designed to more accurately define the functional roles and differential use of these technologies at an intersite and intrasite level. After establishing the functional roles of specific lithic projectile elements and point types, archaeologists can improve interpretations of late Pleistocene/early Holocene assemblage variability, especially as it relates to foraging behavior, landscape use, and site function.

Lynn, Christopher [168] see Stewart, Ashley

Lynnerup, Niels (University of Copenhagen), Damgaard Peter (Centre for GeoGenetics, Natural History Museum), Hansen Henrik (Centre for GeoGenetics, Natural History Museum), Morten Allentoft (Centre for GeoGenetics, Natural History Museum) and Ashot Magaryan (Centre for GeoGenetics, Natural History Museum)

[143] We just need a few milligrams....

Destructive analyses of human remains, i.e. analyses dependent on small biological samples from human, archaeologically found, bone or teeth, have yielded important new data and added to knowledge about our past. Yet, more studies generate even more studies, and the demand is clearly rising for more samples made available. This is especially the case for those collections, which are very unique in terms of geography (Greenland) or time period (Danish Mesolithic). At the same time, these unique collections also represent a limited resource; it is doubtful how many more Greenlandic or Danish Mesolithic skeletons will be found in the future.

Aside serval major studies on Danish prehistory, we have also undertaken exploratory “proof-on-concept and feasibility” studies, and methodological studies, comparing different sampling techniques. The presentation will focus on sampling techniques over the last twenty years, describe the rising curatorial awareness of the implications of sampling, including ethical considerations, as well as the results of our methodological studies.

Lyon, Jerry (Tierra Right of Way Services, Ltd.), Barbara Montgomery (Tierra Right of Way Services, Ltd.) and Jeffrey Jones (Tierra Right of Way Services, Ltd.)

[325] Deciphering the Dairy Site: Settlement Dynamics and Early Hohokam Developments

The Dairy site is a long-lived prehistoric locality situated at the juncture of the Tortolita Mountains piedmont and the Santa Cruz River floodplain north of Tucson, Arizona. Although the site has yielded important evidence of early Hohokam settlement and cultural developments, the sporadic nature of investigations, the lack of data from early fieldwork, and the destruction of significant portions of the site by the original Shamrock Dairy operation provide substantial challenges to understanding the occupational history and structure of this important prehistoric locality. Since 1999, archaeologists with Tierra Right of Way have investigated much of the locality and revealed extensive loci dating from the Tortolita through early Hohokam (Snakelevel and Cañada del Oro) phases. This paper synthesizes previous and on-going research at the site to address the emergence of a local Hohokam tradition in this unique locality. We contrast early Hohokam cultural developments at the Dairy site with the plaza-centric village-based developments identified elsewhere by highlighting alternate agricultural strategies, settlement dynamics, and ideological and mortuary patterns.

[325] Chair

Lyon, Patrick (Arizona State Museum), Don Burgess (Arizona State Museum), Marilyn Marshall (Arizona State Museum) and Jaye Smith (Arizona State Museum)

[218] New Perspectives on the Maverick Mountain Phase Roomblock at Point of Pines Pueblo

Emil Haury’s 1958 synthesis of the Pueblo III-Pueblo IV period (A.D. 1265–1450) archaeology of Point of Pines Pueblo, in east-central Arizona, is the US Southwest’s classic case study in how to reliably infer ancient migrations. Field school excavations conducted between 1946 and 1960 uncovered compelling traces of immigrants from the Kayenta region of far northeastern Arizona and southeastern Utah. Noting evidence of a fire in the part of the pueblo referred to as the Maverick Mountain phase roomblock, and the rarity of Maverick Mountain Series pottery in deposits post-dating the conflagration, Haury concluded that the locals at Point of Pines burned these rooms in order to drive the Kayenta immigrants out. Recent research with the site’s collections and their associated records has revealed indications of ritual architectural closure behavior similar to that documented at the Homol’ovi villages, a key indicator being enriched deposits. The nature of these deposits suggests that, rather than the locals, the immigrants set fire to the roomblock. In this paper, we describe this new evidence and consider the implications for understanding interactions between locals and immigrants at Point of Pines.

[280] Discussant

Lytte, Whitney [173] see Cap, Bernadette

Ma, Minmin (Lanzhou University), Lele Ren and Xin Li

[45] The Study of Isotopic Baseline in the Gan-Qing Region, Northwestern China

We analyzed the baseline for dietary study through stable isotopes in the Gan-Qing (Gansu and Qinghai provinces) region in prehistory. Total 283 animal samples from 4 sites were collected and analyzed. We found that herbivorous δ15N values did not change much in the Hehuang region between 3200 BCE and 2000 BCE, indicating that the range of nitrogen isotopic baseline was relatively stable in different time. The range of herbivorous δ15N values from the Hehuang region around the 2000 BCE is from 1‰ to 6‰. The herbivorous δ15N values from the Hexi Corridor varied from 2‰ to 10‰. This result shows that the nitrogen baseline in the Hexi Corridor was higher than that in the Hehuang region. It is probably related with the drought climate in the Hexi Corridor. The results indicate that isotopic baseline is particularly important for dietary research using stable isotopic methods in northwestern China.

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Macdonald, Danielle (University of Tulsa) and Lisa Maher (University of California, Berkeley)

[4] Every Block of Stone Has a Statue Inside: Epipaleolithic Engraved Plaquettes and Art at Kharaneh IV

Artistic objects are thought to be one of the hallmarks of the Natufian period, marking a florescence of artistic behavior appearing prior to the origins of agriculture. However, with continuing research into Early and Middle Epipaleolithic sites in the Levant, new discoveries of ‘symbolic’ artifacts are increasing our understanding of even earlier artistic and symbolic pursuits. In this paper we present an engraved plaque from the Middle Epipaleolithic context of Kharaneh IV, eastern Jordan. Using white-light confocal microscopy, we analyze manufacturing traces to identify the gestures and tools used to create the plaque. This artifact, although the only engraved piece recovered from Kharaneh IV thus far, links into wider networks of Epipaleolithic interaction and cultural exchange. Placing the Kharaneh IV engraved object into regional context with other Early/Middle Epipaleolithic artistic artifacts, we explore wider networks of interaction prior to the Natufian.

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MacDonald, Douglass (The University of Montana)

Cougars Creek Obsidian: Quarry Activity and Secondary Processing of a Minor Yellowstone Obsidian

The University of Montana conducted an archaeological survey of the Cougar Creek valley, Yellowstone National Park, Wyoming, in 2017. We mapped Cougar Creek obsidian outcrops, procurement areas, and secondary processing sites. XRF analysis of natural and cultural samples of the snowflake obsidian show a distinct chemical composition, even though its formation event is coeval with the famous Obsidian Cliff, ca. 180,000 years ago (ca. 30 miles northeast). Due to its high variability, Native American hunter-gatherers conducted extensive cobble testing prior to removal from the quarry area. They also mined pits and trenches to obtain the best quality material. A review of Yellowstone XRF-studies show use of Cougar Creek obsidian since the Paleoindian Period. There is a significant distance-decay reduction in its use, with local sites showing intense exploitation. In contrast, the material represents only ca. 1% of all XRF-sourced obsidian artifacts in the Greater Yellowstone ecosystem. Thus, its significance lies in its use as a local source of stone, with little evidence of regional or national distribution such as occurs with the nearby Obsidian Cliff obsidian.

MacDonald, Taylor [334] see Pfau, Justin

MacDonald, Douglass [270] see Smith, Emily

Machause López, Sonia (University of Valencia)

Walking into the Shadows in the Iberian Ritual Caves (6th–1st Centuries BC)

The power of the underground has attracted ritual practitioners over the centuries. Natural places, such as caves, have some intrinsic sensorial power which helps to create a ritual atmosphere. In the Iberian Iron Age (6th–1st centuries BC), ritual production has been recognized in some caves through the identification of the material patterns. Along with other physical and sensorial particularities. Although each cave is different, those cavities in which we find evidence of ritual practice have certain elements such as water, complete darkness or ritual memory. These elements are important to the performance of ritual activities, because they call upon sensorial feelings. It is unlikely that the entire audience participated in the whole ritual process. Some practices, performed in the dark zones of the caves, would have been reserved for specific individuals based on class, age, and gender. In this paper I reconstruct ritual performances based on context and analyses of artifact assemblages.

MacIntosh, Sarah (University of Nevada, Las Vegas), Levent Atici (University of Nevada, Las Vegas) and Sachihiro Omura (Japanese Institute of Anatolian Archaeology)

Assessing the Correlation between Bone Artifacts and Body Part Profiles: A Case Study from the Central Anatolian Site of Kaman-Kalehöyük

This paper investigates the production of bone artifacts during the Bronze Age (ca. 3000–1200 BCE) at the central Anatolian site of Kaman-Kalehöyük. At this time, economic activities went through a stage of integration into more complex political and social contexts, which gave way to more centralized and specialized market economies. These transformations in sociopolitical and economic organization resulted in other changes as well. For example, animal exploitation patterns began to reflect a more regulated economy to meet food production, distribution, and consumption demands. Urbanized food management systems also had to meet the demands of craftspeople and specialists, if any, who might have preferred certain skeletal elements over others. In a rural site like Kaman-Kalehöyük, craftspeople, in particular, would use bone as raw materials readily and constantly available for production purposes. More specifically, we seek to elucidate whether preferences for specific bone elements reflect changes in the demands for consumer goods such as game pieces, jewelry, furniture inlays, archer's thumb rings, bone shaft looms, and needles. More broadly, we aim to test whether there are correlations between changes in sociopolitical and economic organization and production of bone tools through time.

MacIasca, Heather (Indiana University of Pennsylvania)

Revisiting the Keeshin Farm Site: A Study on Continuity and Change in Subsistence Practices at a Langford Tradition Settlement

The American Midwest served as a place for the exchange of materials and culture, and as the political center of North America by AD 800. The rise of Cahokia, including the populations of the Oneota and Langford Tradition settled along the Mississippi River and its tributaries. While Mississippian obsidian since the Paleoindian Period. While Mississippian obsidian show a distinct chemical composition, even though its creation event is coeval with the famous Obsidian Cliff ca. 180,000 years ago (ca. 1500 BCE) artifacts have been found in Langford Tradition contexts, there exist conflicting views on the range and depth of Cahokian influence on these populations. A study of faunal remains associated with the Langford Tradition Keeshin Farm site in Rockford, Illinois, and comparison of results from similar sites reveal changes in subsistence as a reaction to influence from both Cahokian and Oneota sources. Analysis of the Keeshin Farm faunal assemblage includes measuring dental wear patterns, determining seasonality for hunting, and identifying processing techniques for Cervus canadensis (wapiti), Odocoileus virginianus (white tail deer), and other mammals commonly used for food. Keeshin Farm results are then compared to those at Hotel Plaza, Gentleman Farm, and Zimmerman sites in Illinois to provide further insight into continuity and change in Langford Tradition subsistence.

Mack, Jennifer [88] see Noldner, Lara

Mack, Stephanie (United States Forest Service), Caitlin Ainsworth (University of New Mexico) and Emily Lena Jones (University of New Mexico)

Intrusive Taxa Identified in the Re-excavation of Room 28 in Pueblo Bonito, Chaco Canyon

Archaeological sites are attractive places for burrowing rodents, but determining which specimens are intrusive can be a challenge. The fauna from the 2013 re-excavation of Room 28, due to its complex depositional history and rich rodent assemblage, provides an opportunity to explore different
methods of identifying intrusive rodents in archaeological sites. In this paper, we use four lines of evidence to identify intrusive remains from human subsistence activity: 1) frequency of surface modifications suggesting human consumption or butchery; 2) frequency of cranial elements; 3) frequency of complete skeletal elements; and 4) distribution by depth. Taken together, these lines of evidence indicate a mix of intrusive and non-intrusive rodents in the Room 28 faunal assemblage.

Mackay, Helen [126] see Shillito, Lisa-Marie

Mackie, Madeline (University of Wyoming)

What Are the Chances? Estimating the Probability of Coincidental Artifact Association with Megafauna Remains

There has long been a debate about the frequency of megafauna hunting or dismemberment by early Paleoindians in North America. Proposed megafauna kill sites are heavily scrutinized. Sites which contain limited artifacts, but no projectile points are often discounted or classified as ‘possible’ kill sites due to their limited cultural materials. This begs the question, just how likely (or unlikely) are artifacts to be accidentally associated with megafauna remains? Using a computer model, the likelihood of accidental cultural association with animal remains (in this case proboscidean) can be estimated. In the model proboscidean remains and archaeology sites were realistically distributed on a landscape using variables from predictive modeling and the modern proboscidean ecological record to understand the frequency of coincidental spatial associations. While no computer model can exactly replicate real world circumstances, this analysis allows for a base understand of the frequency and most common circumstances which produce accidental archaeological associations. This model viewed alongside the archaeological record establishes another basis for evaluating possible megafauna kill or dismemberment sites.

MacKinnon, Marla [15] see Drake, Stacy

MacLellan, Jessica (University of Arizona)

[262] Household Ritual and the Development of Complex Societies in Formative Mesoamerica: Comparing the Maya Lowlands and Central Mexico

Recognizing that households contribute to—rather than simply reflect—broad social changes, scholars working in the Maya lowlands and Central Mexico argue that domestic ritual played a role in the emergence of complex societies in Formative (or Preclassic) Mesoamerica (c. 1000 BC—AD 300). Certain aspects of household-level, ritualized activities are shared across Mesoamerican cultures. However, major differences within and between the two regions show that a variety of social organizations were constructed and transformed over the course of the Formative period. The site of Ceibal, in Guatemala, provides key data for understanding the social processes that took place in the Maya area. Along with public rituals, early domestic practices influenced the development of very different kinds of city-states that would characterize the Maya lowlands and Central Mexico during the subsequent Classic period.

Macphail, Richard [224] see Graham, Elizabeth

Macrae, Scott (University of Florida)

[40] Agricultural Strategies and Intensification: A Study of Risk Management in the Southern Maya Lowlands

The decisions and consequences behind the intensification of agricultural strategies among past societies has long been a topic of debate among archaeologists. These discussions are often dominated by factors of population dynamics and production capacity. This paper will explore the less discussed factor of risk management. Controlling the variation of production in regard to fluctuating natural and social pressures was critical to past agrarian societies and undoubtedly played a role in the development of their intensive agricultural strategies. This is addressed by examining the geo-intensive agricultural strategy of the ancient Maya located in the hilly region of the North Vaca Plateau, Belize. The GIS modeling of a combined assemblage of datasets that include archaeological fieldwork, remote sensing (LiDAR), pedological analysis, and climatic reconstructions reveals the functional qualities of the agricultural terracing that forms the basis of the production strategy in this region. Results present the properties of terracing in relation to hydrological flow and erosion as well as their ability to increase land suitability for production by decreasing variation in the face of climatic fluctuations. Identifying the functional qualities of this intensive agricultural strategy will demonstrate an intentional action to ameliorate the risks experienced in the North Vaca Plateau.

Macrae, Scott [56] see Iannone, Gyles

Mader, Christian (German Archaeological Institute), Markus Reindel (German Archaeological Institute) and Johny Isla (Peruvian Ministry of Culture)

[141] Sea Shells in the Mountains and Llamas on the Coast: The Vertical Economic Organization of the Paracas in Palpa, South Peru (370–200 BC)

This research analyzes excavated materials of the Paracas culture (800–200 BC) in southern Peru, particularly obsidian artifacts, malacological finds, and camelid bones. In doing so, different methods including archaeological techniques, quantification, artifact classification, and species determination are combined to elaborate natural origin, making, distribution, and utilization of the objects. The Paracas remains were excavated by the Palpa Archaeological Project and mainly derive from three representative sites situated at distinct altitudes on the western Andean slope: Jauranga (285 masl), Collanco (1,630 masl), and Cutamalla (3,300 masl). Accordingly, the Late Paracas period (370–200 BC) in the Palpa valleys (Andean Transect) serves as a case study for this archaeoeconomic approach. The results show exchange processes in the western Andes that are characterized by unbalanced commodity flows. Resources from the highlands such as obsidian, camels and their products—for instance wool—arrived at the Pacific desert strip in large amounts, while marine resources such as sea shells reached highland regions only in small amounts. Raw materials were not just procured in the mountains, there were also strategic production centers like Cutamalla. All in all, consumption at coastal settlements like Jauranga needs to be seen as the driving force behind the Paracas economy.

Madrid González, Mariela Viridiana (Universidad Veracruzana)

El diseño de la actividad. La relación de los petrograbados y los talleres de lítica en la Costa este de Los Tuxtla

La Zona Costera del volcán de Santa Marta, al este de Los Tuxtla, cuenta con la presencia de afloramientos basálticos que fueron aprovechados de diferentes maneras desde el Formativo medio hasta el Clásico tardío. En esta zona, han sido identificados contextos arqueológicos de explotación que corresponden a talleres dedicados a la producción de artefactos de lítica tallada y pulida. Una característica de algunos de estos talleres es la presencia de petrograbados, algunos con diseños sencillos, algunos con diseños complejos. En este trabajo, se analiza la relación espacial de las áreas de producción, los petrograbados y los elementos del paisaje para establecer si existe una relación entre los diseños plasmados y la actividad realizada en los talleres.
Madsen, Christian K. (Greenland National Museum/The National Museum of Denmark), Jette Arneborg (National Museum of Denmark), Ian Simpson (University of Sterling), Michael Nielsen (Greenland National Museum & Archives) and Cameron Turley (City University of New York)

[34]  (Almost) Making It in the Margins: Medieval Norse Adaptation to the Arctic Fjord Environments

The medieval Norse settlements in Greenland formed the westernmost frontier of Scandinavia, and the Old World, between ca. AD 980–1450. A Norse society of perhaps only some 2500 farmer-hunters settled two subarctic niches: the Eastern Settlement in South Greenland with ca. 550 sites and the smaller Western Settlement 500 km north in the inner parts of the Nuuk fjord region and with only some 90 sites. For still not completely understood reasons, the latter was completely abandoned by AD 1350–1450, the former a generation or two later.

This presentation reports the preliminary findings of two coupled projects that attempt to recognize key drivers of Norse settlement change and deterioration: Winter is Coming Project (WICP) and Comparative Island Ecodynamics in the North Atlantic Project (CIE). WICP investigates agriculturally marginal areas to understand Norse settlement and land use dynamics in settings highly susceptible to climatic. CIE compares the ecodynamics of long-term societal development in Iceland/Greenland. However, rather than reveal new clues to Norse settlement decline in Greenland, the two projects have over the last 5 years demonstrated more examples of successful adaptation, complex settlement dynamics, and societal change in agriculturally marginal fjord areas that offered the Norse other opportunities.

[277]  Discussant

Madsen, Christian K. [135] see Harmsen, Hans

Maezumi, S. (University of Exeter), Jose Iriarte (University of Exeter), Diana Alves (University of Exeter), Mark Robinson (University of Exeter) and Denise Schaan (Federal University of Pará)

[116]  Evidence of Pre-Columbian Polyculture and Agroforestry in the Eastern Amazon

The scale of pre-Columbian impact on Amazonia is one of the most debated topics in archaeology and paleoecology. To address this issue, an interdisciplinary approach combining archaeological soil profiles and lake sediment cores from the lower Tapajos are used to investigate climate-human-ecosystem interactions over the past 8,000 years. Pollen and phytolith data indicate the presence of polyculture crops including Ipomoea, Manihot, Zea mays, and Cucurbita. The presence of Theobroma, Mauritia/Mauritiella, Myrtaceae, Brosimum, Attalea, Lecythidaceae (Bertholletia), and Caryocar suggest the exploitation of naturally occurring trees of economic importance. Pollen, phytolith and charcoal data do not documented large-scale pre-Columbian deforestation at this site. The presence of polyculture, trees of economic importance, and rainforest vegetation suggest Formative Pre-Columbian populations (ca. 4000 cal yr BP) employed diverse subsistence strategies that combined forest and fire management, polyculture, and soil amelioration that maximized subsistence diversity without large-scale land clearing. These data provide evidence of resource diversification, improved food security, and sustainable anthropogenic landscapes during increased climate variability and expanding pre-Columbian populations in the late Holocene. This provides an example of long-term example of sustainable anthropogenic landscapes that can inform management and conservation efforts for sustainable futures of Amazon ecosystems in the 21st c.

Maezumi, S. [213] see Iriarte, Jose

Magargal, Kate

[58]  The Ecology of Cooking with Firewood

Cooking food conferred an energetic advantage to our pre-human ancestors and became one of the hallmark characteristics of the human strategy set. Accessing fuel remains a common problem for many human societies. Yet anthropologists do not often take the costs of gathering fuel into account when modeling subsistence and settlement. This paper presents a model that incorporates firewood tradeoffs into human choices about what to eat and where to live, and examines a hypothetical case for the North American Great Basin. Applications of this model in both archaeological and modern ethnographic contexts will allow anthropologists and ecologists to illuminate firewood-mediated relationships between people and woodlands.

Magargal, Kate [36] see Parker, Ashley

Magaryan, Ashot [143] see Lynnerup, Niels

Maggard, Greg (Oklahoma Department of Transportation)

[127]  Late Pleistocene Aggregation Sites on the Peruvian North Coast: A New Look at Paiján Settlement

Although specific examples are rare, the concept of seasonal or periodic group aggregation is often employed by studies of early foragers in the Americas as a functional process to explain the formation of social networks, information exchange, group ritual, exogamy, and the long-distance movement of materials. In spite of frequent use when modeling mobility and settlement, the material, spatial, and social characteristics of aggregation sites remain poorly understood. Here, we provide two examples of aggregation sites related to the Late Pleistocene-Early Holocene Paiján complex of northern Peru. These early foragers occupied an ecotonal boundary zone along the western Andean foothills, which afforded access to the nearby Pacific coastal plain and adjacent highlands. Paiján settlement organization has been characterized as primarily logistical, with small task- or resource-specific locations and basecamps located in proximity to resource-rich zones. Two large sites (Je-431 and Je-790) in the Río Seco de Chamán drainage provide evidence for and insights regarding the aggregation process, as well as Paiján social organization. We contend that these sites primarily served to organize communal foraging activities, as well as nodes for the exchange of information and materials.

[127]  Chair

Magnani, Matthew (Harvard University)

[58]  Contemporary Archaeology in Indigenous Communities?

This presentation critically evaluates both the historic and present trajectories of the field of ethnarchaeology and its outgrowths as practiced in indigenous communities today. This paper draws on long-term fieldwork conducted amongst two distinct communities who inhabit Arctic Europe and east Africa. I reflect upon the development and current state of ethnarchaeology—often used as a tool to interpret archaeological remains of the deep past—and suggest new potential functions and responsibilities for the subfield.

Magnani, Matthew [36] see Campbell, Wade

Magnoni, Aline [173] see Miller, Stephanie
Maher, Lisa (University of California Berkeley) and Danielle Macdonald (University of Tulsa)

**[295]** Becoming Neolithic or Being a Hunter-Gatherer? Reframing the Origins of Agriculture through a Longue Durée Perspective

Searching for the origin points of major cultural revolutions and transitions has long been a driver of archaeological research, yet led to research focused on perceived boundaries, rather than continuity. Research into the origins of so-called modern human behavior, the origins of social complexity, the earliest domesticates, among others, all focus on defining moments of change that may be undetectable in the archaeological record. Perhaps some of the most enduring archaeological questions revolve around the ‘origins of agriculture’. In this paper, we explore changing historical conceptions of the ‘origins of agriculture’ in Southwest Asia in archaeological discourse and how, through the lens of the longue durée, we can trace aspects of material culture, human action, and complex human-landscape dynamics in deep time. Using examples from the Epipalaeolithic of eastern Jordan, we address current debates on Neolithization by exploring the implications of perspectives that focus on ‘becoming’ Neolithic and ‘being’ a hunter-gatherer. Through this perspective we discuss different scales of material culture analysis; from the ‘ethnographic’ lens identifying individual behaviors in the past, to the long durée of material culture trends. This multi-scalar perspective gives new insight into how we construct cultural boundaries and understand change during the ‘origins of agriculture’.

