio Arqueológico San Pedro Nexichó, avalado por el INAH y con fondos de la Fundación Alfredo Harp Helú de Oaxaca, han dado como resultado primeramente frenar el proceso de deterioro al cual fueron sometidos a partir su localización, saqueo y desatención; logrando mediante la aplicación de los criterios de restauración, sentar las bases para garantizar su conservación, partiendo de la concientización de la comunidad a raíz de su participación en dicho trabajos.

Ibarra, Thania (Proyecto Arqueológico Tepetepicac—Centro INAH Tlaxcala) and Aurelio López Corral (Instituto Nacional de Antropología e Historia) [31] A Technological Approach of Textile Production in Late Postclassic Tlaxcallan

Textile production had a pivotal role among Late Postclassic societies including ancient Tlaxcallan, a prominent altepetl of the Puebla-Tlaxcalla region. Several scholars have studied prehispanic cloth and garments production based on 16th century historical sources, but using little archaeological evidence. In particular, poor attention has been paid on the technology of textile production based on archaeological artifacts, especially in relation to spinning techniques. In the different prehispanic periods, we expected. In order to assess the technological characteristics of thread production in Tlaxcallan, here we analyze a sample of 364 archaeological spindle whorls recovered at the site of Tepetepicac, one of the main members of this political entity. By evaluating their mechanical performance, in association to different fiber processing techniques and thread qualities, we establish the existence of two large groups of archaeological whorls that are correlated with two spinning techniques. In addition, experimental analysis using replicas shows that it is possible to process a variety of short or long staple fibers with each spinning technique, and that artisans can choose the type of spindle whorl to use according to personal experience and skills.

Iceland, Harry [59] see Hirth, Kenneth

Ichikawa, Akira [18] Intraregional Interaction in the Zapotitan Valley, El Salvador: The San Andres Regional Center and Joya de Ceren Village

This paper provides new insights to better understand the intraregional interaction, especially San Andres and Joya de Ceren in the Zapotitan Valley of El Salvador. Joya de Ceren is a village of commoners that was buried by the Loma Caldera eruption, which occurred around AD 650; it is one of the most studied ancient villages in Mesoamerica. Moreover, the previous study indicate that this village might have been closely connected to San Andres, which is the religious, political, and economic center in the region. However, due to limited research, the extent of control of the elite of San Andres over the commoners of Joya de Ceren remains unclear. Therefore, the author recently conducted an archaeological investigation at San Andres. The results revealed that in San Andres, the major occupation and construction of public architecture developed after the Loma Caldera eruption. In other words, San Andres might not have been a regional center at the time of Joya de Ceren. In addition, based on these findings, the