Maher, Lisa [4] see Macdonald, Danielle

Maher, Ruth (William Paterson University) and Jane Downes (University of Highlands and Islands)

**[135]** Sustainable Heritage through Community Engagement and Education

In addressing the problem of burning libraries, this paper focuses on sustainable heritage through public awareness and civic engagement. Political rhetoric and limited first-hand experience has created a system whereby the impacts of climate change, coastal erosion, and rising sea levels are no longer a priority; and for students, it has become but a distant concern. This paper addresses these problems through education programs designed to (i) get students involved in the archaeology of coastal sites, (ii) help students better understand their own heritage and preserve it; and (iii) encourage students to take an active part in maintaining their landscapes, environments, and heritage through civic engagement projects. This approach has been successful in our study regions; and preliminary results are presented here.

**[111]** Chair

Majianen, Heli [90] see Systelien, Jennifer

Majewski, Teresita (Statistical Research, Inc.)

**[331]** What Did We Learn? SAA’s Discovering the Archaeologists of the Americas Pilot Project

SAA has an ambition to investigate the demographics of the archaeological profession in the Americas, looking to bring together knowledge and advice on how the profession of archaeology (in cultural resource management, academic, government, museum, self-employed, and other contexts) is structured throughout North, South, Central America, and the Caribbean. SAA has now carried out the first step toward this goal, which has been to carry out a targeted pilot project, gathering data on archaeological employment in two test areas—Chile and New Mexico. Doing this has allowed us to test the proposed methods and to obtain feedback on processes in order to learn about how the full study could ultimately best be conducted.

**[149]** Discussant

Makowski, Mike (The College of William and Mary)

**[255]** The Materiality of Feasting: Pottery as an Indicator of Ritual Practice in Late Woodland Virginia

The Hatch site in Prince George County, Virginia is arguably among the most significant precolonial sites in the region. After it was excavated in the 1980s, the collection was stored away and went largely unstudied for the last thirty years. When I first began my research on this ‘orphaned’ site, I was struck by the large pit features containing evidence of ritual feasting and a wide variety of ceramic types. Adhering to the old trope that ‘pots equal people’, I initially assumed that this site was one in which different groups aggregated for rituals that increased social bonds, eventually helping them coalesce into the Algonquian groups encountered by the first English colonists. As my research progressed, I came to realize that the ceramic varieties are more indicative of the ritual practice itself than they are of different groups of people. Hatch is a site that appears to be of great ritual significance to the Late Woodland people of coastal Virginia. The artifacts found in the site’s pit features, including Abbott Zoned Incised—an elaborately decorated ceramic ware—strongly suggest this. This paper presents my research into these ritual practices and my thoughts on the significance of the ceramic types associated with them.

Makowski, Krzysztof and Roberto Pimentel (Warsaw University)

**[211]** Skilled Craftsmen, Ancestors Cult, and Hegemonic Strategies of the Wari Empire

The comparison of new evidence obtained from Pachacamac and Castillo de Huarmey sites sheds new light on the character of Wari presence on the Peruvian Coast. Both sites are contemporary (Late Middle Horizon, ca. 800—1100 AD) and most new information comes from funerary contexts. In both cases, imitations of foreign styles, originated in the south coast and highlands, as well as the local ones are present in the iconography found in the offerings. Recent analyzes lead us to the conclusion that most artifacts were locally produced by local and foreign artisans, except for rare portable items such as wooden artifacts and textiles. Additionally, the character of the iconography corpus does not correspond to the hypothesis of the existence of Wari religious proselytism since they are not of different groups of people. Hatch is a site that appears to be of great ritual significance to the Late Woodland people of coastal Virginia. The artifacts found in the site’s pit features, including Abbott Zoned Incised—an elaborately decorated ceramic ware—strongly suggest this. This paper presents my research into these ritual practices and my thoughts on the significance of the ceramic types associated with them.

Makowski, Krzysztof [132] see Carmen, Mayra

Malca Cardoza, Hernandez (Ministerio de Cultura, Piura) and Alexis Mantha (Champlain College, Saint-Lambert)

**[207]** Ayllu There in the Upper Marañón? Founding Ancestors and Political Dynamics in the Rapayán Region of Ancash/Huánuco during the LIP

Andean scholars generally conceive the ayllu as representing a group of people who consider themselves to be related by common descent and who collectively possess and exploit resources (land and water). In many regions of the Andes during late pre-Hispanic times, ayllu members retraced their common origin and kinship ties through the celebration of a mummified founding ancestor. Ayllus could either be small or large and often the smaller units were hierarchically integrated into the larger ones. As a result, ayllus tended to be nested and multi-scalar social organizations where an individual could be linked to a hierarchy of ancestors. In this paper, we seek to determine whether the largely farming communities of the Rapayán region of the Upper Marañón during the LIP (1000—1450 C.E.) displayed a social organization characteristic of the ayllu or not. Through excavated evidence and the analysis of architectural forms and spatial distribution, we are able to infer the existence of hierarchy of founding ancestors as well as some of the water and farming lands exploited by their descendants.

Maldonado, Antonio [74] see Méndez, César
Maldonado Vite, María Eugenia [128] see Richter, Kim

Malhi, Ripan [212] see Witt, Kelsey

Maline, Sophia (University of California, Berkeley), Melanie Miller (University of Otago, Dunedin, New Zealand), Jillian Swift (Max Planck Institute for the Science of Human Hist) and Christine A. Hastorf (University of California, Berkeley)

Reconstructing Recipes: Stable Isotope Analysis of Food Residues from a Year-Long Cooking Experiment

Charred food residues provide a unique window into ancient peoples’ culinary cultures, and chemical analyses of burnt meals can help us identify the ingredients used to create specific recipes. However, limited experimental work leaves us wondering—when we find residue in an ancient pot, are we viewing the remains of the final meal cooked in that pot or is it the product of multiple recipes? Does the chemical signature of the residue accurately reflect the meal(s) cooked in that pot? Seven archaeologist-cooks each prepared a distinct recipe, in the same ceramic (un-glazed) pot, once a week for a year, and periodically sampled the charred residues for stable isotopes of carbon and nitrogen. During the final weeks, the cooks swapped recipes to see if the final meal would “over-write” the previous year’s cooking events, or if the chemical signature of those earlier meals would be retained. Our isotopic data show a consistent relationship to each recipe’s ingredients. However, the isotopic data from the final residue collection indicate the charred material was not only from the last recipe cooked but retained material from earlier cooking events. Therefore, archaeologists are cautioned in interpreting charred pottery residues as they potentially reflect multiple meals.

Malios, Seth

Archaeological Ceramic Analysis as a Vehicle for Anthropological Holism at 1607 James Fort: An Essay in Honor of Dr. Joseph W. Ball

Joseph W. Ball spent a highly successful and influential career identifying archaeological insights into the Maya through detailed, rigorous, and creative ceramic analyses. In honor of his many contributions, this paper draws on Dr. Ball’s methodological and theoretical approaches by using ceramics as a springboard for deeper anthropological discussions into daily life at Jamestown Island, Virginia during the first half century of English settlement (1607–1657). Distinctions in artifact frequencies between Fort-Period and Post-Fort Period features uncovered by members of the ongoing Jamestown Rediscovery Project are consistent throughout nearly every artifact type are most pronounced among ceramics. Expanding the analysis from a core dimensional focus on space, time, and form to broader thematic issues of diachronic trade patterns and intercultural exchange laterality, this presentation identifies key nuances in exchange directionality and economic inequity that reflected the deterioration of English/Powhatan Indian relations during the first quarter of the 17th century. Drawing in other subfields of anthropology in a holistic manner—another cornerstone of Joe Ball’s research—it becomes clear that the sequence from bilateral intercultural exchange to unilateral intercultural exchange to no exchange at all was not only a barometer of failing relations; it was a catalyst as well.

Mallol, Carolina [126] see Eguez, Natalia

Maloney, Jillian [79] see Davis, Loren

Manahan, T. (Kent State University)

Household Resilience, Political Collapse, and Community Transformation: Late-Terminal Classic Transition of the Ancient Maya Center of Xuenkal

Across the Maya Lowlands, the Terminal Classic Period (AD 800–1000) represented a time of dramatic sociopolitical transformation. Investigation of the Northern Maya lowland site of Xuenkal, shows an abrupt break in the pattern of steady demographic growth during the Terminal Classic, associated with the center of Chichen Itza 45 km away. Xuenkal presents a unique case to evaluate this transition as it contains discrete households associated with the Late Classic zenith of local political centralization as well as Terminal Classic constructions associated with Chichen Itza Sotuta materials. Comparisons between the two groups show differing strategies of household socioeconomic integration. This presentation explores the local transformation from the perspective of both polity and household as outside pressures disrupted longstanding trends. Finally, the patterns of household and political transformation are compared and contrasted with the case of Copan, Honduras.

Manahira, George [114] see Douglass, Kristina

Mandel, Rolfe (Kansas Geological Survey)

The Contributions of Vance T. Holliday to the Earth Sciences

Vance T. Holliday, the recipient of SAA’s 2018 Fryxell Award for Interdisciplinary Research, has devoted his career to applying geoscientific methods and theories in archaeological investigations. Vance’s scientific contributions, however, go beyond archaeology; he has played an important role in facilitating our understanding of landforms, sediments, and soils that provide the context for archaeological sites. The sites he has investigated, with a focus on their geomorphology, soils, stratigraphy, and paleoenvironmental records are in a variety of landscape settings. Those settings include playas, drawings, river valleys, dune fields, and loess-mantled uplands. Through decades of research, he has been instrumental in developing our knowledge of late-Quaternary landscape evolution, soil genesis, and especially soil stratigraphy. Against the backdrop of Vance’s long and productive career as a geoarchaeologist, this paper provides an overview of his contributions to the Earth sciences.

Manin, Aurelie (University of York), Camilla Speller (University of York), Gregory Pereira (CNRS, UMR 8096 Archéologie des Amériques) and Christine Lefèvre (MNHN, UMR 7209 Archéozoologie Archéobotanique)

Captive Birds and Pet Keeping in Ancient Mesoamerica: The Case of Scarlet Macaws from Vista Hermosa (Tamaulipas, Mexico, 1300–1500 AD)

In Mesoamerica, the tropical colourful birds were highly valued for their feathers. Among them, the scarlet macaw (Ara macao) provided bright red, blue and yellow feathers that were traded to the Central Mexican Highlands and, beyond Mesoamerica, until the American Southwest. As suggested by ethnohistoric records, some birds may have been maintained in captivity and harvested to supply the demand in feathers. In spite of examples of large-scale macaw management in the American Southwest, there is no such archaeological evidence for Mesoamerica, and in particular within their native regions. In this presentation, we investigate the osseous remains of two scarlet macaws from the Postclassic site of Vista Hermosa, Southern Tamaulipas, Mexico (1300–1500 AD) to clarify their relationship with the Huastecan population. Using osteological markers and stable isotopes, we show that the birds were kept in captivity, maybe as pets. By identifying captive birds outside of the major political centres of Central Mexico, these results shed new light on avicultural practices in ancient Mesoamerica. In addition, the archaeological evidence of captive macaws in the Huasteca is consistent with ethnohistoric observations, and could help to understand the origin of the captive-reared scarlet macaws found in the American Southwest.

Manin, Aurelie [169] see Forest, Marion
**Different Dead for Different Purposes: The Ancestors and Ancestral Spirits of Rapayán in the Peruvian Central Andes**

During the Late Intermediate Period (1000–1450 C.E.), the inhabitants of the Rapayán region in the Peruvian central Andes created a complex landscape for the dead. These were disposed of in natural caves along cliffsides surrounding residential sites as well as in a variety of above-ground mausoleums constructed at highly visible locations. In this paper, I develop a typology of sepulchres and analyze their spatial patterning. Building on ethnographic and ethnohistorical material, I argue that the different types of mortuary constructions and their specific distribution across the Rapayán landscape reflects different kinds of mortuary practices. On the one hand, rituals honoring the dead located in caves and smaller mausoleums grounded people in place and participated in the construction of group identity. I suggest that the deceased in this funerary program became ancestors and were celebrated as the named founding ancestors of kin groups.

Mantha, Alexis [207] see Malca Cardoza, Hernando

Manzanilla, Linda [31] see Froese, Tom

Manzano, Bruce [35] see Randall, Connie

**Images of the Living Past: 19th-Century Moche Archaeological Photographs and Everyday Indigeneity in the Northern Peruvian Andes**

This presentation analyzes late 19th-century photography of Moche pre-Columbian buildings, as a way to inspect the buildings’ incorporation into everyday indigenous lives. I will focus on the work by German scientist Hans Heinrich Brünig (1848–1928). First arrived as an engineer hired by the most important sugar haciendas of the region, Brünig's interests quickly shifted towards archaeological and ethnographic studies during his stay in the Northern Peruvian Andes between 1875 and 1920. His work was mainly focused on pre-Columbian Moche buildings and in contemporary indigenous Moche populations, to the extent that his photographs are the earliest documents of its kind. In this presentation, I will explore how Brünig’s images of houses prove how these buildings were part of contemporary indigenous roads, religion and labor; and how this incorporation defined scientific understandings...
of indigeneity in this Andean region. In this sense, Brüning’s images are relevant as they serve as ethnohistorical documents, as well as given that they substantially explain the trajectories of archaeological sciences in this Andean region. Finally, I explain how the meaning these images communicate is key to understand 20th-century and present uses of these photographs by Moche descendants.

Marcucci, Derrick (Landmark Archaeology, Inc.), Susan Gade (Landmark Archaeology, Inc.) and Antonio Martinez Tunon (Landmark Archaeology, Inc.)

[239] The VerHage Site: A Late Archaic Seasonal Village located in Wallkill Drainage of Southeastern New York

In summer 2017 Landmark Archaeology, Inc. conducted data recovery excavations at four Late Archaic sites in southeastern New York within the Wallkill drainage near the town of Goshen. Excavations at the VerHage Site, a Late Archaic Lamoka Phase (ca. 3000–2500 BC) site and the largest of the four investigated sites, identified pit features, post-molds and house patterns, yielded a large lithic assemblage, and found glacial erratics used for food processing and tool production. The recovery of a large number of formal bifaces and groundstone tools as well as the presence of massive roasting pits indicate that hunting and processing of wild plant foods were tasks undertaken at the settlement. By comparing the density and diversity of the VerHage artifacts and features with those of the other three sites, we interpret the site functioned as an aggregation center seasonally occupied by regionally interacting kin based bands.

Marcum-Heiman, Alesha (University of Louisiana, Monroe) and Diana Greenlee (University of Louisiana—Monroe)

[156] Beyond the Boundaries: Systematic Survey of the Poverty Point Landscape

The monumental core of Poverty Point (16WCS) has been the focus of considerable archaeological research, particularly since the early 1980s, but the broader spatial context of the site is less well known. Indeed, it has been estimated that < 12% of the Poverty Point Compatible Use Zone (PPCUZ), a nearly 5-km radius catchment area around the site, has been formally surveyed. The PPCUZ, which was established for management purposes, approximates the daily foraging radius for hunter-gatherers in a resource-rich environment. In 2017, the Poverty Point Station Archaeology Program initiated a systematic investigation of the PPCUZ. Working with volunteers and local landowners, a siteless survey approach is used to acquire data necessary to characterize past uses of the PPCUZ landscape. This poster presents the results of the first season of investigation and preliminary observations regarding patterns of land use and settlement in the area immediately surrounding Poverty Point.

Marean, Curtis [89] see Murray, John

Marengo, Nelda Issa (University of California Riverside)

[33] Warriors and Violence in the Iconography of Chichén Itzá

En Mesoamérica las representaciones gráficas sobre guerra, violencia y conflicto, son una constante que se encuentran en diversos sitios y en diferentes periodos. Para el Epoclásico (650–900 A.D) en el centro de México, y para el Clásico Tardío/ Terminal (600–900 A.D) en el área Maya, esta temática comienza a presentar cambios, tiende a ser más explícita y a compartir algunos elementos entre sitios contemporáneos. Chichén Itzá floreció durante este momento de cambios y muestra de ello es la presencia de dichas características en la iconografía plasmada en la arquitectura y en la pintura mural del sitio, así como en los distintos artefactos encontrados en excavaciones arqueológicas. Estas representaciones gráficas han sido motivo de diversas lecturas e interpretaciones. Mediante este trabajo busco contribuir a su entendimiento desde una perspectiva en donde se puedan observar las dinámicas sociales inherentes en los eventos bélicos incorporados en la iconografía de Chichen Itzá.

Marengo, Nelda Issa [330] see Romero, Ashuni

Marin Jave, Rosa [17] see Pozorski, Thomas

Marino, Marc (University of Arkansas), Lane Fargher (Centro de Investigación y de Estudios Avanzados de), Nathan Meissner (University of Southern Mississippi), Verenice Heredia Espinoza (Centro de Estudios Arqueológicos, El Colegio de M) and Richard Blanton (Purdue University)

[31] Commercialization, Consumption, and Political-Economic Strategies in Late Postclassic Mesoamerica: A Comparative Study of Access to Projectile Points at Taxcalkan and Santa Rita Corozal

Over the course of the Postclassic Period (A.D. 950—1521), commercialization was on the rise in ancient Mesoamerica, reaching its apex at the time of contact with Europeans. Extant information indicates that both interregional trade and regional market integration increased during this time, especially during the Late Postclassic (A.D. 1250/1300—1521). Yet, researchers have little comparative published information on household consumption from well-excavated residential contexts for this period. In this paper we compare access to formal lithic tools (projectile points) at two Late Postclassic sites with differing governing structures: Taxcalkan (located in Central Mexico), and Santa Rita Corozal (located in coastal Belize). Specifically, we investigate the degree to which political-economic factors affected production and access to projectile points, including the accessibility of non-local raw materials used in their production, and their distribution among various households. We test whether households with differing social statuses monopolized or controlled finished points, and if the raw materials used to produce them varied among households on the basis of status. Finally, we consider the degree to which these patterns correlate with differing political-economic strategies employed by governing officials at the study sites.

Mark, Andrew (Boston University), Justin Holcomb (Boston University) and David Carballo (Boston University)

[48] Towards a Wave-of-Advance Model for Predicting the Spread of Prismatic Blade Technology in Mesoamerica

The diffusion and spread of material culture is a cornerstone of archaeological research, particularly understanding the variables which dictate the structure of dispersal. Recent evolutionary approaches have sought to address technological spread through mathematical modeling. One model, the reaction-diffusion model, suggests diffusion occurs at the population scale as a wave-of-dispersal. While previous researchers demonstrated the efficacy of this approach regarding the peopling of a landscape, there remains a need to demonstrate how the model can shed light on the spread of ideas. In this study, we seek to test if the dispersal of prismatic blade technology throughout Mesoamerica occurred as a wave-of-dispersal. Our first
objective is to create a database containing the variables required for analyzing the wave-of-advance. Next, we developed general rates at which we predict ideas to have spread based on ethnographic data. Finally, we analyzed the database information and the predicted rates together, testing the validity of using a wave-of-advance model to predict the spread of blade technology. The results enable us to better understand technological change and exchange relations in Mesoamerica. By generalizing the results we can engage in larger theoretical debates such as the relationship between the development and transmission of ideas.

Marken, Damien (Bloomsburg University) 

[80] Classic Maya Urban Settlement Dynamics: Planning and Mobility Introduced  

Following decades of debate, most scholars accept Classic Maya cities as the hearts of spatially expansive, low-density urban settlements. This introductory paper will summarize past and current perceptions of Maya urbanism, emphasizing potentially overshadowed considerations of urban planning, mobility, and community dynamics—fundamental cross-cultural features of urbanization—and their detection in lowland settlement patterns. The recent florescence of research deriving insight from urban theory has been positive as it reminds scholars that Maya cities were urban phenomena, not simply political capitals, and must be treated as such. But the trend to emphasize monumentality in urban layout continues, to the near exclusion of other processes critical to urbanization, such as mobility, neighborhood community building, and resource management. There is a strong need for increased residential excavations across Classic urban landscapes, and we should be prepared to develop audacious programs following recent LiDAR surveys. Maya urbanism was a complex mesh of social, economic, ritual, and political networks, balanced between potentially conflicting household and social group loyalties, resulting in changing urban structures through time and space. It will require a long-term disciplinary commitment to household and neighborhood excavations to fully uncover the temporal and regional dynamics of Classic Maya urban systems.

[80] Chair

Marken, Damien [80] see Menéndez, Elsa

Markert, Patricia (Binghamton University) 

[58] A Tale of Two Places in D’Hanis, TX: Combining Linguistic Anthropology and Historical Archaeology to Study Place-Making on the Texas Frontier

In this paper, I discuss an archaeological approach to place-making that incorporates elements of linguistic anthropology, drawing from narrative analysis and Bakhtin’s chronotope to analyze oral histories from a small town in southwest Texas. D’Hanis originated as an Alsatian colony on the Texas frontier, one of four settled by empresario Henry Castro in the 1840s. By the 20th century, the town had not simply transformed but moved—the railroad had caused a rupture in the settlement that resulted in an “old” and “new” D’Hanis, two competing towns with the same name approximately a mile apart. Today, few structures in Old D’Hanis remain, while New D’Hanis retains the aesthetic of a western railroad town. Archaeologically, this paper examines the spatial and material strategies that residents used to create two places out of one. Narratively, it examines how the town narrates a sense of place in the past and present. This paper aims to explore how we, as archaeologists, might approach the intersections of material and narrative strategies in our studies of place. Further, it suggests that linguistic anthropological methods and theories offer opportunities for historical archaeologists to better understand how people create and maintain places in space and through time.

Marketou, Toula [298] see Vitale, Salvatore

Marks, Theodore [32] see McCall, Grant

Marks, Yvette (Department of Archaeology, The University of Sheffield) and Roger Doonan (Department of Archaeology, The University of Sheff)

[89] Copper Smelting in the Early Bronze Age Aegean

Our understanding of Early Bronze Age copper smelting in the Southern Aegean has improved dramatically in the last two decades through a combination of fieldwork, laboratory analyses and experimental reconstructions (Betancourt 2006, Bassiakos, 2007, Pryce 2007).

The currently accepted model for primary copper production has been largely based on the outcome of an experimental campaign (Pryce et al. 2007). While this study accepts the value of experimental archaeology it challenges the current model and the specific manner in which the “Aegean perforated furnace” is used. The new study has implications for ideas of resource perception and establishing the techno-typology for early copper metallurgy in the region.

These implications are discussed within the context of the early transmission of metallurgy across Eurasia and the diversity of early technologies. The Aegean region is shown to be a critical location for providing a perspective on the specifics of transmission.

[89] Chair

Markussen, Christine

[286] Discussant

Markussen, Christine [286] see Simon, Katie

Marquardt, William, Victor Thompson (University of Georgia), Karen Walker (Florida Museum of Natural History), Michael Savarese (Florida Gulf Coast University) and Lee Newsom (Flagler College)


The Calusa of southwest Florida were the most complex and powerful society in Florida during the sixteenth century AD. They relied for protein not on agriculture, but on aquatic resources harvested from shallow-water estuaries. Our interdisciplinary team is exploring the evidence for surplus labor to construct canals, maintain and rebuild structures, procure resources from faraway mainland forests, and coordinate and oversee the engineering of “watercourt” structures that probably functioned as fish traps and/or fish storage areas. We interpret this commitment to place as a way that successive members of a lineage transmitted political and social capital.
Marquardt, William (University of New Mexico, United States Forest Service), Alexis O'Donnell (Maxwell Museum of Anthropology), Karen Price (Maxwell Museum of Anthropology), Katie Williams (Maxwell Museum of Anthropology) and Heather Edgar (University of New Mexico, Department of Anthropology)

[M306] The Follo Railroad Environmental Monitoring Project in Medieval Oslo, Norway
In conjunction with a large urban infrastructure project, renewing the Norwegian railroad through the listed monument of the Medieval town of Oslo, an environmental monitoring programme was established. The Medieval town consists of extensive archaeological remains preserved in situ. The monitoring programme focusses on the following questions: What is the influence of an encased railroad next to a medieval monument? How are the unsaturated conditions influenced next to the new railroad? And how does such a large urban infrastructure project affect the preservation conditions of the archaeological deposits in the unsaturated zone further inside the monument? This paper presents the archaeological setting, the installed equipment and monitoring plan as well as the first results of the long-term monitoring that started in 2016.

Martin, Cecelia [94] see Carr, Philip

Martin, Erik (University of Utah), Daron Duke (Far Western Anthropological Research Group, Inc.) and Andrew J. Hoskins (Far Western Anthropological Research Group, Inc.)

[Trends in Paleoindian Projectile Point Technology during the Pleistocene-Holocene Transition at the Old River Bed Delta, UT]
The fossil Old River Bed Delta, located in the Great Salt Lake Desert, UT, contains one of the highest concentrations of Paleoindian archaeology within the Great Basin. Occupied from 13,000 cal B.P. until its desiccation around 9,500 cal B.P., this productive marshland provided a wide array of dietary resources utilized by the region’s inhabitants during the Pleistocene-Holocene transition. However, changes in climate, local hydrology, and human populations during this dynamic period likely substantially altered the distribution and relative abundances of these resources. Here we analyze a large sample of projectile points from the delta’s distal portion to examine how hunting technology and behavior responded to this hypothesized shift in dietary resources. We propose that the observed trends of decreasing point size and manufacture investment through time are the result of Paleoindian hunters increasingly targeting smaller prey species (Odocoileus hemionus, Ovis canadensis, Antilocapra americana) as larger prey went extinct (Mammuthus, Bison antiquus) or decreased in abundance (Bison bison).

Martin, Fabiana Maria (CEHA-UMAG), Francisco Juan Prevosti (CONICET-CRILAR) and Luis Alberto Borrero (CONICET-IMHICIHU)

[7] Cueva Nordenskjold, Ultima Esperanza, Chile: A Late Pleistocene Faunal Assemblage
Cueva Nordenskjold is a cave located in the Cerro Benitez, at Ultima Esperanza, Chile, above 150 masl, and accordingly beyond the highest stand of the Late Glacial Consuelo paleolake. The study of its Late Pleistocene faunal remains -Myloodontinae, Hippidion saldiasi, Camelidae, Panthera onca mesembrina and a large undetermined carnivore- is crucial for the understanding of the process of biological colonization of the Cerro Benitez area, where ephemeral Late Pleistocene human occupations were defined. The faunal assemblage appears to be mainly the result of carnivore activities.

Martin, Samuel

[A Relationship between Seasonal Flooding and Raised Agricultural Fields in the Llanos de Mojos, Bolivia]
The Llanos de Mojos, Bolivia, a seasonally flooded savanna region in the western Amazon lowlands, has several types of artificial landscape modifications that point to a significant pre-Columbian occupation with some approximately as old as 500BCE. These earthworks include 40–50,000 raised fields which were used as a regional-wide agricultural technique to grow a variety of crops. This paper focuses on the relationship of these fields to their hydrological environment. Using GIS in conjunction with digitized data from the Proyecto SIG Arqueológico del Beni and the Dartmouth Flood Observatory at the University of Colorado this paper analyzes large-scale regional variation in the presence of flood water and the placement of raised fields within distinct hydrological constraints. It is suggested that their construction is associated with the amount of nearby regional flooding that is the result of topographical, geomorphological, and riverine relationships. These separations can be seen along distinct intraregional lines, dividing the denser fields in the northern part of the Llanos from the less dense southern section. By focusing on these kinds of seasonal hydrological distinctions, the results demonstrate that crop cultivation may have relied on the placement of raised fields to facilitate water management.

Martin, Simon (University of Pennsylvania Museum)

[209] Stepping Out: The Maya Underworld and the Red Temple at Cacaxtla
The murals of Cacaxtla, Tlaxcala, have long thrown the issue of Central Mexico-Maya interaction into high relief. There we find the richest evidence of interaction between these two cultural zones, though whether this amounts to citation, appropriation, fusion, or immigration is open to debate and contestation. This paper re-examines the stairway murals of the Red Temple for what they tell us about a Maya world seen through a Central Mexican lens. A particular focus falls on the link between image and physical space in these paintings, which make them experiential as well as visual.
INDIVIDUAL ABSTRACTS OF THE SAA 83RD ANNUAL MEETING

Martin, Stephanie (University of Arizona)

Least Cost Path Analysis of Maritime Routes in the Ancient Aegean

The Least Cost Path analysis in ArcGIS has been a critical tool in archaeological reconstructions of movement and connectivity, but until recently these analyses have been limited to land travel. From the Neolithic onwards, sea travel was an equally important mode of transportation in the Aegean and wider Mediterranean. In this study, I utilized the Least Cost Path tool in ArcGIS to model sea travel in the Aegean.

Bathymetric data and speed and direction of local wind and currents were inputs in a Least Cost Path analysis which examined sea routes of man-powered vessels in the Aegean Sea. Using May averages to approximate optimum sailing weather and known Bronze Age port cities, a surface raster was created from scaled bathymetric data and a cost surface raster was based on current speed and direction and wind speed and direction. The application of a Least Cost Path analysis for sea routes successfully modeled maritime routes around the Aegean for a man-powered vessel. The model can be improved with future research and the creation of a specific sea travel cost algorithm, and incorporating sailing parameters.

Martín, Worthy (IATH, University of Virginia), Carrie Heitman (University of Nebraska) and Paul Reed (Archaeology Southwest / Salmon Ruins)

The Salmon Pueblo Archaeological Research Collection (SPARC) Project: Making the Data Accessible

Supported by the National Endowment for the Humanities, the Salmon Pueblo Archaeological Research Collection (SPARC) Project was initiated in 2015 by the Center for Digital Research in the Humanities at the University of Nebraska Lincoln, the Institute for Advanced Technology in the Humanities at the University of Virginia, Salmon Ruins Museum, and Archaeology Southwest. The primary goal of the SPARC Project is creation of an online digital archive of materials from excavations at Salmon Ruins in the 1970s. The finished archive will contain more than 6,000 scanned images (photographs, maps, drawing), roughly 30,000 pages of scanned original Salmon field forms, and a portal allowing access to more than 250,000 lines of data from dozens of Salmon databases. SPARC will be go live on the Internet in mid-2018. The variety of archaeological methods: discovery and recording, applied to the Salmon Ruins site over the years present interesting challenges for creating an internet accessible archive of the discoveries at this important “Outlier” to the primary Chacoan great houses. In part, this paper will discuss the implementation of IIIF for both documents and images, divergent epistemologies with regard to object/image data and metadata, and the ethical and political issues involved in this project.

Martindale Johnson, Lucas (Far Western Anthropological Research Group Inc.), Daron Duke (Far Western Anthropological Research Group Inc.), Jennifer DeGraffenried (U.S. Army Dugway Proving Grounds) and Bruce Kaiser (U.S. Army Dugway Proving Grounds)

Examining Handheld XRF Inter-instrument Variation: A Collaborative Project Using a Large Assemblage from the Great Basin

Collaborating with multiple XRF instruments enables larger than normal datasets to be analyzed in a short period. The portability of instruments is important to analysts working together in one location as groups of specimens can be analyzed simultaneously. However, certain protocols must be followed so there are no discrepancies among instruments. We present our project’s methodological controls, such as shared source library and calibration, and preliminary results. The study consists of over 6,000 obsidian and fine-grained volcanic artifacts from Paleoindian assemblages from western Utah’s Old River Bed delta. We demonstrate that inter-instrument variation is insignificant within our regional context when all analysts follow strict instrument controls.

Martinez, Desiree (Cogstone Resource Management)

Oh Captain, My Captain: Transforming the Practice of Archaeology

For many Native American community members, becoming an archaeologist can be a difficult choice. This is especially true if you have witnessed the wanton destruction of your sacred sites, the disrespectful treatment of your ancestors by archaeologists and have been taught by your family and community to see archaeologists solely as grave diggers. My review of the archaeological literature and interaction with archaeologists during the 1990’s only supported this perspective, bringing doubt to my ability to successfully enter an unwelcoming discipline. However, my introduction to Larry Zimmerman’s writings such as “Made Radical by My Own” and “Sharing Control of the Past” was a ray of hope to me; that a non-archaeologist understood and fought for the inclusion of Native Americans and their perspectives in the practice of archaeology. This presentation will describe how Larry Zimmerman has helped transformed archaeology into a more inclusive one through his scholarship, support and mentorship of not only the author but other Native American archaeologists and cultural practitioners.

Martinez, Maria

Accessing the Object Collections at the Smithsonian’s Institution National Museum of the American Indian and National Museum of Natural History

As museum object collections continue to be an important mainstay to anthropological research, collections access is in high demand, and can sometimes feel like a daunting task. This is particularly relevant when working with large museums such as the Smithsonian Institution. Knowing where collections are housed, the scope of collections, and means of access for data including collections history, images, and archival material contributes significantly to achievement of research goals. The National Museum of the American Indian (NMAI) and the National Museum of Natural History (NMNH) are stewards to both archaeological and ethnographic collections, many of which are unique. NMAI’s object collections represent over 1200 Indigenous tribes/communities from throughout the Western Hemisphere, whereas NMNH curates historic and prehistoric collections from around the world. This paper will offer an overview of each museum’s collections, including some of the most important highlights, each museum’s online access portals, and policies and procedures for accessing the collections for research, including culturally sensitive collections and scientific analyses. This presentation provides a great opportunity for junior and senior scholars to explore and access the rich Smithsonian collections.

Martinez, Claudia


El estudio enfocado en la arqueología de la infancia nace con la necesidad de conocer el papel desempeñado por los niños en la sociedad. Es a partir de este enfoque que se han ido perfeccionando los diferentes métodos y técnicas para investigar la infancia en el pasado. Los niños pertenecen a uno de los sectores de población más vulnerable social y biológicamente, es por ello que en los trabajos arqueológicos se comienzan a considerar como objeto de estudio, sobre todo cuando se busca conocer el modo de vida que llevó una sociedad del pasado.

La región de estudio en la que se enmarca esta presentación es la llamada Centro-Norte, localizada en la Frontera Norte de Mesoamérica. Las investigaciones en esta región respecto a este enfoque no existían, hay estudios que delimitan las interrelaciones culturales entre regiones, otros se enfocan en conocer patrones de asentamiento, manufactura de cerámica, lítica, concha y hueso, para conocer las tecnologías que desarrollaron.
respecto al análisis de los enterramientos existen estudios pero ninguno enfocado en los infantes. Por lo tanto, el objetivo de este trabajo es presentar los resultados del análisis osteológico y funerario de los infantes recuperados en el sitio de El Ocote, Aguascalientes.

Martínez Tunon, Antonio [239] see Marcucci, Derrick

Martinez Vazquez, Dante Bernardo [55] see Castillo Flores, Fernando

Martínez-Bentley, Leila [293] see Hsu, Teresa

Martinez Vazquez, Dante Bernardo [55] see Castillo Flores, Fernando

Comcaac Collaborative Ethnohistory: The Importance of Objects, Places, Routes and Leaders

In collaboration with Comcaac community members of Sonora, Mexico, oral accounts are combined with archival documents and with archaeological survey. For the colonial period in Sonora, historians and anthropologists have mostly relied upon archival documents written by representatives of the Spanish empire, in addition to information from historical archaeology. The Comcaac knowledge immersed in oral traditions balances some of the inherent biases in the Spanish documentary record, and sheds light on aspects of their history where the documents are mute. Initially we describe Comcaac historical accounts about the “Cazooopín” (Spaniards) that mention first encounters with Spanish sailing ships and their opportunistic adoption of Spanish material culture. We then discuss the relevance of place and routes among the different historical narratives. To finalize with a discussion on how, both Comcaac oral accounts and the documentary record, provide ample descriptions of leaders. It is argued that the importance of Comcaac masculine war leaders is a cultural practice similar in some respects to Spanish and Western emphases on prominent individuals. Through collaboration multiple spatial and temporal configurations documented in our research provide unique insights into the role of subject/object-place relationships and practice in cultural continuity, tradition, and cultural transformation.

Martinón-Torres, Marcos (UCL Institute of Archaeology)

Modelling the Innovation and Extinction of Archaeological Ideas

The history of archaeology is often told as a sequence of prominent individuals and their publications. Due to the focus on big names and big papers, the diversity of archaeological publications is often underestimated. Here we introduce a quantitative method that illuminates historical trends in archaeological writing by investigating a large number of journal articles. We use a Bayesian framework developed for estimating speciation, extinction, and preservation rates from incomplete fossil data. We model archaeological ideas within this framework by equating citations of archaeological literature to occurrences in the fossil record. We obtained reference lists for 12,000 journal articles published between 1977 and 2017 and explored the chronological distribution of cited papers to identify periods of innovation and extinction. We discuss how our modeling approach helps to quantify the diversification of archaeological publications and our broader understanding about the history of archaeological thought.

Mascia, Sara (Historical Perspectives, Inc.)

A House Divided: John Brown’s Birthplace and the Path to Freedom

On December 2, 1859, John Brown was hanged following his conviction for murder, slave insurrection, and treason resulting from his raid on a federal arsenal in Harpers Ferry, Virginia two months prior. Brown anticipated and hoped that his actions might spur a rebellion that would spread throughout the South bringing freedom to all enslaved persons. To some people he was a murderous lunatic; to others he was a martyr for the abolitionist cause; and, to many he was a hero whose actions sparked the onset of the Civil War. Brown was willing to commit such extreme acts, including the deaths of his two sons because of his belief that slavery should be abolished at all costs.

Following his execution, John Brown’s birthplace in the hills of northwestern Connecticut became a pilgrimage destination for those who revered the man and the principles he championed. Although the house itself was destroyed by fire in 1918, the site has remained a destination for sightseers and admirers and is now a Connecticut Archaeological Preserve. In order to better understand Brown’s motivations, one must examine his early life and the people and ideas that that most influenced him.

Mashaly, Hamedy [32] see Silverstein, Jay

Mason, Owen (INSTAAR University of Colorado)

Chair
Individually Abstracts of the SAA 83rd Annual Meeting

Masson, Marilyn (University at Albany SUNY)

[109] The Significance of Debt to Household and Political Economies of Postclassical and Contact Period Maya Societies

Debt was important to late Maya societies in religious and political terms. This paper explores the many facets of debt that tied together household and regional economies, including bottom-up mechanisms employed by families and communities, as well as top-down institutions that garnered support for religious and political bureaucracies. Graeber’s distinction between moral and impersonal economies outlines a comparative continuum with profound implications for issues of human rights in the past. Where did Postclassical and Contact Period societies fit on this continuum, and does this approach help to revise the mercantile model of greater prosperity that tends to characterize this era?

[109] Chair

Mastran, Chuck (John R. White Community Archaeology Association)


An archaeological field investigation, inaugurated by John R. White of Youngstown State University in 2007, ultimately revealed the remains of an antebellum, single tuyere, charcoal iron blast furnace located in Mercer County, Pennsylvania. The facility, originally called the Seth and Hill Furnace, is presently known as the Springfield Furnace by locals. The configuration, constructed generally of heavy ashlar and rubble detritus, is listed historically as utilizing heated air, or ‘hot blast’ (Lesley 1859:108). Hot blast was a technical innovation in the 1830s geared to economize on time, labor, and fuel and thus increase iron production. Revelations include the discovery of an intact hearth-forehearth locus associated with a preserved tuyere embrasure that is capped by an integrated, protective iron tuyere box within the base of the hearth proper. Further, an intact “Staffordshire” type water-cooled breast was discovered. The untimely passing of White in 2009 created a vacuum for his students and volunteers from all walks of life. The group of dedicated field technicians created the John R. White Community Archaeology Association to continue this important work. The present report is an attempt to educate a potential readership about ‘lost worlds’ in their own back yards.

Masucci, Maria (Drew University)

[141] Pottery Rituals and Ritual Pottery: Ceramic Production, Use, and Disposal among the Guancavilca of Coastal Ecuador (AD 800–1532)

The Colonche Valley of coastal Ecuador represents an east-west corridor as well as the apex of north-south interconnected valleys. Hilltop sites of the Manteno-Guancavilca (AD 800–1532) have been reported across the high flat ridgetops of these valleys since the early 20th century. Recent comparative analysis of surface vessels at newly discovered sites in the eastern Colonche Valley demonstrates the coalescence of examples of all types found at sites throughout the valleys. Mineralogical and elemental analyses in conjunction with raw material sourcing and formal and contextual analyses of the ceramic component provide a window into ritual practices, societal transformation, and intraregional interaction. Preliminary results suggest that the formal and paste variants represent sub-regional or community distinctions and that the sites in the eastern Colonche Valley may have represented a social and ritual confluence. The ceramic analysis and results are contributing to interpretations of the way in which social and ritual practices were central as part of and contributing to societal reformulations across a broad landscape of southern coastal Ecuador, culminating in what is known as the Guancavilca cultural phase. The vessels represent the unique communities but there presence together represents the ethnogenesis of a broader community identity.

Masur, Lindi (University of Toronto)

[86] Food Production in the Borderlands: Paleoethnobotanical Investigations of the Western Basin Tradition in Ontario

This paper presents the results of a paleoethnobotanical analysis of the early Late Woodland (A.D. 1000–1300) Western Basin Tradition (WBT) sites informally known as the Arkona Cluster. Relatively little is known about WBT human-plant interaction as compared to their maize-bean-squash cultivating Iroquoian neighbors. Culture-historical models of the WBT are proving to be outdated, overemphasizing the supposed difference between WBT “hunter-gatherer” subsistence strategies and Iroquoian farming. Recent isotopic analyses have suggested archaeologists have been underestimating the amount of maize consumed among the WBT peoples at this time, and limited excavation and botanical analysis has hindered the revision of our understanding of their subsistence practices. Plant remains from the Arkona Cluster sites, however, show WBT peoples were indeed cultivating maize, calling into question our conceptualization of their food production, landscape construction, and mobility. Paleoethnobotanical methods were employed to elucidate plant-human interaction of these culturally-distinct peoples residing at the periphery of Iroquoian territory and influence. This paper will present macrobotanical data from flotation sampling, as well as micro-fossil (starch grain) data from ceramic and groundstone residues to provide more meaningful cross-cultural comparisons of food production during the early Late Woodland period in Ontario.

Matarazzo, Tiziana [294] see Singer, Zachary

Math, Kathryn

[33] Fang & Feather: The Origin of Avian-Serpent Imagery at Teotihuacan and Symbolic Interaction with Jaguar Iconography in Mesoamerica

The Central Mexican city of Teotihuacan rose to prominence in the last century BC and lasted for six centuries. The civic plan was arranged around two main perpendicular avenues lined with temples and public monuments. By the third century AD, the population was housed in apartment compounds. On the walls were murals depicting omatly dressed administrators, armor-clad warriors, and fantastic creatures. These murals were the birthplace of the Feathered Serpent. My research proposes that the Feathered Serpent of Teotihuacan was a new deity serving as a symbol of the city; conceived in direct opposition to the jaguars used to symbolize kingship in contemporary Mayan polities. Past studies have treated the murals of Teotihuacan as either literal representation of supernatural deities or as a set of signs to be translated like a language. This study concludes that there is an intermediate interpretation wherein the feathered serpent is both a god and a symbol of identity. This is found in the representations of Teotihuacanos outside of Teotihuacan and outsiders within the barrios of Teotihuacan. Thus, Mesoamerican states not only foregrounded concepts of community identity, but also actively recognized those of other polities they came into contact with.

[33] Chair

Math, Rod [159] see McCabe, Chris

Mathers, Clay (The Coronado Institute)


For more than 170 years, archaeologists and historians have offered a range of arguments in an attempt to locate the site of the 1541 siege of Moho. Although historical records of the Vázquez de Coronado entrada provide tantalizing clues about the whereabouts of this major battle, generations of scholars have often used an odd amalgam of description, assertion, and evidence to postulate the geographic location of this significant historical site. Carroll Riley’s interest in the deep history of the American Southwest and Mexican Northwest—like Bandelier, Hodge, Kidder, Hewett, and others before him—intersected with this persistent question. The definitive identification of Moho, and the reasons that has now become possible, would have interested him intensely. Assembling the archaeological and historical evidence to not only position Moho in space, but locate it in an historiographic milieu of ideas, and in social fabric of sixteenth-century Native-European interactions, are the primary goals of this discussion. The paper emphasizes the value of three key components in constructing successful analytical approaches to the Early Historical Period and addressing the rich veins of...
complexity inherent within it, including: nested scalar analyses using archaeological and other multivariate data, wide-ranging comparison, and thick prediction.

Matthews, Jennifer (Trinity University)

[173] Taming the Maya Jungle: Decauville Railroads in 19th and Early 20th Century Yucatán

Starting in the nineteenth century, industries like henequen, chicle, hardwoods and sugarcane required the installation of narrow-gauge railroads across the Yucatán Peninsula. Mules, horses or people pulled low and flat, four-wheeled wooden carts along these rails, which connected haciendas, ports, and remote jungle camps. These rails brought supplies from “civilization” or commodities out of the forest for distribution. This paper will explore the role that railroads played during this period. For the elites who ran commodity industries, Decauville rails were part of the modernizing infrastructure used to “tame” the jungle and speed up labor production. For the workers, the rails were laid atop stone roads built by their ancient ancestors, along jungle paths that their families had walked centuries, or through agricultural fields on lands formerly theirs. They were a tool used to exploit labor in a brutal process of forest and agricultural extraction for global commodity consumption, and a symbol of their loss of property rights, resources and the ability to feed their own families. And yet, in some cases, the rails that traversed into the forest allowed Maya workers to be away from the watchful eye of managers, hidden away in the untamable forest.

[173] Chair

Mathiowetz, Michael [68] see Searcy, Michael

Mathwich, Nicole (University of Arizona)

[195] Range Limits: Semi-feral Ranching in Spanish Colonial Arizona

In North America, the introduction of livestock as part of the Columbian Exchange had profound social and ecological consequences for indigenous communities. Historical ecology offers a holistic landscape approach to a phenomenon that archaeologically has often been viewed through shifts in diet and butchering practices. This study examines the creation of range practices at Spanish colonial Mission Lost Santos Angeles de Guevavi, near what is today Nogales, Arizona. Using multiple lines of evidence, this paper proposes a set of indicators to identify semi-feral ranching in both the archaeological and historical record. Isotopic evidence shows that semi-desert grasslands were most affected by the introduction of cattle and sheep. Faunal and historical analyses suggest cattle ages were loosely monitored, and animals were cut back at an older age than optimal for meat and grease. These findings indicate a low investment strategy, which may have helped indigenous groups maintain traditional agricultural and gathering practices, augmenting their resilience in the colonial period. Finally, this paper explores how semi-feral cattle ranching was sustainable under historical conditions, but has since become an ecologically and politically problematic practice in the modern American West and used to justify U.S. federal interventions without community consultation on reservations.

Matsoo-Smith, Elizabeth [51] see deFrance, Susan

Matsumoto, Mallory (Brown University), Andrew Scherer (Brown University) and Omar Alcover (Brown University)

[163] Fortified Capitals: Understanding Defensive Systems at Piedras Negras and Yaxchilan

Prior reconnaissance efforts in the Middle Usamacinta River region have identified a series of low walls associated with Tecolute, La Pasadita, and other border sites in the Yaxchilan kingdom. Similar defensive features have also been identified at the Piedras Negras secondary center of La Mar. These walls are interpreted as the foundations for wooden palisades, and served to protect not only immediate communities, but also the kingdom at large. However, this paper presents the first evidence that Piedras Negras and Yaxchilan, the polity capitals, were fortified as well. Walls near both sites have been identified through survey, and defensive features at Piedras Negras have been excavated to better understand their chronology, construction, and function. Moreover, recent work at the Late Preclassic site of Macabivero, located in the southern reaches of the Piedras Negras kingdom, highlights the deep temporal depth of fortifications in the region. These findings suggest a broader, regional tradition among Maya communities of using the landscape as an instrument in political interactions, and encourage incorporation of the natural environment into studies of Classic Maya politics.

Matsumoto, Yuichi [178] see Tsurumi, Eisei

Matthes, Jill (University of Zurich)

[299] Architecture of Pre-Columbian Northeast Honduras

In 2017, the postclassic settlement of Guadalupe on the north-east coast of Honduras revealed remnants of wattle and daub (bajareque) constructions. This was an important finding as information on precolonial architecture in north-east Honduras has been scant, due not only to the low number of archeological investigations in the area, but to the use of highly perishable materials in these constructions. Despite this, recent ethnographic reports have provided indispensable information about colonial-era materials and traditions. This paper examines the archaeological record of Guadalupe along with archaeological, ethnohistoric and ethnohistoric reports to examine what viable information can be retrieved on precolonial architecture in north-eastern Honduras. It reviews a range of architectural findings discovered through archaeological investigations, and offers a comparative analysis with findings from adjacent (predominantly southern) regions where traditional construction techniques are still commonplace today. This research stands to reveal new and valuable information about the construction techniques, traditions and architectural history of Guadalupe.

Matthew, Laura and William Fowler (Vanderbilt University)

[275] Yet Another Tale of Two Cities: Santiago en Almolonga and San Salvador in the Early Sixteenth Century

The first Spanish foothold in Guatemala took root during the first invasion of Guatemala led by Pedro de Alvarado in 1524 at the Kaqchikel city of bimche. Historians regard this as the first capital of Santiago de los Caballeros de Guatemala. After its location at bimche, Santiago had two sequential locations near Olintepeque and in Chimaltenango. The ruins of the first permanent Santiago de Guatemala, founded in 1527 in the Valley of Almolonga and destroyed in 1541, lie beneath the modern village of San Miguel Escobar. An indigenous town of several hundred resettled Mexican auxiliaries and their families located in the village of Almolonga or “Ciudad Vieja,” grew up about two kilometers to the west. The acta de fundación of Santiago implies a grid-plan layout, but we know almost nothing of the spatial organization of these centers since they lack detailed archaeological investigation. We know them primarily through extensive historical research. In contrast, San Salvador, founded by an expedition from Santiago in 1528, also known archaeologically as “Ciudad Vieja,” has been the subject of detailed archaeological investigation as well as historical research. Contextual comparisons between these two closely related early Spanish colonial urban centers has proven very useful.

Matthews, Christopher (Montclair State University)

[201] Ethnography, Routine Archaeologies, and Social Justice Research

As the organizers of this session argue, understanding the ethics of engagement in archaeology is maturing rapidly and we are reaching the point where our community engagements are no longer self-evident. Rather we increasing understand that they need interrogation and critique, and this needs to be an embedded part of our routines. This paper will argue that knowing the nature of our engagements requires a deep ethnographic reading
of the contexts of our research and the multiple roles it plays in the communities we engaged in our research. This approach draws from the transcendental empiricism described by Deleuze, such that what we do in becoming engaged, even in the most routine way, requires consistent analysis of how those we engage with come into view and why they become open to collaboration. Such an analysis is the basis of ethnographic archaeology, or the effort to understand how archaeology is and can be an agent in the communities we work with. I illustrate this approach in a review of my engagement with the Native and African American community in Long Island, New York.

Matthiesen, Henning [135] see Harmsen, Hans

Mattiol, Tommaso [136] see Díaz-Andreu, Margarita

Mattson, Hannah (University of New Mexico) and Jacqu Kocer (University of New Mexico)

[115] Ornaments from Room 28, Pueblo Bonito

In the late 1890s, the Hyde Exploring Expedition collected over 650 finished ornaments from Room 28 in Pueblo Bonito. UNM’s recent re-excavation of the room, including material derived from backdirt from adjacent rooms as well as intact floor and subfloor deposits, produced thousands of additional ornaments and pieces of lapidary debris. This paper presents the results of the analysis of this combined assemblage and discusses its significance in relation to ornaments found in other portions of the structure. Importantly, this study finds that Room 28 contains high frequencies of specific types of ornaments most associated with specialized depositional contexts. More specifically, the Room 28 assemblage is characterized by the co-occurrence of ornament forms and materials that otherwise distinguish high-status burials (particularly Room 33) and kiva offerings.

Mattson, Hannah [190] see Murphy, Beau

Matute, Varinia [252] see Acuña, Mary Jane

Maughan, Gideon [105] see Freeman, Jacob

Mauldin, Raymond (UT San Antonio), J. Kevin Hanselka (Texas Department of Transportation), Cynthia Munoz (Center for Archaeological Research, UT San Antonio) and Leonard Kemp (Center for Archaeological Research, UT San Antonio)


Baker Cave is a dry rock shelter with exceptional organic preservation in the Lower Pecos Canyonlands of southwest Texas. The site is best known for high floral and faunal diversity in a Paleoindian-age hearth excavated in 1976, the first of three seasons (1976, 1984, 1985) the Center for Archaeological Research (CAR) worked at the site. Only those 1976 excavations have been reported in any detail. This poster summarizes analyses to estimate mast resource use over time at Baker Cave based on samples from the 1984 and 1985 collections, curated at CAR. Field notes for the most recent excavations are currently unavailable, and much of the 1984 stratigraphy is rumored to have been mixed. The present analysis emphasizes an excavated area with multiple radiocarbon dates that fall between 877 +/- 26 (905–728 cal BP) and 9,143 +/- 38 RCYBP (10,408 and 10,299 cal BP).

Through quantification (e.g., counts, ratios, weights) of nut remains in this deposit, and direct dating of multiple samples of this resource class for temporal control, we develop a gross measure of nut resource use over a 10,000-year period.

Mauldin, Raymond [105] see Hard, Robert

Maurer, Kathryn [98] see Connell, Samuel

Mauricio, Ana (Pontificia Universidad Católica del Perú)

[64] Los Morteros and Pampa de las Salinas: Early Monumentality and Environmental Change in Preceramic Peru

Los Morteros is a preceramic archaeological site located on Pampa de las Salinas, in the lower Chao Valley, north coast of Peru. Archaeological excavations in 1976, Los Morteros was identified as a “stabilized dune” whose top was used as a cemetery for pre-pottery people around cal. 5000 BP. Excavations in 2012 and 2016 have uncovered a very long and complex history of occupation of Los Morteros which includes the presence of early adobe monumental architecture dating before 5500 cal. BP, more than 1000 years earlier than this type of architecture was previously recognized in the Chao Valley. On the other hand, Pampa de las Salinas is a preceramic archaeological complex composed by more than 20 archaeological sites and features including monumental sites, shell middens, geoglyphs, and trails, all of which combined into a preceramic ceremonial landscape. Our research has shown that the preceramic occupation of Los Morteros and Pampa de las Salinas was closely related to constant environmental transformations of the local environment.

Maxwell, Ashley (University of South Florida) and Robert H. Tykot (University of South Florida)

[185] Stable Isotope Analysis of the Diet of Romans and Langobards in the Veneto from Late Antiquity to the Medieval Period

Limited isotopic research has been conducted in the Veneto, Italy during the transitional period after the fall of the Western Roman Empire and arrival of the Germanic Langobards in the sixth century AD. Questions remain of the local implications of diet during this period of instability, when invasions and population decline occurred. Thus, this research compares Roman and Langobard populations from late antiquity to the medieval period using stable isotope analysis on bone collagen, apatite, and tooth enamel for 78 human individuals and 10 faunal remains to investigate diet in the Veneto. The results indicate variation in diet within and between the populations. The late antiquity sites are more consistent with a C3 plant diet with some marine and terrestrial animal contributions, while the Langobard sites are varied. This study shows that in late antiquity people in the Veneto still relied on a traditional Roman diet of fish and C3 resources after the fall of the Western Roman Empire; however, the incoming Langobards show variation in their utilization of resources, with some consuming more of a C4 diet with millet. This preliminary research may indicate a change in resource allocation during the initial transition into Italy for the Langobards.

Maxwell, Ashley (University of South Florida) and Robert H. Tykot (University of South Florida)

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May, Sally [113] see Brady, Liam

Mayer, James [182] see Hill, Matthew E.

Maynez, Miguel Angel [293] see Ruvalcaba, Jose Luis

Mazow, Laura (East Carolina University), Heidi Luchsinger (East Carolina University) and Kristen Rozier (East Carolina University)

[265] Adapting to Changing Resources: A Petrographic Analysis of Iron I Pottery from Tel Miqne-Ekron

The arrival of foreigners to the southern Levant at the beginning of the Iron Age (1200–1000 BCE) has been recognized in the material culture, as have changes in this material culture over time. These developments, resulting from interaction with the local population, have been interpreted as
assimilation, acculturation, creolization, and most recently entanglement. In this poster, we examine these transformations through the lens of technological, i.e. those aspects of pottery manufacture that reflect shared technical choices and transmitted knowledge. At the site of Tel Miqne-Ekron, morphological analysis has defined two distinct but contemporary potting traditions: a non-local and an indigenous one. In this study, petrographic analysis of ceramic thin sections are used to test these observations. Secondly, we examine changes over time in clay and temper use. As raw materials are tightly linked to almost all other aspects of the ceramic production process, e.g., drying time, firing, manufacturing style, vessel function, many observed stylistic changes in the non-local ceramics probably resulted from the need for foreign potters to adapt to local resources. Recognizing shifts in raw materials, and thus resource acquisition, should provide new insights into understanding the working relationships between these two co-habiting populations.

Mazzariello, Joseph, Michael Harrower (The Johns Hopkins University) and A. Catherine D’Andrea (Simon Fraser University)

Settlement pattern analysis has long remained a key means of examining the social, economic, and political relationships among archaeological sites and the way those relationships changed through time. Two common approaches involve: 1) analyzing the relative sizes of sites to evaluate possible site size hierarchies, and 2) analyzing the spatial distribution of sites across landscapes to evaluate possible clustering or dispersion. This paper applies more statistically rigorous methods that commonly employed, namely Ripley’s K Multi-Distance Spatial Cluster Analysis to evaluate possible spatial clustering/dispersion, and Bayesian Information Criterion (BIC) analysis to evaluate possible site size categories/hierarchies. These methods are performed on archaeological site data from two distinct areas of the northern Ethiopian highlands collected by the Eastern Tigray Archaeological Project (ETAP) and Southern Red Sea Archaeological Histories (SRSAH) Project. Results show strikingly similar patterns in the two areas, including an increase in the number of sites and decrease in average site size over time, site clustering only during the Pre-Aksumite period, and a lack of site size hierarchies that are predicted by traditional models of state-level settlement patterns.

Mazzia, Natalia [120] see Flegenheimer, Nora

McAllister, Christine [226] see Ives, Gay

McAllister, Martin (Northland Research, Inc.)

McBride, Kevin (University of Connecticut)

McBrinn, Maxine (Museum of Indian Arts and Culture, Santa Fe), Lenora Tsosie (Navajo Nation) and Joseph Aguilar (University of Pennsylvania)

McBride, Kevin [294] see Wilson, David

McCabe, Chris (University of Rhode Island), Rod Mather (University of Rhode Island) and Timothy Ives (Rhode Island Historical Preservation and Heritage)

McCafferty, Geoffrey (University of Calgary)
and colonization of the region. Based on these intensive excavations we have NOT identified evidence of the Pipil/Nicarao, and characteristics of the Chorotega are enigmatic at best. Although innovative features do appear beginning about AD 700, particularly in terms of polychrome ceramics and mortuary patterns, the evidence supports only limited Mexican contact but with more interaction with greater Central America. This paper will present excavated data to critique the historical sources, with the conclusion that the historical myths are not reliable chronicles for interpreting pre-Columbian migrations. [263] Discussant

McCafferty, Geoffrey [263] see McCafferty, Sharisse

McCafferty, Sharisse (University of Calgary) and Geoffrey McCafferty (University of Calgary) [263] 
Praying to the Predator: Symbols of Insect Anism on Luna Polychrome

McCafferty, Geoffrey [263] see McCafferty, Sharisse

Pacific Nicaragua has long been noted as a cultural crossroads, especially featuring historically documented migrants from central Mexico. Following ethnohistorical accounts, Nahua speaking groups colonized the Rivas area in the Late Postclassic Omotepe period. The most prominent diagnostic ceramic of this time was Luna Polychrome, often found in mortuary contexts. This paper presents a detailed analysis of over 50 Luna vessels from the Mi Museo collection. The overarching theme of the painted designs relates to the Praying Mantis. This interpretation coincides with oral traditions relating the mantis as the “Madre Culebra”, a powerful and revered predator of the insect world and closely affiliated with female symbolic authority. The association of these vessels with mortuary ritual suggest links to the Nahua deity Chiuacuatl, a goddess of death and regeneration, whose name also translates as ‘woman serpent’.

McCall, Grant (Tulane University) and Theodore Marks (University of Iowa) [32] Beer in the Desert: Archaeological, Ethnohistorical, and Experimental Perspectives on Early Beer Brewing in the Central Namib Desert, Namibia

For the better part of a century, archaeologists have surmised that beer brewing played a significant role in a range of major social and economic changes having to do with origins of agriculture. This paper examines an unusual case of early beer brewing, which likely originated during the Middle Holocene among the Later Stone Age (LSA) populations of the hyper-arid Central Namib Desert of western Namibia. In this paper, I discuss practices of modern traditional beer brewing in a desert region and offer archaeological evidence implying the relatively deep antiquity of these practices. I also present the results of an experimental program aimed at replicating these traditional beer brewing practices. Based on this combined evidence, I argue that beer brewing played a key role in helping LSA populations in the Central Namib Desert process complex and labor-intensive food resources, and that it held particular advantages in coping with the extreme aridity of the region. Finally, I explore some of the social consequence of beer brewing in the Namib, past and present.

McCarty, Aidan [85] see Libbon, Jonathan

McCauley, Brea [118] see Collard, Mark

McCheyne, Phil (Athabasca University), Julia Moss (Bryn Mawr College) and Danielle Kurin (University of California Santa Barbara) [270] Cranial Modification and Presence of Wormian Bones in Chanka Crania

The Chanka of ancient Peru (1000AD—1400AD) employed cranial modification. The most common reshaping methods involved including wrapping material around the head of an infant. This project investigates the correlation between cranial modification and wormian bones in Chanka crania. We sampled 26 adult crania and recorded qualitative and quantitative data on head shape. We also observed wormian bone presence, location, and size. Crania that exhibited significant sexual dimorphism (to be characterized as male or female) were correlated with head shape and wormian bone attributes. We used a similar approach to compare data between wormian bones in both modified and unmodified crania. There continues to be much debate regarding the etiology of wormian bones: either based solely on genetics, or a combination of environmental factors. Our initial results suggest that cranial modification is linked to (and a potential cause of) wormian bones, particularly in the lambdoid suture. These data also demonstrate a compelling link between cranial modification intensity (head elongation) and a higher frequency of wormian bones presence and ossicle size.

McCloskey, Galen (Northern Arizona University) [184] Analysis of Prehistoric Flagstaff Cultural Developments

The chronology of prehistoric cultural developments within the American Southwest has been a subject of interest and debate since the archaeologists began to study the region. Although archaeologists have recognized patterns of aggregation throughout the Southwest, the degree to which the patterns are synchronous through prehistory remains uncertain. This research focuses on the development of a cultural chronology of the prehistoric Flagstaff area ranging from A.D. 600 through A.D. 1300, constructed using tree-ring data and mean ceramic dates. The chronology tracks the development of cultural phases based on aggregation and ceramic traditions. I compare resulting chronology to other chronologies to test a theory of simultaneous development in the Southwest region.

McClung de Tapia, Emily (IIA-UNAM MEXICO) and Guillermo Acosta-Ochoa (IIA-UNAM-MEXICO) [262] Early Subsistence and Settlement in the Basin of Mexico: Preceramic and Pre-urban Indicators

The race to stay ahead of modern human impact on preceramic and early ceramic sites in the Basin of Mexico is particularly dramatic. Recent investigations at sites located in three sectors of the Basin of Mexico, all of which are threatened to some degree, contribute to a broader understanding of the kinds of communities that anticipated increased complexity in social, economic and political spheres that ultimately developed into early urban centers such as Culcúuco and Teotihuacan. Excavations at San Gregorio Atlapulco, Tepexpan and Atlica add new data to the ever-increasing picture of the range of adaptations to different environmental conditions and available resources in the Basin. While current data are still extremely fragmented, these new developments complement earlier studies such as those undertaken at Zohapilco (Niederberger), Terremote-Tlatenco (Serra Puche) and Cuanalan (Manzanilla), thus filling in some of the gaps that will be increasingly more difficult to bridge as time passes.

McClung de Tapia, Emily [59] see Acosta-Ochoa, Guillermo

McClure, Sarah, Claire Ebert (University of Pittsburgh), Emil Podrug (Sibenik City Museum) and Douglas J. Kennett (The Pennsylvania State University) [310] Identifying Animal Management Practices Using Oxygen Isotopes in Neolithic Croatia

Transhumance is a typical Mediterranean adaptation for securing adequate forage and water for domesticates by seasonally bringing animals to new pasture. However the antiquity of this adaptation is unclear. We present new oxygen isotope data from the Dalmatian coast, Croatia, to test the hypothesis that Neolithic herds were seasonally transhumant. Incremental sampling of ancient animal teeth produced data that are compared with modern isotope data of water showing altitudinal variation to assess the timing and onset of seasonal transhumance in the eastern Adriatic. [317] Discussant
McClure, Sarah [189] see Zavodny, Emily

McCool, Jon-Paul [91] see Huntley, Ashley

McCool, Weston (University of California at Santa Barbara) [75] Regional Defensive Strategies and Chronic Warfare in the Southern Nasca Region

Warfare was a prevalent phenomenon throughout the Andes during the Late Intermediate Period (AD 1000–1450; henceforth LIP). A salient research topic within broader investigations of conflict is how populations cope with chronic warfare. This presentation utilizes geostatistical analyses of architectural and topographical features to reconstruct defensive coping mechanisms among LIP groups living in 12 fortified settlements in the southern Nasca highlands of Peru. Analytical results reveal a regional defensive pattern whereby the smallest most vulnerable groups invested the most in fortifications and occupied the least accessible hilltops. Variation in fortification investment within each site was driven by differences in the accessibility of approaches leading to a site’s residential sector. This research demonstrates that LIP populations made optimal trade-offs between competing defensive variables, revealing highly patterned regional defensive strategies that vary from defensive practices observed in other LIP regions. This variation is likely the result of groups implementing defensive strategies to cope with local patterns of warfare.

McCormick, David (Yale University) [154] Cotzumalguapa’s Lithic Industry: Procurement, Production, and Distribution of Obsidian Artifacts of a Late Classic Mesoamerican Polity

Procurement, production, and distribution of raw materials loom large in discussions of prehistoric economies. Over the past three decades surface survey and excavations in and around the Late Classic polity of Cotzumalguapa revealed the presence of several obsidian dumps, the result of a large-scale lithic industry. These deposits contain production debitage from most phases of blade-core reduction but no nodules and relatively very little cortex, suggesting that obsidian came into Cotzumalguapa as prepared cores. Within the deposits cores occur in low frequencies and when found are generally nearly exhausted. The presence of both a primary prismatic blade-core and a secondary but significant bifacial and unifacial projectile point industry are indicated by both the debitage and the finished and near finished artifacts discarded in the obsidian dumps. As visual analysis suggests and geochemical analysis has confirmed the vast majority of the obsidian comes from the Guatemalan Highland sources of El Chayal and San Martin Jilotepeque; however, other sources are represented.

McCroriston, Joy (The Ohio State University), Mark Moritz (The Ohio State University), Ian Hamilton (The Ohio State University), Sarah Ivory (The Ohio State University) and Konstantin Pustovoytov (University of Hohenheim) [283] Pastoral Territoriality as a Dynamic Coupled Human-Natural System

Despite research indicating that contemporary pastoral societies are more dynamic than previously assumed, there is a tendency to view South Arabian pastoralists as timeless heirs of a stable, ancient system or along a historical continuum of response to exogenous factors like the development of civilization, introduction of camels, or global climate change. In research triggered by NGS support, we propose a new conceptual model for pastoral mobility regulated by dynamic feedback loops in human-natural systems. Inspired by archaeological data showing pulses in monument construction and settlement—indicators of territorial behavior—we argue that pastoral ecosystems are non-linear and cycle between more open and more closed regimes while grazing land cycles between more and less productive states due to changes in mobility and cover. We report new research using archaeology, paleoecology and agent-based modeling that will integrate model simulations with empirical records for a better understanding of pastoral mobility over 7000 years in Southern Arabia.

McCoy, Mark [20] see Ladefoged, Thegn

McCray, Brian (Vanderbilt University) [178] Tracing Interaction Networks in a Mosaic of Politico-Geographical Regions at the Site of Wimba, Amazonas, Peru

The ecological setting and the political formations located in the Ceja de Selva raise unique terminological and conceptual questions for the study of interaction networks. Specifically, how do we best recreate meaningful “archaeological regions” within a mosaic of ecological zones and groups with poorly known culture histories? Presenting results from the Proyecto Arqueológico Wimba—2016, this paper analyzes the chronological development of the Wimba site within the Ceja de Selva of eastern Amazonas, Peru. Based on stratigraphy, radiocarbon dates, material culture, and architecture, Wimba went through both periods of local development and periods of involvement in regional interaction networks in the Late Intermediate Period (1000–1450 CE). The site is located along strategic pathways between the highland Chachapoyas and eastern lowlands, and it includes diverse structures and open spaces that hosted communal gatherings. Excavation results show a long-term occupation that includes at least three phases of architectural construction. Recovered materials indicate that intra-regional exchange networks were most prevalent until the final occupation, when the impact of highland groups was felt. This paper argues that communal gatherings functioned as centrifugal forces in interaction networks, and most importantly helped “emplace” a regional network that incorporated multiple nearby ecological regions.

McCuistion, Emily [184] Evaluating the Radiocarbon Record of the Lower Pecos Canyonlands

The Lower Pecos Canyonlands archaeological region in southwest Texas and northern Mexico at the eastern limit of the Chihuahuan Desert is best known for the excellent organic preservation and polychrome pictographs found in dry limestone rockshelters. Radiocarbon dates from the Lower Pecos Canyonlands (LPC) can be used to address broad research questions pertaining to economic strategies (e.g., earth oven plant baking and bison hunting), and settlement patterns, as well as narrower topics such as the development of distinctive material culture (e.g., sandal types). The LPC radiocarbon data, consisting of over 500 assays, are derived from upland, terrace, and rockshelter sites excavated over the last 60 years, as well as curated objects spanning from the Paleoindian through Proto-historic periods. The majority of these data, over 300 assays, are from rockshelters. Preliminary analyses highlight the potential and limitations of the extant LPC radiocarbon data.

McCurdy, Leah (The University of Texas at Arlington) [180] Plaster Art: “Graffiti” in a Sage’s Chamber at El Castillo Acropolis of Xunantunich, Belize

In 2016, we discovered a sages’ chamber in the El Castillo acropolis at the ancient Maya site of Xunantunich, Belize. In the Late Classic Tut Building on the east side of El Castillo, all interior and exterior plaster walls are incised with “graffiti.” The total number of elements documented is nearly 300 with themes ranging from human and animal forms to glyphs and multi-figure scenes. We expect to encounter more in future field seasons. Based on a variety of factors, we view this as practice art created by scribes/sages in training and for preparatory purposes. It appears that Maya scribes were using plaster walls as chalkboards to learn iconography, experiment with features, and sketch for various projects. The term “graffiti” does not adequately reflect these finds and their implications for understanding ancient Maya culture. These ‘plaster art’ finds share many qualities and conservation concerns with rock art. Further, our recording methods parallel many of the strategies employed in rock art studies across the world. With
this paper, our goal is to present our findings, discuss labels and methodologies, and open a dialogue with rock art specialists for the benefit of “graffiti” studies in the Maya region and Mesoamerica generally.

Chair

McDaid, Christopher [42] see Seibel, Scott

McDavid, Carol (Rice University)

Reflections on Pragmatism and Academic Life

Pragmatism is a challenging approach for a host of reasons—some emerge from the cultural behaviors and institutional structures of the academy, and others from the inequities that persist in modern society. It is also a profoundly satisfying one, when it “works”. This paper will reflect upon the opportunities and pitfalls encountered while “using” pragmatism over the past 20 years (practicing public and community archaeology, working with community groups and professional societies, editing a journal, and participating in other aspects of academic and professional life).

McDonald, Erin (University at Buffalo)

Peopling the Landscape: The Pollen Record and Nomadic Pastoralism in Iron Age Ireland

The people of the Irish Iron Age are often referred to as ‘invisible’ due to their seeming absence from the archaeological record. Ceramics, so often associated with domestic activities, are not a part of the Iron Age material culture. Burials and domestic settlements dating to the Iron Age exist, but they are the exception to the generally sparse archaeological record. In the absence of sufficient material culture and settlement patterns, other means of studying the people of the Iron Age must be considered. Pollen, sampled from cores extracted from peat bogs, provide the means to reconstruct local vegetation and identify human impact and abandonment in the landscape. Examination of the pollen record from four bogs in the Midlands of Ireland show a pattern of low-intensity pastoralism, suggesting people lived in dispersed, likely nomadic, communities during much of the Iron Age. The Iron Age records indicate a starkly different way of life than that of the preceding Bronze Age and succeeding Early Medieval Period.

McDonald, Fiona [166] see Wilson, Jeremy

McDonough, Katelyn (Department of Anthropology, Texas A&M University)

Dietary Insights from a Middle Holocene Latrine Feature at the Connley Caves (35LK50), Oregon

The Connley Caves site is composed of eight rockshelters situated in a south-facing ridge of welded tuff on the margin of Paulina Marsh in the Fort Rock Basin of central Oregon. Poor preservation of perishable materials and the removal of much of the Middle Holocene deposits at the site with a backhoe during archaeological excavations carried out in the 1960s limits our knowledge of this period at the Connley Caves. Recent excavations conducted by the University of Oregon uncovered a small alcove between Caves 4 and 5 containing undisturbed Middle Holocene deposits, including a dense concentration of well-preserved coprolites interpreted as a latrine feature. Twelve of these coprolites have been analyzed for microscopic and macroscopic remains to investigate prehistoric diet and environment at the site. A wide variety of plants and animals were represented in the coprolite contents, suggesting a broad-spectrum diet that included seeds, fish, birds, and mammals. Results of the coprolite analysis are presented here, in conjunction with new radiocarbon dates and cultural materials from this feature.

McDonough, Katelyn [47] see Shpall, Cahill

McElvaney, Katherine (University of Houston)

A Comparative Bioarchaeology of Health and Status in Pre-Classical K’axob and Cuello

This paper explores whether there is a statistical difference in rates of non-specific infection between two Maya pre-classic villages, K’axob and Cuello, and whether these findings can be correlated to social status within and between the two villages. Using representative skeletal samples from these populations, an osteological analysis is performed to determine the presence of non-specific infection markers in the form of periosteal reactions. Any signs of reaction are scored by level of severity and stage of healing, and results from the samples are compared. Combining these health indicators with other socioeconomic factors can be informative about the social status of individuals and allow both a correlation of infection rates among suspected elite versus non-elite individuals, as well as make a socioeconomic versus health status comparison between two villages within the region coexisting within the same period. Results may aid future inquiry into non-specific infection rates among the pre-classic Maya of the lowlands, and provide an overall picture of health within a framework of social conditions during this pivotal time-period in Maya development. Furthermore, if infection rates are similar between K’axob and Cuello, this information could be used to make inferences about other similar Maya groups during the pre-classic.

McElwain, Mitchell E. [242] see Franklin, Paris

McFarland, Christopher (UC San Diego), Ho Jung Yoo (UC San Diego), Rosemary Elliott Smith (UC San Diego), Thomas E. Levy (UC San Diego) and Falko Kuester (UC San Diego)

Online Data Curation: CAVEBase, ArchaeoSTOR, University Libraries and Long-Term Digital Archiving

Although new technologies have made it possible to document historical and archaeological sites in greater detail than ever before, and have made it faster and easier to disseminate information, they have also brought about new challenges, especially in connection to long term data preservation. As the quantity of information stored digitally continues to grow it becomes increasingly important to actively curate the information now, for present and future reuse. Not only does data need to be protected against catastrophic and attritional loss, such as from hardware failure and personnel turnover, it also needs to be well-documented and discoverable in the correct contexts to be useful.

This paper provides a brief look at three ongoing projects at UC San Diego which address these challenges: CAVEBase, ArchaeoSTOR, and the UCSD Library Digital Collections. These projects explore new methods of entering, cataloging, interfacing with, preserving, and disseminating digital archaeological data such as 3D models, point clouds, high resolution photographs, videos, reports, and associated descriptions and metadata.

McFarlane, Christopher [21] see Cottreau-Robins, Catherine (Katie)

McGill, Dru (North Carolina State University), John Wall (North Carolina State University), John K. Millhauser (North Carolina State University), Vincent Melomo (William Peace University) and Ruth Little (Longleaf Historic Resources)

Saving Oberlin: African-American Historic Archaeology and Preservation in Raleigh, North Carolina

Free African-Americans established Oberlin Village outside Raleigh, North Carolina in 1866 at the end of the Civil War. Within two generations, the people of Oberlin had constructed churches, a school, a cemetery, shops, and many homes. Today, Oberlin continues to be an important site for African-American history and identity. For example, Oberlin Cemetery (established 1873) is one of only four African-American cemeteries in Raleigh.
The cemetery’s more than 600 graves include many leading African-American figures in Raleigh’s history, and several unique features such as a rare wooden marker and graves covered in sea shells and some likely decorated with glass bottles. However, the village and its historic and archaeological resources are threatened by development and gentrification. This poster highlights collaborative efforts between a local non-profit group, the Friends of Oberlin Village, and university scholars and students in the region, to document and save Oberlin through such efforts as cemetery surveys, grave-marker research, comparative studies of freedman villages, and public education.

McGovern, Thomas H.

McGuire, Chloe [155] see Jazwa, Christopher

McKenna, Moriah [303] see Harris, Sarah

McKeown, C. Timothy

McKillop, Heather [95] see Howie, Linda

McKinney, Holly [250] see Skinner, Dougless

McKnight, Justine

McKnight, Matthew (Maryland Historical Trust)

McGovern, Whitney (Colorado State University) and Julie Esdale (Colorado State University)

McGuire, Randall (Binghamton University)

McGuire, Whitney (Colorado State University) and Julie Esdale (Colorado State University)


McGuire, Chloé [135] Chair

McGuire, Randall (Binghamton University) [166] Setting Things Right: Indigenous Archaeology in Sonora, México

Larry Zimmerman taught us how to do Indigenous archaeology. He told us do not rob graves or lick bones, to ask questions that Indigenous people need answered, to put aside academic capital, to collaborate, to be radical, to listen, to be humble and to atone for the transgressions of our discipline. Such a transgression occurred in the Sierra Mazatan of Sonora, México. In 1902, a party of Yaqui warriors freed hundreds of enslaved Yaquis from haciendas near Hermosillo, and they sought refuge in the Sierra Mazatan. Days later Mexican troops outflanked the Yaqui warriors and attacked the camp of women and children killing 124 Yaqui. Three weeks later Áles Hrdlicka collected the skulls of 10 individuals, human bone, hats, blankets, weapons, and a cradle board from the battlefield. He shipped these materials to the American Museum of Natural History in New York City. The bi-national Proyecto Cerro Mazatan project worked collaboratively with the Yaqui tribes of Sonora and Arizona to repatriate the human remains and other materials that Hrdlicka took from the battlefield. The collaboration was a success and in the fall of 2009 the National Museum of American History returned the remains to the Yaqui People.

[110] Chair

McGovern, Thomas H. [1]

Geophysical Applications at the Site of Fort Halifax, PA (36DA0008)

Fort Halifax was constructed in Dauphin County, PA, by the British during the French and Indian War as part of a line of fortifications along the Susquehanna River. It was only garrisoned for about a year, from 1756–57, before being abandoned and dismantled by the end of the war. Due to its brief existence, the precise location of the fort has been lost, although the name of the modern town of Halifax perpetuates its connection to the area. Additionally, past historical research regarding Pennsylvania’s colonial forts has preserved some crucial information about the site and its location. Several attempts have been made in recent years to locate the fort and study archaeological remains within the bounds of Fort Halifax Township Park, yet, to date, evidence of its walls or associated buildings has not been uncovered. This research builds upon earlier work by searching for evidence of the fort in a new location within the park. Geophysical surveying techniques are being applied to detect the presence of potential archaeological features indicative of the eighteenth-century fort. Ultimately, this project seeks to strengthen the bond between the people of Halifax and their town’s history by improving their understanding of the township’s colonial period.

McGovern, Thomas H. [1]

[1] Discussant

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out in this area. The Fort Wainwright Cultural Resource Management Team created and implemented a protection plan to minimize adverse effects to archaeological sites within the boundaries of the exercise with large success.

McLeester, Madeleine (University of Chicago)  
[297] “Every Plant is Medicine:” Overlapping Categories in Food Production and Ritual  
Wild plant collection is often a key component of food production. Yet, despite its dietary import, collection practices remain under-researched and “wild” plants are typically relegated to the margins of our archaeological analyses. Drawing on historical medicinal records, I discuss the practices surrounding the collection of medicinal plants and these plants’ intricate entanglements in food production systems. In this presentation, I use the early 20th century ethnobotanical works of Huron Smith to explore possibilities for collection area, plant use, time of collection, and enacted rituals to expand current understandings of foraging practices. Using these records, I reconstruct foraging areas and determine the extent of landscape brought into production. I also discuss how medicinal plants in this region challenge our categories of wild, medicinal, and food, as plants can intersect multiple categories and aid their users in other forms of food production, like hunting. This presentation encourages us to rethink our archaeological categories and questions about modes of food production, including the spatial expanse of production systems, labor organization, and ritual.

McLeester, Madeleine [26] see Schurr, Mark

McManamon, Francis (Center for Digital Antiquity—ASU)  
[172] The Digital Archaeological Record (tDAR): An Archive for 21st Century Digital Archaeology Curation  
Archaeological research both produces and uses substantial amounts of data in digital formats. Researchers undertaking comparative studies need to be able to find existing data easily, efficiently, and in formats that they will be able to access and utilize. Researchers creating or recording data need a repository where they can place the data they generate so that it will be discoverable, accessible, and preserved for long-term use. The Digital Archaeological Record (tDAR) is a broadly accessible domain repository for archaeological and archaeologically-related data and information. tDAR is especially helpful and useful for Cultural Resource Management (CRM) firms, public agencies, individual scholars, and research organizations that are not affiliated with, and therefore unable to access and use, institutional digital repositories, such as are maintained by some major research universities. Researchers with access to institutional repositories still may prefer to use tDAR since it is tailored to archaeological and other cultural heritage data and information. Current users of IDAR include academic researchers, public agencies, CRM firms, and others organizations responsible for archaeological data and resources.  
[96] Discussant

McManamon, Francis [231] see Ellison, Leigh Anne

McMane-Fry, Ellen [212] see Ameen, Carly

McMenem, Moira [214] see Allan, Pamela

McMillan, R.  
[90] Discussant

McNamee, Calla (Wiener Laboratory for Archaeological Science, ASCSA)  
[298] Experimental Archaeology as a Tool for Understanding Microbotanical Taphonomy  
Microbotanical residue analysis, particularly starch grain and phytolith analysis, of ground stone artifacts has become a well-established method for investigating subsistence practices, plant processing patterns, and tool use at prehistoric sites around the world. Within the Aegean, however, where wheat and barley are the primary staple grains, microbotanical analysis of stone tools has only recently been incorporated into on-going research. A collaboration between PlantCult, a European Research Council funded project of the University of Thessaloniki, and the Wiener Laboratory (ASCSA) is advancing work on this important topic through experimental research. As part of PlantCult’s multidisciplinary study of food culture, grinding experiments have been conducted utilizing different tool types and a variety of Aegean staple resources. This paper presents the microbotanical component of this research, which addresses four questions: 1) the impact of grinding time, material type, and tool type on phytolith and starch morphology, 2) the effect of sampling methodology, specifically dry brushing, wet brushing, and sonicating, on recovery, 3) the assemblage of microbotanicals on re-used tools, and 4) the potential for recovery from archaeological materials. Although directed toward Aegean research, this study highlights the usefulness of experimental studies and provides comparative data relevant to research in other regions.  
[298] Chair

McNamee, Calla [298] see Vitale, Salvatore

McNeece, Avery [168] see Stewart, Ashley

McNeil, Cameron L. (Lehman College, CUNY)  
[76] Capturing the Fragrance of Ancient Copan Rituals: Floral Remains from Maya Tombs and Temples  
Pollen analysis of Classic-period temple and tomb spaces in Copan’s Acropolis revealed a range of plants important to ancient Maya ritual practice. Some of these species were not represented in macroremains in ritual or household contexts. Scholars have described temple spaces as thick with the odor of burned offerings and copal, but added to this would also have been the fresh and heady fragrance of blooming buds and greenery, adding a fecund perfume to the area of ritual supplication. These botanical adornments and offerings were undoubtedly tied to mythical associations, as they are in some modern Maya ritual houses. Analysis of pollen from sediment cores, and macroremains from middens, aided in the interpretation of ritual botanical materials, emphasizing the importance of understanding the complete ecological context of a community in the interpretation of species commonly found in ritual spaces. Few archaeological projects in the Maya area take floor samples for pollen analysis from buried temples and tombs. As this paper will demonstrate, this is a tremendous loss regarding our understanding of ancient Maya ritual practice, nearly as great a loss as the failure to take residue samples from vessels.

[297] Discussant

McNeil, Cameron L. [142] see Barrios, Edy

McPherron, Shannon P. [89] see Martinsius, Naomi L.
Mcrostie, Virginia (Pontificia Universidad Católica de Chile. Departamento de Antropología), Eugenia Gayo (Center for Climate and Resilience Research (CR2), Claudio Latorre (Departamento de Ecología & Centro UC del Desierto), Calogero Santoro (Instituto de Alta Investigación, Universidad de Ta) and Ricardo De Pol-Holz (GAIA-Antártica, Universidad de Magallanes)

[36] Pre-Columbian Introduction of Legume Trees Prosopis Algarobia section and Geoffroea decorticans into the Atacama Desert of Northern Chile during the Late Holocene

Our recent research in the Atacama Desert (18–27°S) proposed that Prosopis trees, Algarobia section (Algarrobo), were introduced during the late Holocene by humans and dispersed through cultural and natural factors. At least 41 direct AMS on seeds and pods retrieved from archaeobotanical and paleoecological contexts (rodent middens and leaf litter deposits) show that the earliest presence occurred ~4200 cal BP but most dates fall over a thousand years later, during and after the Formative period. This hypothesis is further supported by the available biogeographic and phylogenetic data for this genus in the Americas. Another cultural valued tree Geoffroea decorticans (Fabaceae-Mimosoideae), may have also been introduced into the Atacama. Here we present a review of the taxonomy and biogeography of this genus, as well the preliminary results of AMS dating on paleoecological and archaeobotanical remains associated to Archaic occupations, giving a mean age of ~500 cal BP. Ongoing studies aim to generate a large dataset of AMS dates and phylogenetical analyses across the region to gain a better understanding of the status of these trees. Moreover, a comprehensive approach of their cultural management is mandatory to assess the pre-Columbian and ecological history of this arid landscape.

[86] Chair

Mcrostie, Virginia [105] see Gayo, Eugenia

McTavish, Rachel (University of Wisconsin-Milwaukee)

[43] Fish Butchering and Processing in Archaeology: Proposed Methods for Academic and CRM Analyses

Globaly, fish are recovered from archaeological contexts, but often a thorough analysis for how fish were processed is often overlooked due to time constraints or a lack of attention paid when examining a faunal assemblage. While the butchering of medium to large mammals is often undertaken as part of a zooarchaeological analysis, fish bones are often ignored or cut marks missed. This can be due to a variety of factors, including limited time and varying levels of expertise. This project addresses a series of variables for setting up a good basis for time sensitive and/or large projects to incorporate accurate fish processing data within an analysis. Experimental work, various levels of student skills, timelines, and laboratory space set-up were used to create a series of potential parameters that can be replicated in lab, classroom, and garage settings, to increase the likelihood of successful data collection. Two Late Prehistoric sites from the Great Lakes region are used to track the success rates in different settings for novice and experienced student researchers’ abilities to learn and distinguish cut marks on fish bone.

Means, Bernard (Virtual Curation Laboratory)

[53] Here Not Be Dragons from the End Times: Exploring Virginia Archaeology Using the 3D Printed Past

What to do when a museum visitor asks you if your dinosaurs are dragons from the end times? At their invitation, the Virtual Curation Laboratory at Virginia Commonwealth University (VCU) teamed with the Virginia Museum of Natural History (VMNH) to create an exhibit entitled Exploring Virginia to use archaeology as a way of encouraging critical thinking. This exhibit drew on over 120 3D printed artifacts from archaeological sites across Virginia and the globe. VCU students in the inaugural Visualizing and Exhibiting Anthropology course taught by the senior author selected the objects to be 3D printed. These students also helped design text to teach museum visitors about the length and diversity of human habitation of Virginia and the Commonwealth’s natural setting. How archaeologists approach the past, and how they address complicated issues, such as Virginia’s sordid history of enslavement, were themed integrated into the exhibit. During the exhibit’s run from September 2015 to June 2017, 93,389 individuals visited the exhibit and learned how archaeologists contribute to our understanding of humanity’s place in a changing world. In addition, nearly 27,000 people viewed 360 degree photos of the exhibit on Google Street View, enabling the exhibit to reach a broader audience.

[280] Discussant

[53] Chair

Means, Bernard [90] see Manzano, Bruce

Medina, Shelby [225] see Lopez, Escee

Medina Martínez, Lorena and Raúl Barrera Rodríguez (PAU-INAH)

[31] Hallazgo del Templo de Ehecatl Quetzalcoatl de México-Tenochtitlan

Entre los años 2009 y 2010 el Programa de Arqueología Urbana (PAU) del Instituto Nacional de Antropología e Historia (INAH), llevó a cabo excavaciones en el predio de Guatemala 16 del centro histórico de la Ciudad de México. Durante dichas excavaciones se encontró parte de uno de los templos del recinto sagrado, el templo dedicado al dios del viento, Ehecatl; más tarde, entre el 2016 y 2017 el PAU concluyó la excavación y restauración de dicho templo. Como resultado de estos trabajos se han definido y verificarado aspectos como la ubicación correcta, la forma de los diferentes elementos arquitectónicos, las medidas y la temporalidad del templo; así mismo, se ha logrado salvaguardar la integridad de los bienes muebles e inmuebles que por su valor resultan de gran importancia para la arqueología e historia de México.

Es importante seguir investigando y documentando la herencia de la capital mexica; por ello, el propósito de esta exposición es el de dar a conocer los resultados de las excavaciones así como los resultados preliminares del análisis de los materiales arqueológicos del templo de Ehecatl, uno de los más representsativos del recinto sagrado de México Tenochtitlan.

Mehrtash, Alireza [71] see Sorouch, Mehrnoush

Mehta, Jayur (University of Illinois Urbana-Champaign)

[94] Cultivating Archaeology through Project-Based Learning

In project-based learning, students are expected to be at the center of discovery, wherein educators set the parameters of inquiry with complex and engaging questions and learning happens when students gain knowledge and skills through frequent check-ins, structured lectures, and with both open-ended and guided research. Under this model, I used indigenous cultivens, agricultural cash crops, and creole gardens to guide students in learning about the complexities and nuances of prehistoric archaeology, Native American history, and the Conquest and Colonization of the New World. Herein, I provide a formalized lesson-plan easily adapted and implemented to small college and high-school classrooms.

Meier, Douglas [77] see Foecke, Kimberly
Meier, Jacqueline (Trent University)

[217] Faunal Perspectives on Occupation Intensity and Use of Space at Neolithic Kfar HaHoresh

During the transition to agriculture in southwest Asia, patterns of settlement site use reflect a major shift in the use of space by the Pre-Pottery Neolithic period. Diverse types of sites were utilized by this time, including locales primarily for ritual activities. More studies of ritual site use are needed to clarify how space was organized and used during the Neolithic Transition. This paper presents evidence of animal selection and refuse management to investigate the intensity of site occupation and use of space at Kfar HaHoresh (10,600–8,700 cal. BP), the only Pre-Pottery Neolithic site in the southern Levant that served a primarily mortuary function. I employ zooarchaeological methods to assess the intensity of site occupation based on the degree of hunting pressure that humans placed on small game from the environment immediately surrounding the site. Taphonomic analysis of faunal refuse deposition is used to further illuminate the use of space, namely cleaning practices. These combined results reveal continuity in the organization of ritual space over time, despite a shift in occupation intensity, and clarify the interrelationship of ritual and habitation site use as farming life-ways developed.

Meinkeat, Sarah (University of Tübingen), Christopher Miller (University of Tübingen) and Kurt Rademaker (Northern Illinois University)

[127] A Geoarchaeological Approach to Site Formation and Structures of Inter-zonal Paleoindian Sites in Southern Peru

A key question in the settlement of the Americas is how early forager groups adapted to different ecological settings while maintaining social connections. Quebrada Jaguay (QJ-280) on the Pacific Coast and Cuncacha Rockselder in the Andean highlands of southern Peru, exhibit very different subsistence adaptations, yet these sites were linked within a common settlement system in the Terminal Pleistocene and Early Holocene. Here, we present the results of multidisciplinary geoarchaeological investigations at both sites. During the excavations various structures and features, as well as complex site formation processes were encountered, raising questions about, amongst others, behavioral factors in the sites’ formation. This was addressed by combining micromorphology with pedological and FTIR analyses. These techniques provided insights, invisible to the naked eye, about the sedimentary components, and depositional and post-depositional processes of both sites at a microscale that we could link to the overall site structures. The geoarchaeological approach to the site allowed us to get a better understanding of single features and structures in the sites, as well as to investigate the influence of natural and human factors in a site’s formation.

Meissner, Nathan [31] see Marino, Marc

Meister, Nicolette (Beloit College, Logan Museum of Anthropology) and William Green (Beloit College, Logan Museum of Anthropology)

[138] Solutions for Stabilizing and Caring for Inorganic Archaeological Collections

Inorganic archaeological objects (e.g., stone, glass, ceramic, and metal) may require special care as a result of their archaeological context or properties of composition or manufacture. This paper reviews the agents of deterioration specific to inorganic archaeological objects and demonstrates how to identify preservation concerns and stabilize sensitive collections. Specifically, the use of silica gel storage for archaeological metal will be discussed and demonstrated.

Mejía Ramón, Andrés (The Pennsylvania State University), Christian John (University of California, Davis), Jessica Munson (Lycoming College) and Christopher Morehart (Arizona State University)

[101] Repurposing Scale in Three Mesoamerican Centers: Landscape Archaeology and High-Resolution 3D Modeling at Teotihuacan, Altar de Sacrificios, and Los Mogotes

With the rise of structure from motion (SFM), affordable unmanned aerial vehicles, and other advances in remote sensing, landscape archaeology is at a watershed moment. These new tools allow for the mapping and digital reconstruction of large swaths of land rapidly enough to be reviewed in the field at a spatial, spectral, and temporal resolution that rivals any previous technology. Away from the field, these reconstructions are invaluable datasets that can be used to analyze the landscape at scales ranging from a few square centimeters to over a dozen square kilometers. This conceptual normalization of broad scales of the landscape to a size that we can comfortably interact with has wide implications when it comes to initial project design, on-the-ground decision-making, data analysis, and broader outreach. In this presentation, these possibilities are interactively explored with color, high-resolution (between three to five centimeters) digital landscape reconstructions of Teotihuacan and Altar de Sacrificios in the Petén Lowlands, along with Parrot Sequoia high-resolution (between seven to ten centimeters) multispectral imagery for the two highland cases.

Melgar, Emiliano (Museo del Templo Mayor-INAH) and Reyna Solís (Museo del Templo Mayor)

[209] The Mayan Style Lapidary Objects in Mesoamerica outside the Maya Region: Provenance, Manufacture, Distribution, and Symbolism Across Mesoamerica and outside the Maya Region, archaeologists have found different greenstone lapidary objects with glossy appearance and particular iconography and aesthetics that were considered as jadeite and crafted by the Maya. Unfortunately, their detailed analysis to confirm these assumptions is scarce. In this paper, we will show the study of Mayan style lapidary items from different sites, like Teotihuacan, Monte Albán, Teotles, Tula, Tlatilco, and Trenchillo. We employed Micro-Raman Spectroscopy, X-Ray Fluorescence, X-Ray Diffraction, and Energy Dispersive Spectroscopy, to determine their chemical composition and mineralogical characteristics. These techniques allowed us to identify two raw materials, jadeite and green quartz from the Motagua Valley in Guatemala. Also, with technological analysis of their manufacturing traces, Experimental Archaeology and Scanning Electron Microscopy, these objects showed two patterns of manufacture that share the tools and techniques detected on Mayan jewelry, especially on jadeite pieces. Based on these results, we could infer the symbolism of these exotic greenstones in the burials and offerings outside the Maya Region as long-distance prestige goods for the elite members and powerful sacred items for the priests.

Melomo, Vincent [222] see McGill, Dru

Melton, J. Anne (University of Minnesota), Emily Briggs (University of Minnesota) and Kele Missal (University of Minnesota)

[304] What’s Shape Got to Do With It? Evaluating the Degree to Which Motion and Material Type Influence Edge Outline of Obsidian Flakes

Often in the study of stone tools, without the application of microarchaeological studies and the presence of microwear, little is left to distinguish how the tool was used originally and what the tool may have been processing. Was it used for scraping? Sawing? Slicing? Was it slicing bone? Scraping animal hide? Is it even possible for archaeologists to discern such behaviors from the tool without having access to definitive microwear traces and/or residues? In this study, we test whether the shape of a flake’s edge may yield information regarding its utilization. More specifically we look at whether certain performed motions and usage on varying material types result in similar effects on the overall outline of the flake edge over time. An experimentally produced obsidian flake assemblage is utilized, with the targeted flake edge outlines mathematically defined using Elliptical Fourier Analysis (EFA) and statistically evaluated in R before, during, and after use. Effects of variation in the pre-use edge outlines on the discrimination after
use between behavioral categories are evaluated. From the results, we establish expectations for the ability of EFA to statistically distinguish edge shapes according to motions performed in use and/or the material type being processed.

Melton, Mallory (University of California Santa Barbara)
[76] Towards a Social Paleoethnobotany of Urbanization: Integrating Macrobotanical and Microbotanical Data to Explore Foodways at La Blanca, Guatemala
This paper uses macrobotanical and microbotanical remains to investigate the impacts of developing sociopolitical complexity on the foodways of Middle Preclassic inhabitants of the Pacific coast of Guatemala. I use these datasets to explore how urbanization affected food-related practices of residents of La Blanca (900–600 BCE). Macrobotanical remains from house floors facilitate comparisons between elite and commoner foodways, while starch grains and phytoliths extracted from grinding equipment, domestic cooking wares, and large vessels used for communal meals directly identify foods prepared for various occasions. This study critically contributes to our understanding of how early urbanization impacted the daily lives of ancient inhabitants of the Southern Maya Region.
[310] Chair
Melton, Mallory [310] see VanDerwarker, Amber

Meltzer, David (Southern Methodist University)
[182] The Geoarchaeological Contributions of Vance T. Holliday
Vance T. Holliday has played a key role in developing our understanding of the late Pleistocene geological history, climate and environment of North America, especially the Great Plains, and of the context and chronology of Paleoindian sites. The localities he has worked on, and to which much is owed to his interpretation of their geoarchaeological setting and histories, include iconic localities such as the Clovis, Folsom, Midland and Plainview type sites, and especially the Lubbock Lake site, where his decades of research and fine-grained studies have made it a model of a geoarchaeological study. At these sites and others where he’s worked, his research is routinely marked by efforts to understand the broader processes of landscape evolution, and how such changes impact our ability to find and understand archaeological sites.
[182] Chair
Meltzer, David [44] see Eren, Metin

Menaker, Alexander (University of Texas-Austin)
[100] The Inka Empire in the Valley of Volcanoes, Southern Peruvian Andes
States and empires attempt to incorporate and transform local landscapes and cultural practices in efforts to legitimize their social orders. Research on the Inka Empire in the Andagua Valley of the Southern Peruvian Andes has shown how these processes are incomplete and become entangled with local practices and the stubborn materiality of history. This poster presents recent archaeological and anthropological research, identifying the reach and effects of Inka Empire and distinguishing local pre-Inka and non-Inka cultural occupations and practices. This research reveals the tensions of empires evident in local settlement patterns, cultural practices and material culture, such as, stone offerings and monoliths (huancas), and ceramics that were marginalized and expanded during Inka rule. The painted stone disc and tablet tradition, in addition to larger stone features, articulated and manifest relations of history, power and space among local inhabitants in the valley. In Andagua, Inka imperial statecraft sought to re-orient local populations’ relations with the landscape, shifting from local huacas and ritual locations in the southern edge of the contemporary town of Andagua to emphasizing the volcanic flows of Ninamama and the broader valley through the placement of an ushnu (ceremonial platform).

Ménard, Clément [198] see Brandt, Steven

Mendel, Catherine and Deanna Grimstead (The Ohio State University)
[187] Persistence in Turkey Husbandry Practices in the Southwest and Four Corners Region: The Isotopic and Ethnohistorical Evidence
Research has demonstrated an independent domestication event of Turkey (Meleagris gallopavo) occurred in the southwestern USA between 200 BC—AD 500, which was separate from the domestication of turkey within the Mesoamerican world. While aDNA analyses revealed this as a separate and distinct event, we still know little about how turkey husbandry was practiced in the prehistoric Southwest, USA, Northwest, Mexico, and Four Corners regions. Our research applies carbon and nitrogen isotopes to a sample of archaeological turkey bones from Tohatchi Flats, New Mexico, USA. We contextualize these data, by comparing the data to wild modern turkey and additional data from other sites in the region. Results indicate some maize foddering and/or scavenging suggesting penning was not the dominant management strategy, while time periods during and after the medieval climatic anomaly (MCA) show a shift to confinement and maize foddering as the dominant strategy. The intensification of husbandry practices is an expected outcome of resource stress associated with the MCA, and this is also the time period when turkey pens begin to appear in the regional archaeological record. Isotopic expectations derived from ethnohistorical accounts suggest general continuity in both passive and intensive management strategies when compared to the prehistoric data.

Mendelsohn, Rebecca (Smithsonian Tropical Research Institute)
[153] Ritual and Domestic Plant Use on the Southern Pacific Coast of Mexico: A Starch Grain Study of the Formative to Classic Period Transition at Izapa
In southern Mesoamerica, the transition from the Formative period to Classic period (100 B.C.- A.D. 400) was a time of population decline, cessation of monumental construction, and the abandonment of many sites. Environmental explanations such as drought and volcanic activity have been proposed as potential trigger factors for the widespread collapse at the close of the Formative period. Current evidence suggests that residents of the early capital of Izapa, located on a piedmont environmental zone of the southern Pacific coast, fared better than neighbors in other early cities during this transition. From their piedmont location, residents of Izapa would have had access to plant resources from a wide variety of environmental zones, including the coastal plain, estuaries, mangrove swamps, and the beach. This study applies starch grain analysis, a microbotanical technique, to ceramics and ground stone pieces recovered from domestic ritual and refuse deposits at the Formative period capital of Izapa. Documentation of the diversity of plant foods used by Izapa’s population is intended to better understand the resilience of this coastal population during a period of potential environmental stress, when maize agriculture may have been a less reliable source of food.
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Méndez, César (Centro de Investigación en Ecosistemas de la Patagonia), Andrés Troncoso (Universidad de Chile), Amalia Nuevo Delaunay (Centro de Investigación en Ecosistemas de la Patag), Antonio Maldonado (Centro de Estudios Avanzados en Zonas Áridas) and Daniel Pascual (Universidad de Chile)

[74] High Resolution Chronology of the Human Occupation South of Choapa Basin (31°34’-32° S), Chile

The area south of Choapa basin in Chile has long been subjected to archaeological research through scientific as well as cultural research management projects. Surveys, excavations, and sampling over these roughly 5000 km² area has yielded over 370 radiocarbon dates plus over 120 thermoluminescence dates (almost 0,1 dates/km²). Dates range from 30000 cal BP to modern, but the human occupation is constrained in the last 13,000 years. Such chronometric resolution allows discussing the intensity of occupation of the different environments and landscapes over time. Also, it provides means to compare the human chronological signature with the available local paleoclimatic data to discuss if aridity, and therefore shortages in resources, exerted pressure over the human groups inhabiting this area. The distribution of dates in not constant, but rather fluctuating and even showing certain periods devoid of chronological signature. It also exhibits a significant increase in the last millennia coupled with a higher intensity of occupations as suggested by the abundance of late age archaeological sites. The high resolution of the chronology of the southern Choapa basin contrasts with that of neighbor areas that may have alternative time distributions as suggested by preliminary data gathered over the last years.

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Méndez, César [184] see Reyes, Omar

Mendizabal, Tomas [260] see Wake, Thomas

Menéndez, Elsa, Damien Marken (Bloomsburg University) and Keith Eppich (Colin College)

[80] Late-Terminal Classic Community Mobility and Migration at El Perú-Waka'

Recent archaeology at the Classic Maya city of El Perú-Waka’ has revealed a number of distinct communities making up the urban occupation. These communities possess their own cycles of settlement, florescence, and abandonment. Taken together, these cycles seem to show two distinct aspects that directly pertain to Classic Maya urbanism. One, it shows the urban landscape to be in a continuously changing state. The urban ruins encountered by researchers are the end product of centuries of such shifting settlement and rarely reflect contemporaneous occupation. Two, urban and hinterland communities across the city likely display a variable degree of mobility through time. The El Perú communities described in this paper appear to originate elsewhere and, after abandonment, migrate again. The shifting settlement reflects not just change over time, but mobility, a fundamental dynamic in urban settlement patterns. This paper investigates these phenomenon as evident from the archaeological record of El Perú-Waka’, Guatemala. Communities occupy a position on the landscape, sometimes marginal positions, sometimes privileged ones, and seem to insert themselves into a preexisting urban system.

Mensah Abrampah, David

[67] Slavery without Slaves: Archaeology of Frederiksted Plantation and Its Implications for Plantation Archaeology in Ghana

In 1803, Denmark and Norway abolished the trans-Atlantic slave trade, which took effect on 1st January 1803. However, this did not end slavery itself in Africa. Intensification of cash-crop agriculture on the West African coast by the Danish colonists provoked an upsurge in the local slave trade. As the Danish plantation economy solidified, increasing numbers of enslaved people were engaged to labour in these plantations in Ghana. The research examines the documentary and the archaeological data of one of the earliest Danish plantations (Frederiksted plantation) established in 1794 in Dodowa, in Ghana. Frederiksted and other Danish plantations are part of the building blocks of long-term cultural contact spanning almost two centuries (1658–1850) between Denmark and Ghana, and they offer this research the opportunity to gauge the continuities and discontinuities in contemporary. The excavations and the resultant material culture reveal that Frederiksted plantation site represents different episodes of occupation, abandonment, and reoccupation. Indigenous local elites who reoccupied the plantation (after its collapse in 1802) have play a crucial role in shaping the plantation landscape, which provides a new way to understand plantation archaeology in general.

Mentzer, Susan [126] see Schumacher, Mara

Menz, Martin (University of Michigan)

[301] Weeden Island Shell Rings from the Bottom-Up: The View from Old Creek

The transition to Weeden Island mortuary and ceramic expressions along the Florida Gulf Coast also coincided with a shift in settlement. During this interval, around A.D. 600–750, earlier Swift Creek shell rings were abandoned and Weeden Island rings established nearby. In many cases, these Weeden Island shell rings were substantially larger than their predecessors, however, some anomalously small, isolated Weeden Island rings have also been recorded, such as the Old Creek Shell Ring (8Wa90) in the St. Marks Wildlife Refuge. Presented here are preliminary results from recent fieldwork at Old Creek, including analysis of ceramics and radiocarbon dates, intended to place this site within the larger sequence of cultural and settlement change on the Gulf Coast during the late Middle and Late Woodland periods.

Mercure, Danielle (University of California Santa Diego), Dominique Meyer (University of California San Diego), Eric Lo (University of California San Diego), Tanya Anaya (University of California Irvine) and Traci Ardren (University of Miami)

[248] Photogrammetric Registration of Excavation and Sacbe Segments at Yaxuna

Using aerial imagery in archaeological sites has been viewed as a powerful tool for site recordation. At the Maya site of Yaxuna, located 20km south of the ancient ruins of Chichen Itza and on the longest recorded Maya sacbe, we provide a case study of aerial survey work, combining altitude varying imagery from fixed wing and multicopter aircrafts. Combining such multi-scale imagery allows us to relate excavation scale to landscape wide architecture and layout. Features such as terrain, monumental and residential architecture, can be made more visible in a broader context through derivative products derived from photogrammetry, including but not limited to digital elevation models, watersheds, hillshades and vegetation color. At the site of Yaxuna, we use orthomosaic and photogrammetric registration to contextualize residential buildings with the sacbe which links to the sites of Ekal and Coba. The notable importance of the sacbe was highlighted by past exchange of people, goods and ideas between these communities, and is now pronounced by physical features in construction architecture and physical layout. Results are used to illustrate the major advantage of using aerial imaging for rapid extraction of site-wide architectural layouts.

Mercure, Danielle [330] see Meyer, Dominique

Meredith, Clayton (University of New Mexico) and Keith M. Prufer (University of New Mexico)

[224] The Rise and Fall of the Forest Canopy: An Application of Compound-Specific Stable Isotopic Analysis to a Holocene Sequence of Soils as a Record of Human Impacts in Southern Belize

Derived from lipid-rich plant tissues (primarily leaf waxes), long chain n-alkanes are a durable organic biomarker whose relative abundance is used in paleoecological studies as a proxy marker of plant species composition, and as an indicator of biomass burning. Isotopic composition of individual n-alkane components preserves signals that reflect both hydroclimate and canopy height. These properties can be employed to examine spatially
integrated signals of anthropogenic land clearance in lake cores and buried soils. Presented here, are preliminary results of analysis of leaf-waxes recovered from soil profiles collected by the Uxbenká Archaeological Project near the site of Tzib’te Yux Rockshelter in southern Belize. Our research indicates these profiles include a Holocene-length sequence of deposition including the transition to agriculture, as reflected in a rapid shift in δ13C of bulk soil organic matter, as well as the subsequent return of broadleaf forest following the Classic Period Maya occupation. Combined with geomorphic indicators of erosion, and a high precision climate record derived from a local speleothem, the profile presents an ideal test case for the application of plant-wax data in the SE tropics of Mesoamerica.

Mereuze, Remi (University Paris 1 Pantheon—Sorbonne) and T. Max Friesen (University of Toronto) [16] Building a Database to Understand the Architecture of Arctic Wooden House Remains

Western Arctic archaeological sites hold the remains of wooden houses occupied during the second millennium AD by ancestors of the present Inuit people. Although the permafrost helps to maintain these features in excellent condition, the giant puzzle resulting from the collapse of the frame makes it hard to understand their original architecture. During the ArcticCHAR project, we excavated a house at Kuukpak (Northwest Territories, Canada) in 2014 and 2016. Facing the complexity of this feature, we created a new strategy to help us interpret this tangle of wooden remains. Combining both computer techniques (i.e. G.I.S, photogrammetry) with traditional field recording methods required a robust database to connect all of these data. In this paper, we explain the design of the database and the technical choices we faced during its creation and implementation, with one of our main goals being to use open-source software. Without a doubt, this methodology will help us to understand the building techniques of these impressive Western Arctic houses. Additionally, the use of open-source products will ensure the reproducibility of our method.

Merrick, Megan (Florida State University) and Tanya Peres (Florida State University) [102] Zooarchaeology of Domestic Activities at a Weeden Island Shell Ring in the St. Marks National Wildlife Refuge

The purpose of this research is to examine different domestic activities at the Mound Field site (8Wa8), a Weeden Island shell ring in Wakulla County, Florida. Zooarchaeological analysis was conducted on the faunal remains recovered in 2016 from six excavation units at Mound Field. These units represent different hypothesized areas of domestic activities from across the site. The differential deposition of food remains may reveal more about the patterns of activities in which people participated, and can help to develop a more complete reconstruction of both the site and the environment.

Merriman, Christopher [77] see Dennehy, Timothy

Merritt, Stephen (University of Alabama at Birmingham), Monica Avilez (CUNY, Lehman College) and Jonathan Reeves (George Washington University) [99] Bone Preservation, Specimen Identifiability, and Outcrop Shape—A Preliminary Investigation of Early Pleistocene Taphonomy at Koobi Fora, Kenya

Fossil bone assemblages include differential specimen preservation (weathering stage, cortical surface exfoliation, polish, roundedness, fracture type) and identifiability (taxonomic or anatomical precision). Three 1x1 meter inventory squares placed on steep, moderate, and minimally sloping areas of a fossiliferous outcrop test whether outcrop shape is a megabias that influences assemblage attributes. A digital elevation model created from drone-captured aerial imagery describes outcrop slope, erosional potential, and pooling potential for each inventory square. In general, erosional potential increases with outcrop slope and pooling potential increases in flatter areas, but these attributes do not covary perfectly in our squares. We analyzed all (between 21 and 40) specimens per square, and observed that median specimen size, the distribution of specimen weathering stage, fracture type, roundedness, and precise anatomical identifiability were not related to outcrop slope. The flattest square was overrepresented in abraded and taxonomically identifiable specimens (superfamily or finer). The steepest square was overrepresented in exfoliated specimens. The moderately sloping square was underrepresented in exfoliated, abraded, and precisely identified taxonomic specimens. These results suggest that outcrop shape is not a megabias that uniformly impacts assemblage formation, and that the complex relationship underlying fossil preservation, specimen identifiability, and outcrop shape warrants further attention.

Merriwether, D. Andrew [88] see Kennedy, Jennifer

Merwin, Daria (New York State Museum)

[148] Discussant

Messenger, Lewis (Hamline University) [292] Investigating Climatic Dimensions of the Archaeological Past with Undergraduates Using CADGAP (Climatic Analogs Data Gathering Project)

Byron and Murray’s (1979) Climates of Hunger ignited my interest in climate change and human cultural discontinuities over time. Later, as a junior faculty in an undergraduate institution fostering collaborative research between faculty and students, I was encouraged to share my climate-related research methodology with my students. This led to development of a teaching strategy that integrates the study of climate change into the anthropology curriculum in two specific courses, one oriented toward the past (archaeology) and the other looking at future issues (cultural ecology). In these courses, students use weather data from specific sites in an assigned world region to do trend analyses to speculate on past or future climatic conditions. I developed the acronym CADGAP (Climatic Analogs Data Gathering Project) to indicate which classes would employ that strategy. This paper discusses the pedagogical methodologies involved in bringing CADGAP into the classroom over more than two decades. It also will address the increasing challenges encountered in accessing the data needed to successfully implement this active learning process.

[292] Chair

Messenger, Phyllis (University of Minnesota) [292] Tweeting the Flood: Student Social Media Fieldwork and Interactive Community Building

This paper will discuss hands-on uses of social media to help students engage with climate change. A central case study is an interdisciplinary design course on the Mississippi River and the city, taught in spring 2011 by coauthor Patrick Nunnally in which students confronted historic floods on the Mississippi River in real time through a series of twitter assignments. The analysis will discuss how the assignments were set up and carried out, what happened, and what the outcomes were, in particular related to community building. The paper will address how such real-time observations can add up to data for long-term analysis. Tracked longitudinally, these data can be used to study climate change. The paper will also discuss other opportunities for use of social media and on-line resources for teaching and learning about issues of water, place, and community relevant to climate change.

[292] Chair
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Messer, Haley (Florida State University) [102]
The Function of Woodland Period Shell Rings as Seen at the Mound Field Site (8WA8)
What purpose did Woodland period shell rings along the Gulf Coast of Florida hold? These unique architectural features have been explained as specific places of trash disposal, protection against flooding events, and as barriers from intruders, among other things, but no answers have stood to truly explain their proliferation and significance during the Woodland period. Recent excavations in 2015 by Dr. Mike Russo (National Park Service) and in 2016 by Dr. Tanya Peres (Florida State University) of areas of the shell ring at the Mound Field site (8Wa8) in Wakulla County, Florida, revealed a striking number of features inside and outside of the ring. The frequency and variety of these features provide essential information for research questions regarding the purposes of Woodland period shell rings. This research analyzes particular features at Mound Field to interpret the function of the shell ring and the overall use of the site. These data are then compared with those from contemporaneous sites to examine the origin and purpose of Woodland period shell rings. The information gained from this study is valuable in the growing segment within southeastern archaeology of Woodland shell ring studies.

Messineo, Pablo [2] see Politis, Gustavo

Meta Robinson, Jennifer [222] see Thomas, Jayne-Leigh

Metz, Alexander [84] see Stevens, Karen

Meyer, Dominique (University of California, California, Diego), Eric Lo (University of California San Diego), Danielle Mercure (University of California San Diego), Patricia A. Beddows (Northwestern University) and Dominique Rissolo (University of California San Diego) [330]
Thermal Identification of Groundwater Discharges within Saline Lagoons Surrounding Vista Alegre, Quintana Roo, Mexico
The Maya port and site of Vista Alegre carried political and trade importance in the Terminal Classic to Early Postclassic periods. Located in the Laguna Yalahau of northern Quintana Roo, Mexico, the site is built on a small and low elevation island surrounded by mangrove. Inland from the site are freshwater wetlands (sabanas), while the near-shore waters of the restricted circulation lagoon are hypersaline. A significant research question is how the inhabitants of Vista Alegre accessed potable fresh water. We investigate this question by exploring the existence of freshwater offshore sinkholes, locally called Ojos de Agua in the surrounding area of Vista Alegre. Through the benchmarking of an aerial UAV based thermal image analysis and calibration at known ojos, we were able to successfully derive salinity variations due to point freshwater discharges in that area of the lagoon. We explain the methodology used to address correct radiometric measurements, thermal image stitching and identification of fresh-water discharge points. While it is still unclear whether such ojos were used for fresh water sources for the ancient Maya, understanding their geology and distribution provides indispensable information for the hydro-geological evolution of the area, and related coastal sites.

Meyer, Jack [84] see Kajiankoski, Philip

Meyer, Kelton (Colorado State University) and Jason LaBelle (Colorado State University) [127]
Kill, Camp, and Repeat: A Return to the Lindenmeier Folsom Site of Northern Colorado
Paleoindians of the Great Plains are often generalized as highly mobile bison hunters that moved in response to migrating bison. This view is certainly shaped by many well-known single component bison kills which form the basis for the argument. The Lindenmeier (SLR13) Folsom site of northern Colorado might be a notable exception to the high mobility model, as it contains hundreds of Folsom tools, animal bone, chipping debris, and decorated artifacts spread over 800 meters of buried deposits. Approximately 9 to 12 dense artifact concentrations are documented across the site, and questions remain as to whether these clusters represent—discrete living floors, middens, or palimpsests? Resolving the nature of these deposits is key to integrating Lindenmeier into broader land use models. This presentation summarizes the poorly known locales in the eastern portion of the site. The first discoveries were made here in the 1920s, and the Smithsonian excavated a bison bone bed nearby shortly thereafter. Backed by 10 years of recent systematic artifact mapping, our paper examines what these eastern clusters represent in terms of function, and how these particular occupations mirrored or were instead quite different from the many other Folsom visits to the site.

Meyer, William (Villa Maria College) [220] Chair

Meyers, Maureen [255] see Schubert, Ashley

Michael, Amy [215] see Bengston, Jennifer

Michael, Tyler (Harvard University) [325]
Resistance and Revitalization in the Native American Southeast
Revitalization movements have been a topic of particular interest to anthropologists concerned with culture contact and colonialism. As a cultural practice that is present in many historical periods, it stands to reason that revitalization was undertaken in the deep past as well. Archaeology has proven useful in exploring the aftermath of the Pueblo Revolt of 1680 from a Native American perspective in the American Southwest, and recently, scholars have begun to look for potential revitalization movements in the American Southeast. In this paper, I develop a model for assessing revitalization movements on the archaeological record, drawing on scholarship on the Pueblo Revolt and emerging scholarship about a protohistoric revitalization movement in the Mississippian Southeast. I use this model to analyze responses to Spanish colonialism in the sixteenth and seventeenth centuries at the Berry Site, the site of the Native American town of Joara and the Spanish Fort San Juan in modern western North Carolina, and at Mission San Luis in modern-day Tallahassee, Florida. I then offer tentative conclusions about the nature of response to Spanish colonialism in both case studies.

Michelaki, Kostalena (School of Human Evolution and Social Change, ASU) and John Robb (University of Cambridge) [54]
Two Thousand Years of Pot-Making: Exploring Neolithic Ceramic Traditions in SW Calabria, Italy
This poster will examine the degree to which the task of pot-making changed from the Early/Middle (ca. 5700–5000 BCE) to the Late Neolithic (ca. 5000–4000 BCE) periods in SW Calabria, Italy. We will present the manufacturing sequences of all Neolithic wares, based on the results of more than a decade of stylistic, mineralogical, and physico-chemical analyses of ceramics from the sites of Umbro Neolithic and Penitentierza, as well as the results of laboratory and replicative experiments using local clays. By comparing continuities and changes in technological decision-making we will explore how the learning and practicing contexts changed.

Michelet, Dominique (CNRS/Université de PARIS 1) [169] Discussant
Micheletti, George J. (University of Central Florida) [256]  
**Creation Case for a Classic Period Provincial Polity at Pacbitun, Belize**  
The Late Classic period (AD 550—800) at Pacbitun, Belize brought about heightened prosperity evidenced in a surge of architectural development and an increase in precious exotic materials. However, despite continued growth, by the close of the Late Classic Pacbitun’s affluence appears to have diminished considerably. To the north, settlements of the Belize River Valley also seemingly undergo a concomitant florescence and economic decline. Research suggests the pecuniary instability of the Belize Valley was the result of a semi-autonomous existence where interactions with neighboring dominant centers led to episodic subjugation. Thus, an early Late Classic reprise is thought to have led to a period of independence in the Belize Valley giving rise to florescence. At Pacbitun however, alterations to the site’s social, economic, and political institutions may actually support a foreign influence. After reviewing the different incorporation strategies used by paramount centers to control smaller polities, I will detail the Late Classic events at Pacbitun and explain how each institution was effected. Aside from the introduction and intensification of craft and agricultural production, it is my belief that the physical and functional modifications to the site’s E Group may be the key to substantiating Pacbitun as provincial polity.

Micheletti, George J. [256] see Powis, Terry

Michell, Samantha (University of Central Florida), Jennifer Maria Toyne (University of Central Florida, Orlando, Florida, U), Alfredo Narvaez (Museo de Túcume, Túcume, Lambayeque, Peru) and Victor Vasquez (ARQUEOBIOS, Trujillo, La Libertad, Peru) [7]  
**Ancient Human-Animal Interactions in Chachapoyas Region: Isotopic Analysis of Zooarchaeological Remains from Kuelap, Peru**  
This study uses isotopic analysis of fauna remains as a proxy for reconstructing the ancient Chachapoya environment of the northeastern highlands in Peru. Large middens have been excavated at the monumental center of Kuelap (900–1535 CE), yet there is little previous research focused on the fauna remains at this or other archaeological contexts in the region. The goal of this project was to reconstruct animal resource exploitation and provide insight into dietary variation and environment at 3000 masl. This study models animal diets using δ13C and δ15N values from bone collagen of various local species including camelids, deer, guinea pigs, viscacha, rabbits, birds, canids, river otter, and puma to investigate the range of isotopic variation within and between animals with different dietary regimes. These faunal isotope values support local expectations for foodweb research and fall into distinct niches in the foodscape of the environment. Differences in diet between domesticated and wild animals (specifically llama and deer) were not identified, suggesting no provisioning from possible domestic crops (maize, C4) by humans. These are the first isotopic data for the eastern montane region and serve as an important baseline in the evaluation of human subsistence strategies and animal husbandry.

Micklin, Destiny [129] see Freiwald, Carolyn

Mielke, Genevieve (The University of Montana) [88]  
**The Battle of the Little Bighorn Gunshot Trauma Analysis: Suicide Prevalence among the Soldiers of the 7th Cavalry**  
The Battle of the Little Bighorn cost the U.S. army 268 men, which accounted for just over one percent of its entirety. Many of the men were killed during battle by Native American firearms and bow and arrows (Scott et. al., 2002, pg. 12). It is possible that some men perished by their own hand or by friendly fire. Through osteological data provided by the State Historical Preservation Office of Montana as well as historical documentation, this presentation will provide an analysis of gunshot wound trauma sustained by the soldiers. I will also examine the possibility of suicide among the U.S. 7th cavalrymen. To do so I will compare calibers of firearms used during the battle and the type of wounds sustained by firearms through an extensive literature review of the weapons from this time period. In addition, an analysis of military recruitment and procedures for admittance into the 7th Cavalry will be done to assess mental preparedness for battle. A review of ballistic analysis and typical locations of trauma caused by suicide in a forensic context will also be included. Using historical documents combined with forensic methods will illuminate the possible causes of death for the US 7th cavalrymen.

Mielke, Genevieve [88] see Jackson, Katherine

Mierswa, Emily (University of New Hampshire), Crystina Friese (University of New Hampshire) and Meghan Howey (University of New Hampshire) [239]  
**Graves in the Forest: Mapping Lost Colonial Cemeteries in the Oyster River Watershed**  
The Oyster River watershed in New Hampshire was home to some of the earliest English colonial occupation outside of Boston with settlements starting in the early 1630s. This early colonial occupation as well as subsequent historic settlement of the area has left an extensive array of archaeological features in the landscape. Currently, however, this landscape is heavily forested making identification of even remnant built sites difficult. The forested setting makes it particularly hard to find and correctly identify the extent of early cemeteries given graves were marked only with simple, unengraved fieldstones easily obscured by even slight brush. This poster presents the results of an intensive field survey and mapping program we conducted on one now overgrown early colonial family cemetery used from the mid-1600s to the early 1800s. We contextualize the results of our work with available archival records from the period. By contrasting our results with previous maps of the cemetery, we demonstrate how important the intensive field survey and digital mapping approach developed here is for creating full understandings of these important early sites.

Mietes, Ester [13] see Napolitano, Matthew

Mijal, Samuel [68] see Fletcher, Brittany

Millard, Andrew [87] see King, Charlotte

Miller, Bryan (University of Oxford) [181]  
**Objects of Action and the Practice of Empire in Xiongnu Inner Asia**  
Material remains of communities and peoples enmeshed in imperial regimes are most often assessed as representations of incorporation into empires. Yet many of the objects in consideration were not so much passive material declarations as they were tools for active demonstrations. Authority, regional and local, derived from membership in exclusive imperial echelons; membership that required more than mere badges of identity but performances of imperially-derived authority. This paper addresses the ways in which locals enacted empire as well as what they sought to gain from doing so. It analyses particular accoutrements of feasting and drinking wielded by steppe peoples of Inner Asia in formalized social interactions aimed
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at legitimizing authority via participation in the Xiongnu imperial regime. Even though they were often heavily imbued with imperial aesthetics, it was not the cups and bowls alone but rather the practices of drinking ceremonies and eating rituals, afforded by the imperially-imbued objects and the people that wielded them, which bestowed power and authority. The steppe empire was thus constituted through the practices of locally (re)producing the regime, practices that were afforded by assemblies of particular peoples and objects.

Miller, D. Shane (Mississippi State University)
[182] The Swag Site (38AL137): Yet Another Paleoindian Site at the Allendale Quarries in South Carolina
The Swag Site (38AL137) was recorded during the initial survey of the Allendale chert quarries by Albert Goodyear and Tommy Charles in 1984. While subsequent work focused on the Topper and Big Pine Tree sites, the Swag site was overlooked until a systematic survey conducted in 2015 identified several localities with buried archaeological deposits. In May 2016 and March 2017, further excavations at the Swag Site produced artifacts that are comparable to Clovis components at Topper, Carson-Com-Short in Tennessee, and the Adams site in Kentucky. This paper presents the results of mass, refit, and spatial analyses of the lithicdebitage in order to assess the impact of post-depositional processes on the archaeological deposits at the site.
[127] Discussant

Miller, G. Logan (Illinois State University)
[74] Dating the Emergence and Decline of Middle Woodland Blade Technology
Prepared core and blade industries emerge in various times and places throughout the prehistory of North America. One of these is in association with the Hopewell phenomenon of the Eastern Woodlands. As such, they are often recognized as a Middle Woodland “index fossil” and a key materialized indication of Hopewell ceremonialism. However, few formal tests of their occurrence across space and time exist. Drawing on published reports, as well as an extensive review of the unpublished gray literature, I present a Bayesian analysis of radiocarbon dated, bladelet-bearing features from across Ohio. Results are not crystal clear but do provide insight into previously unrecognized temporal variation in this element of Hopewell material culture. The most likely current scenario indicates that bladelets occur earliest in southern and central Ohio before subsequently spreading north to the Lake Erie region. There is strong evidence that interactions between groups in Ohio and the Illinois River Valley served as a catalyst for the spread of blades and potentially further elements of Hopewell ceremonialism.

Miller, Heather (University of Toronto) and Gregory L. Braun (University of Toronto)
[121] Unexpected Expertise: Archaeological Science and the Creative Skills of Indus Craftspeople
Wright’s doctoral and subsequent work brilliantly employed archaeological science to show how relatively simple technological tools (single-chamber kilns) were used by skilled craftspeople in clever ways to create surprisingly technologically complex objects (black-on-grey pottery, resulting from several different cycles of atmospheric conditions during firing), objects which also provided information about patterns of social boundaries and technological style. In homage to this work, we will present recent petrographic work by Dr. Greg Braun on Mature Harappan technological debris from Harappa, wasters from the firing of faience and/or steatite objects. As in Wright’s research, archaeological science methods show that simple refractory materials thought to be insulating, non-stick firing structures or containers for relatively simple objects, in fact seem to be remains of containers designed to transfer heat, used as ‘crucible’ containers for frits for the production of more complex fritted faiences, with bone fragments deliberately added as fluxes or perhaps even opacifiers. Fritted faience has been identified in the Indus by Vandiver and McCarthy, but this debris implies this complex production method was more common than previously expected, and may be representative of an Indus style of faience production.

Miller, Jacquelynn (The University of Maine, Orono, ME)
[84] Ground-Penetrating Radar as a Rapid Cultural Resource Management Technique for Shell Midden Delineation
The analysis of shell midden extent and thickness typically requires expensive and time-consuming excavation. Additionally, widely spaced test units provide limited and discontinuous stratigraphic information. Ground-penetrating radar (GPR) survey, in combination with stratigraphic information from limited excavation, can serve as a powerful tool for making rapid cultural resource management decisions. Although processing and correlating the data requires several days of additional time, this technique allows for quick and efficient data collection, is nondestructive, requires minimal staff, and provides a continuous record of vertical profiles across the site. The contrasting electrical properties of shell-rich horizons and associated sediments allow the identification of midden layers on the GPR records. When used with ground-truth, provided by stratigraphic information from limited excavation (photographs, hand-drawn wall profiles, and/or cores), the interpreter can extrapolate stratigraphic details across a site. While individual artifacts cannot be resolved in GPR records, accumulations of rocks, soil layers, and potential house floors may be identified. Although GPR cannot entirely replace a detailed excavation, an initial GPR survey of a shell midden site can provide information regarding site extent and vertical shell distribution. When combined with limited testing, GPR survey provides important data for decisions regarding excavation and site conservation.
[84] Chair

Miller, Mary
[209] How Tlaloc Got His Groove
One of the distinctive features of one of the principal Maya solar deities, the Jaguar God of the Underworld, is the twisted cord—nicknamed “cruller” for the German doughnut over 100 years ago by Eduard Seler—that loops under the eyes (with their characteristic inward curl for pupils) and twists between them, sometimes ending under the deity’s jaguar ears. This feature, perhaps to be associated with fire and burning, takes up its place on the nose of a different deity, Tlaloc, in Central Mexico, in the Late Postclassic. How is it that Tlaloc took on this attribute, and what did it mean in the context of the Mexica? No image of Tlaloc from Tula features the cruller; in all likelihood the cruller takes on its role in the mid-15th century, during the period of Mexica expansion.

In this study, the iconography meaning of the twisted cord will be examined, its meaning in both Maya and Central Mexican contexts, and a possible motivation for transmission. The study will revisit the fundamental union of fire and water at the heart of Tenochtitlan, in the twinned temple of Tlaloc and Huizilopochtli.

Miller, Melanie (University of Otago, Dunedin, New Zealand), Sabrina Agarwal (University of California, Berkeley) and Carl Langebaek (Universidad de los Andes, Bogotá, Colombia)
[66] Gender Divisions in Eating and Working: A Bioarchaeological Analysis of an Ancient Muisca Community (Sabana de Bogotá, Colombia, 1000–1400AD)
The Muisca inhabited a large territory in Northern South America (within present-day Colombia) and are often presented as a “classic chiefdom society.” The roots of these interpretations can be traced back to European historical documents discussing Muiscas socio-political life, which emphasized the role of social status and hierarchy within Muisca culture. The Muisca in particular have been held captive by the recordings of historical authors, and social structures observed through a European gaze have colored our interpretations of Muisca culture. New data from archaeological
The archaeological identification of intentionally deposited layers of ash at Jornada pueblo and pit house settlements is complicated by several factors and intentional ash deposits are seldom identified unless preserved in a sealed context or buried by a layer of impermeable natural sediment or cultural deposits. When clear evidence of intentional ash deposition is observed, it may be assumed that there was a significant meaning underlying the inclusion of ash in a special context or deposit. Ash is commonly found below adobe caps in sealed floor hearths and termination pits of Jornada pueblo rooms as well as thin layers spread over abandoned and sealed floors. Ash is also associated with layers of burned roof material as part of ritual termination of architecture. Intentional ash deposits have occasionally been found in pithouse floor hearths, and there is evidence of ash layers associated with deposits of ritual paraphernalia in certain caves. Contexts where ash deposits are not present, such as burials and dedicatory deposits, are of further interest because they allow for a comparative contextual analysis. Contexts where intentional ash deposition has and has not been documented will be reviewed and interpretations of the meaning of such deposits will be presented.

**Assessment and Evaluation of Florida's Citizen-Science Program to Address Climate Change: Heritage Monitoring Scouts of Florida (HMS Florida)**

The Florida Public Archaeology Network (FPAN) launched the citizen science-based Heritage Monitoring Scout (HMS Florida) program statewide during the fall of 2016 in part to assist Florida’s Division of Historical Resources, which currently does not have the budget or policy permissions in place for climate change concerned initiatives. During the first year, 233 volunteers signed up and submitted over 312 monitoring forms from across the state. This paper will provide affordances and constraints of the HMS Florida program to date, share overall patterns of data collected on site conditions and assessments, break down the demographics of site stewards, and share preliminary results of the second year. During the quantitative and qualitative assessments of the program discovered that many of the HMS Florida participants feel the program is making an important impact not only on the preservation of cultural resources, but also in their personal lives.

**Financing the Domestic Economy: A Study of Craft Production and Technological Change in Central Mexico**

Studies of technological change often leave unasked how people finance their adoption of new technologies, focusing instead on concepts of risk and uncertainty. The means of finance—whether by surplus production, saving, assuming debt, sharing costs, or other mechanisms—depends on the particularities of the economy in question and can have systemic and long-term consequences for adopters. To show why finance matters in explanations of technological change and how archaeologists can study it, this paper presents a case of household saltmaking in the Basin of Mexico during the Aztec and Spanish empires. Saltmakers adopted several innovations in the manufacture of vessels they used to evaporate brine, but differences in how they financed these changes had divergent effects on the social relations of production. One set of innovations that reduced ceramic vessel production costs during the Late Postclassic correlates with a period of independence and stability among saltmaking households. However, Colonial-era saltmakers became dependent on wealthier investors for access to the means of production, most likely because they lacked the financial means to adopt an innovation involving metal cauldrons. This research shows the importance of considering finance in explanations of technological change as well as the study of domestic economies.
Mills, Barbara (University of Arizona) 
[115] Discussant 
[83] Chair

Assessing the Potential for Raw Material Profiling Studies in Modelling Neanderthal Behavioural Complexity

Raw material studies are becoming increasingly popular as the development of technical and methodological advances adds to the macroscopic and geological study of stone tools. In turn this improves our capability to create a link between a stone tool’s archaeological context and geological area of origin. This connection is often discussed in terms of hominin behaviour, such as organisation of subsistence, adaptation to environment, and forward planning. However, the growing body of data provided by provenance research raises the need to critically assess how this information practically translates into proxies of hominin behaviour. This question is particularly prescient when considering the efficacy of raw material studies in exploring the lives of archaic Homo, in this case Homo neanderthalensis. Middle Palaeolithic foraging behaviour has historically been seen as ‘non-curated’, lacking a depth of planning and adaptive response to dynamic environments (e.g. Binford 1979; 1982). However, recent advances in our understanding of Neanderthals, suggest a species capable of complex subsistence behaviour, such as transport and curation. This paper discusses raw material acquisition strategies, and how profiles of raw material variability through time and space can contribute to developing models of Neanderthal behaviour.

Mills, Rebekah (Barnard College, Columbia University) 
[98] All in the Family: Using Archeology and Genealogy to Construct a Historical Narrative

Excavations during 2017 for Ballintober Castle in Roscommon, Ireland have uncovered the base of a wall structure and curtain wall for the early fourteenth century castle. As excavations continue to deepen, the structure of the castle reveals a complicated occupational history with cobbled floor occupation levels along with what may be a wall structure appearing underneath this area. The castle excavations can show the Anglo-Norman and Irish ownership of the castle with each owner using different building techniques with different purposes for the castle. As the excavations continue to reveal the early construction of the castle, it is important to look at the historical record of the de Burgh and O’Conor families, the two ancestral owners of the land and castle. The Annuals of Connacht reveal not only the conflict surrounding the ownership of the castle, but that the families were related through marriage. Looking at the historical narrative surrounding the early construction of the castle highlights the overlooked importance of women in showing not only the conflict over ownership, but that just as the Anglo Norman and Irish walls of the castles are built on top of one another, the competing families are interwoven together.

Milton, Emily, Kurt Rademaker (Northern Illinois University) and Peter Leach (University of Connecticut) 
[238] Are We Living in a Simulation? Digital Reconstructions of Early Sites in Coastal Peru

Rapidly evolving modern technology has resulted in powerful tools for preserving and visualizing archaeological materials. Extensively recording a site with digital technologies enables new explorations of site discovery and recovery processes while concurrently providing a permanent, detailed record of the material. Here, Terminal Pleistocene and Early Holocene maritime sites in coastal Peru are reconstructed at various scales. Drone photography and GIS are utilized to collect high-resolution landscape imagery for basemap modeling, while approaches of photogrammetry and 3-D modeling are applied to investigate aspects of the sites at a micro scale. This work demonstrates the dynamic potential of digital curation in archaeology.

Minor, Michael [68] see Caporaso, Alicia

Minnis, Paul (University of Oklahoma) 
[236] Discussant

Minneopa Indian Village: Ancestral Puebloan Settlement in Grand Canyon National Park

Margaret Lyneis, in her 1995 description of the Virgin Branch region, notes that three of the boundaries are quite distinct as they adjoin “non-Anasazi” societies. The eastern boundary is more diffuse, as the Virgin and Kayenta Puebloan traditions intersect in an area that is now part of Grand Canyon National Park. In this paper I will argue that Virgin settlement patterns in the western half of the Grand Canyon are distinct from the Kayenta and follow the upland/lowerland pattern described for the Virgin heartland. I will also discuss preliminary findings that appear to push the Virgin boundary in Grand Canyon National Park eastward from the Kanab Plateau to the Walhalla Plateau, resulting in an increased overlap between the Virgin and Kayenta Puebloan traditions.

Mintz, John [228] see Fitts, Mary

Mirazón Lahr, Marta [143] see Biers, Trisha
Mires, Ann Marie
[62] Discussant

Mires, Ann Marie [204] see Moran, Kimberlee

Mirro, Michael and Jon Spenard (California State University, San Marcos)
[256] Cataloging Cave Features in the Southern Pacbitun Regional Archaeological Project Using Virtual Reality and 3D Modeling

Since 2010, a major focus of the Pacbitun Regional Archaeological project has been a regional ritual landscape survey surrounding. In 2016, Phase II of that subproject commenced, with significant efforts geared towards experimenting with digital mapping and documentation of surface archaeological features in four poorly understood caves, Crystal Palace, Slate Cave, Tzul’s Cave, and Actun Tokbe. In this paper, we discuss our work and offer some results from our Phase II investigations. In 2016, our efforts were geared toward excavations, tape-and-compass mapping, and photogrammetry experimentation in Slate and Crystal Palace Caves. In the 2017 field season, we cataloged all surface features in Crystal Palace, explored and mapped a small sealed passage in Tzul’s Cave, and mapped and cataloged a significant portion of Actun Tokbe, through the use of photogrammetry. Combining the photogrammetric and mapping data with a virtual reality model of the caves provides a robust visualization system allowing remote study of the environment. The resultant “Mapping Grade Models” allow for the rapid inventory, yet detailed mapping of the surface, freeing time for more fieldwork. Such digital documentation relies on careful data organization and backup, annotation of models via coding or other means, and significant time for post-processing data.

Mischke, Bryan [221] see Whiteley, Thomas

Missal, Kele [304] see Melton, J. Anne

Mistretta, Brittany (University of Florida) and Jonathan Hanna (Penn State University)
[34] Breadth of Fresh Air: A Continued Examination of the Reversed “Crab-Shell Dichotomy” in Grenada’s Pre-History

In a previous paper, we examined past faunal studies from Troumassoid period (AD 800–1600) sites in Grenada, concluding that an expansion of diet breadth likely occurred during this time. Our conclusion contradicted the traditional “crab-shell” dichotomy proposed by Rainey and Rouse, but confirmed findings from elsewhere in the Caribbean. Presented here is a continuation of this work, with new faunal analyses incorporated from recently excavated inland, western, and earlier (Saladoid) sites, as well as faunal data from a few past reports that were recently discovered. Currently, the data indicate differences between assemblages from the previously examined coastal Troumassoid sites and the recently included inland occupations. A difference was also identified between all Troumassoid sites and the earlier Saladoid settlements. Comparison of the faunal assemblages not only helps to enhance our understanding of Grenada’s prehistoric environments, but also the communities that interacted with them. The differences between sites reveal local variations in subsistence strategies over time and further corroborate the transition to an expanded diet during the Troumassoid period.

[237] Discussant

Mitchell, Seth [85] see Libbon, Jonathan

Mitchell, William (Monmouth University)

I was not involved directly with Scotty’s Ayacucho project (1969–1975), but from 1965 to 1968 I worked in the town of Quinua, engaged in dissertation research. Its territory included part of the site of Huari. After completing my dissertation, I returned to continue work in 1973, 1974, and 1980, and later, focusing on its ecological system, especially irrigation. Scotty invited me to prepare a paper on the ways farmers used ecological zones. The research, while more detailed, complemented what I had already decided to do. Volumes 2 (Excavations and Chronology, 1981), 3 (Nonceramic Artifacts, 1980) and 4 (The Preceramic Way of Life, 1983) were published; volume 1, which was to included my paper, was scheduled to follow. China (where Scotty began work in 1975) and other work intervened. Volume 1 lay dormant. Many years later, Scotty said he was ready to publish it, but so much time had passed that I thought it necessary to revise. The paper, “Multizone Agriculture in an Andean Village: The Ecological Basis of Peasant Farming”, never appeared. It now lies in the National Anthropology Archives. This presentation speculates why, and offers information on what my paper contains and why it is still relevant.

Mixter, David (Binghamton University)
[129] Urban Reworking as Political Action at the Ancient Maya City of Actuncan, Belize

This paper begins with a question: What does it mean to live amongst ruins? The literature on ancient Maya urbanism focuses to a large extent on how urban spaces are arranged and what this says about social and political organization. However, the long occupations of many Maya centers resulted in urban centers that reflect a palimpsest of decision-making over centuries rather than a single grand plan. Indeed, evidence at many Maya sites suggests that urban plans were reworked as buildings were built, destroyed, renovated, repurposed, and abandoned based on present needs. So-called “problematical deposits”—detritus left in and on abandoned spaces and buildings—provide evidence that the later Maya acknowledged the differentially utilized nature of their urban centers. Yet, modifications to the urban landscape result from decisions made by someone: households, communities, leaders, or conquerors. As such, palimpsest urbanism is both a way of life and a product of political action. Here, I draw on data from the Maya site of Actuncan, Belize to consider the ramifications of inhabiting and modifying a long-occupied center.

[129] Chair

Mixter, David [129] see Jamison, Thomas

Mixter, David [147] see Lawhon, Taylor

 Mizoguchi, Koji (Kyushu University, Japan) and Junko Uchida (Academia Sinica)

This presentation argues that the decision of the locations of the so-called royal tombs of the Anyang Hsi-Pei-Kang cemetery involved various social-strategic concerns. Although badly robbed, the excavations of the tombs yielded rich grave good assemblages, allowing archaeologists to approach to various elements of the theocratic authority of the late Shang kings. The reconstruction of the formation process of the cemetery has been attempted in the hope that the tombs can be assigned to the kings whose reigns are recorded in Shiji and in Zhushiji Jini (the Bamboo annals). Drawing upon an original novel reconstruction of the relative chronology of the tombs, we examined spatial relationships between them at each phase of the formation process of the cemetery, particularly in terms of which pre-existing tombs the mourners were ‘designed’ to see and in what way, and have analytically revealed some distinct patterns. By comparing the timings of the implementations of those strategies with the genealogical relationships between the
kings that were recorded in Shi-ji, we have investigated and reconstructed the social-strategic implications of the selections of those strategies in relation to their historical-contextual backgrounds.

Mlyniec, Michael (University of Sheffield), Roger Doonan (University of Sheffield), Duško Šljivar (National Museum Belgrade (retired)), Yvette Marks (University of Sheffield) and Sarah MacKinnon (New Era Archaeology Inc.)

[77] Experimental Reconstructed Vinča Gradac Phase Copper Smelting

Recent dating projects have determined the oldest known date for copper smelting to appear around, 5000 BCE, associated with Vinča (Gradac phase) sites in the Morava Valley, Serbia. Recent Studies of Vinča metallurgy (Radivojevic 2010) were directed towards the characterisation of slags and associated minerals, and their provenance. This body of work has had important implications for theories relating to the beginnings of metal-using communities.

Despite this important research, few studies have focused on the actual techniques and apparatus associated with copper production, resulting from a lack of archaeological finds traditionally associated with metallurgical processes.

Some scholars (Šljivar 2006) have proposed the use of perforated and solid truncated conical vessels as primary smelting apparatus. On this basis, a series of experimental smelts coupled with a program of soil and material analysis were initiated to explore the potential for such vessels to be associated with copper smelting. This paper reports a number of experimental smelting campaigns and evaluates the potential for these early ceramic forms to be associated with the world’s earliest pyrometallurgical tradition.

Moates, Jeffrey [78] see Scott-Ireton, Della

Modl, Daniel [140] see Brandl, Michael

Moe, Jeanne (Project Archaeology-BLM)

[168] Discussant

Moe, Jeanne [286] see Freeman, Mark

Mohnenhoff, Kathryn (University of Utah)

[10] El Niño and Trans-Holocene Trends in Eastern Pacific Fishes: Preliminary Data from Abrigo de los Escorpiones, Baja California

Many questions surround trends in prehistoric fisheries dynamics and fish use along the Pacific Coast of North America. Marine fish are particularly sensitive to changes in their environment, including variation in sea surface temperature that changes cyclically with the El Niño/Southern Oscillation. Trans-Holocene paleontological or archaeological sites with large faunal assemblages are the ideal tool for use in reconstructing these paleoenvironmental records. Here, I report preliminary data from Abrigo de los Escorpiones, a well-dated and stratified trans-Holocene site from the Pacific Coast of Baja California. A wide variety of fish taxa were identified, including a large proportion of surfperch (Embiotocidae). Rockfish (Sebastes sp.), sharks and rays (Elasmobranchii), and California sheephead (Semicossyphus pulcher), were also identified in this assemblage. Richness and evenness values were calculated as they have the potential to reflect El Niño frequency; higher values through time could indicate an expanding diet breadth due to decreased encounter rates with the highest-ranked fishes. A significant increase in evenness values through time was revealed, which correlates with the increase in El Niño frequency in the late Holocene. This work has modern value; reconstructing an extended record of marine environmental change can inform on modern rehabilitation and conservation efforts.

Mol, Angus A. A. [83] see Borck, Lewis

Molinar, Marissa (University of Florida)

[73] Seeing Is Believing: The Documentation of Rock Art

This presentation examines traditional, contemporary, and experimental methods of illustration and photography in rock art recording. Addressed accordingly are the processes and problems unique to pictographic (painted) and petroglyphic (pecked) parietal imagery, superimposition and dating. As a rock art researcher, photographer, and artist, many examples will be drawn from my fieldwork; specifically contemporary methods utilizing panoramic photography and an experimental photographic technique employing solarization filters. The presentation concludes with a discussion of how the act of hand-drawing rock art images creates a powerful scenario to intimately connect with the acts of past agents, as well as the potential opportunity to envision more dynamic interpretive frameworks in rock art studies.

Molloy, Paula

[291] Fantastic Archaeology Revisited: Still Wild after All These Years

In his 1991 classic, Fantastic Archaeology: The Wild Side of North American Archaeology, Stephen Williams set out to document the ways in which fraud has masqueraded as truth in North American prehistory. More than just a catalog of the improbable and unfalsifiable, Fantastic Archaeology also served as gateway to scientific archaeology for many in the general public. Smitten with a “weird tale,” many in the Cambridge, MA area found their way to Prof. Williams’ Harvard University course upon which his book was based. Now more than ever, Williams’ approach has relevance for those who seek to inculcate critical thinking as a foundational skill for members of a free society.

Monaghan, George (Indiana University)

[133] Discussant
Monahan, Ellis (Cornell University)
[146] _Enclosure and Surveillance: The Development of a Disciplinary Landscape in Bronze Age Cyprus_

Monumental architecture, specifically in the form of structures classified as “fortifications,” emerged on Cyprus at the end of the Middle Bronze Age, but these massive constructions remained in use for only a brief period of time. This period, however, is of critical importance to the transformation of Cypriot society from a relatively egalitarian village-based society to the urban-focused, politically complex society of the Late Bronze Age. Using the cluster of fortresses in the Agios Sozomenos region in central Cyprus as a case study, and presenting the results of recent field work in this region, this paper considers not just what these structures are, but what they do and how they do it. This material agentive approach demonstrates that fortresses are efficacious actors within the political domain, shaping the human imagination and experience of the landscape, and thereby driving the apprehension of inequality and contributing to the restructuring of social relations.

Monnier, Gilliane (University of Minnesota)
[137] _Lithic Residue Analysis in 2018: Prospects and Challenges_

Lithic residue analyses have produced exciting results in recent years: microscopic bits of plant and animal tissue adhering to stone tools tens of thousands of years old; the remains of hafting materials such as bitumen and birch-bark pitch; and fiber technology from the Paleolithic, to mention but a few. Yet, for many archaeologists these results seem “too good to be true”. How can biological materials be preserved for thousands of years in temperate environments? How can they appear, under the microscope, almost intact after all of this time? And, how can we be sure that residues are ancient, and not modern contaminants? These questions are at the heart of recent research in the field of lithic residue analysis. In addition to blind tests and anti-contamination protocols, important advances have been made in the development of new analytical techniques designed to improve the characterization of residues. Scanning electron microscopy (SEM) provides high-resolution images with chemical compositional information. Fourier Transform Infrared Microspectroscopy (µFTIR) is such a sensitive technique that it can document degraded proteins. This paper will discuss the role that the development of such techniques will play in helping tackle the problems of identification, contamination, and preservation mentioned above.

Monroe, Cara (University of Oklahoma- LMAMR), Paul Sandberg (Sam Noble Oklahoma Museum of Natural History), Rita Austin (University of Oklahoma- Laboratories of Molecular), Marc Levine (Sam Noble Oklahoma Museum of Natural History) and Cecil Lewis (University of Oklahoma- Laboratories of Molecular)
[143] _Ancient DNA Analyses of Dental Calculus from Plains Village Collections_

More than a generation since the implementation of NAGPRA, many museums continue forward with the process of repatriation. This creates a unique opportunity for active and collaborative engagement of Native American communities in both the inception and implementation of scientific research. Biomolecular analyses of dental calculus can be an attractive research avenue because they address questions of mutual interest to tribes and scientists, and the sampling techniques are non-destructive to human tissue. In partnership with a tribe in Oklahoma, we present preliminary ancient DNA and bioarchaeological data from prehistoric dental calculus from three Washita River phase, Plains Village sites (500–700BP).

Monroe, Cara [14] see Wright, Sterling

Monroe, J. Cameron (University of California, Santa Cruz)
[337] _Towards an Archaeology of Black Atlantic Sovereignty: Materializing Political Agency in the Kingdoms of Dahomey and Haiti_

The Archaeology of the African Diaspora has long privileged the analysis of the everyday lives of enslaved Africans living on plantation sites in the New World. Notwithstanding the political and intellectual importance of this approach to our understanding of the emergence of the colonial world and its contemporary legacies, recent scholarship on both sides of the Atlantic has examined the new political entities that arose across the Black Atlantic World in dynamic tension with broader Atlantic political and economic forces. Such work has highlighted how political authority in emerging Black Atlantic states were materialized at multiple scales of analysis, and in complex relationships with colonial societies. In this paper, drawing from comparative archaeological research on the Kingdom of Dahomey (Bénin) and the Kingdom of Haiti (Haiti), I will explore the potential for an archaeology of sovereignty in the Black Atlantic World. Emphasizing the economic and symbolic nature of both architectural spaces and artifacts recovered from the homes of monarchs in these two polities, this paper reveals the complex ways sovereign states were articulated into the broader economic and political currents of the Atlantic World, casting new light on the problematic nature of political sovereignty in the Age of Revolutions.

Monroy-Rios, Emiliano [330] see Beddows, Patricia A.

Montero, Gabriela (University of Kentucky), Nathan Wilson (Universidad Nacional Autónoma de México) and Lourdes Budar (Universidad Veracruzana)
[285] _Obsidian Exploitation and Access in the Eastern Sierra de los Tuxtla, Veracruz, Mexico_

In this paper, we present the results of technological and visual sourcing analyses of over 1000 obsidian artifacts collected by the Proyecto Arqueológico Piedra Labrada (PiLab), directed by Dr. Lourdes Budar. The PiLab area of study, the eastern Sierra de los Tuxtla, Veracruz, Mexico, includes the eastern flanks of the Sierra de Santa Marta and the adjacent coastal plain along the Gulf of Mexico, and has a long sequence of prehispanic occupation. Despite this, and almost a decade of regional survey and targeted excavation by PiLab, relatively low quantities of obsidian artifacts have been recovered within the study area. In our analyses of obsidian exploitation, we focus on evaluating both the overall quantities of obsidian artifacts recovered and their specific uses. Our results suggest that access to imported obsidian was rather limited throughout most of the region of study.

Montgomery, Barbara [325] see Lyon, Jerry

Montgomery, Lindsay (University of Arizona)
[259] _The Social Lives of Horses: Comanche Equestrianism in New Mexico_

Over the past century, a great deal of scholarly attention has been paid to Plains horse culture, particularly focusing on how horses transformed the economic practices of nomadic people and the ecology of the Great Plains. As one of the most iconic equestrian cultures of the eighteenth century, the Comanche have been a common subject of these anthropological and historical investigations. Recent studies of the Comanche have focused on the role of horses in facilitating their rise from small-scale hunter-gatherers into major economic and political players. Although the impact of horse on Comanche culture was certainly profound, emphasizing the functional effects of horses glosses over other important elements of the human-animal relationship. Indigenous approaches to human-animal relations offer one alternative interpretive lens to these traditional lines of inquiry. Indigenous philosophy is holistic and places humans and animals on the same behavioral continuum, merging the distinction between nature and culture, the functional and the social. This paper draws on indigenous philosophy to interpret a growing body of Comanche rock art in the Northern Rio Grande region. Through a discussion of this material archive, I explore the social life of horses within Comanche culture and the material manifestations of this relationship.
Montón-Subías, Sandra [275] see Moragas, Natalia

Mooney, Dawn Elise (Archaeological Museum, University of Stavanger) [277] Discussant


Philadelphia’s many unmarked cemeteries and burial grounds have been repeatedly disturbed by construction activities in a string of incidents that stretches back more than 200 years. Incredibly, despite the regular discovery of these unmarked graveyards, City officials and local government agencies still make no effort to proactively protect these resources, and profess a wide-eyed bewilderment each time another one is impacted. Likewise, those responsible for disturbing burial grounds invariably feign exasperation and ask, “How could we have known?!” This presentation provides an overview of Philadelphia’s unmarked burial grounds and their history of being disturbed, examines how they become lost in the ever changing city scape, and addresses the reasons why they should be easy to anticipate and avoid.

Moore, Elizabeth [53] see Means, Bernard

Moore, Jerry D. (CSU Dominguez Hills) [165] Making Andean Houses: A Comparative Case Study

Dwellings occupy a unique space in human lives, places where multiple trajectories of ‘Culture’ and ‘Nature’ intersect. Not merely shelters, dwellings often incorporate subtle aspects of social life and world view while being literally structured by the capacities of raw materials and construction techniques. Rather than a passive reflection of human intention or social existence, dwellings result from making—to use Tim Ingold’s notion, a perspective placing “the maker from the outset as participant in a world of active materials” in which the maker intervenes “in worldly processes that are already going on and which give rise to the forms of the living world.” Methodologically, ‘making’ is “read longitudinally, as a confluence of forces and materials, rather than laterally, as a transposition from object to object.” Further, the transformations of ancient dwellings into archaeological features and contexts engage with additional modes of ‘making’ as houses become sites. I apply these concepts to two different classes of late prehispanic dwellings in coastal Peru—casas de quincha in the Casma Valley and tabique dwellings in the Tumbes Valley—and discuss analytical challenges involved in a comparative study of Andean houses and households.

Moore, Mark (University of New England) [227] Experiments in Stone-Flaking Design Space and Implications for Social Learning Models

Social learning by modern humans led to the repetition and persistence of stone tool forms we see in the recent archaeological record. The emergence of similar patterning in early hominin assemblages is often assumed to track the beginnings of social learning. Less clear is what was being socially transmitted during this early period. One possibility is that hominins learned how to make objects according to a shared ‘mental template’. A second possibility is that specific sequences were learned, which led to repeated forms. Here we describe recent experiments that explored the interplay of stone-flaking intentions and the mechanical outcomes of fracture. By removing complex ‘intent’ from the experimental design, we demonstrated that repetitions in forms and sequences can occur by removing flakes in simple series, without complex goal-directed intentions, and that some of these forms mimic aspects of objects often assumed to reflect more complex cognitive processes. The emergence of repetitive form is possible through the transmission of simple stoneworking sets, or combinations of gestures, without an a priori conception of a manufacturing process or final goal, suggesting that complex forms of social transmission may not have been necessary until relatively late in evolutionary history.

Moore, Summer (College of William & Mary) [20] Continuity and Change in Early Colonial-Era Hawai‘i: An Examination of Foreign Artifacts from Nu‘alolo Kai, Kaua‘i Island

Archaeologists increasingly emphasize the role of social and cultural context in understanding how indigenous groups in colonial settings appropriated foreign goods. While documentary accounts of explorers, traders, and missionaries have long been used by Pacific historians to examine foreign trade in Hawai‘i’s early colonial period, archaeological sites from this period have rarely been identified. As a result, we know little about how foreign goods acquired through such exchanges were acquired and understood by local Hawaiian communities. A legacy collection of foreign objects from Nu‘alolo Kai, a deeply stratified residential site on Kaua‘i Island occupied through the mid-nineteenth century, offers a unique source of information on this topic. Protected deposits at the base of a cliff preserved a remarkable assemblage of imported materials in the site’s upper layers, which include...
copper, iron, glass, ceramics, cloth, and Bible pages printed in the Hawaiian language. While foreign goods at indigenous sites have often been taken as evidence for transformative change, more recent views highlight the ways that unfamiliar objects can be recontextualized in new settings. This paper argues that residents of Nu‘aloa Kai appropriated foreign objects within a framework characterized not only by innovation but also by pervasive continuity.

Moots, Hannah (Stanford University)

[295] Towards a Recursive Relationship between Archaeological and Evolutionary Theory

In 1875, archaeologist Augustus Pitt-Rivers wrote, “History is but another term for evolution.” This presentation will explore the development and trajectory of major schools of thought concerning the relevance (or lack thereof) of evolutionary theory to archaeology and examine the current debate about the nature of evolution occurring in the biological sciences. Lactase persistence, for example, has been intensively studied for nearly 30 years, yet new evidence is calling into question when and how lactase persistence emerged. New archaeological, biological and theoretical approaches are rewriting and refining our understanding of this history. Using this and other examples related to histories of food tolerance and intolerance, I will explore ways that archaeology can and should contribute to an evolutionary theory where research on human history and long-term social change play a foundational role.

Moragas, Natalia, Sandra Montón-Subias (ICREA/UPF) and James Bayman (University of Hawai’i Manoa)

[275] Archaeology of Colonialism and Ethnogenesis in Guam and the Mariana Islands

This paper presents a new archaeological project that we are co-directing in Umatac, Guam. Combining historical written sources and archaeological information, we seek to contribute a better understanding of the historical-archaeological legacy connected to colonial processes related to the Hispanic Monarchy in the western Pacific, and their role in resulting ethnogenesis.

Morales, Anthony (California State University, Los Angeles)

[155] A Late Pleistocene-Early Holocene Site in the Western Great Basin: A Preliminary Study of the Rose Valley Site (CA-INY-1799)

The Rose Valley site (CA-INY-1799) has considerable potential for providing a deeper understanding of Paleo-Indian adaptations in the Far West. For over 40 years, archaeologists have observed artifacts on the surface of the Rose Valley Site that suggest the presence of a terminal Pleistocene-early Holocene component. Recent analyses of existing collections by other researchers have revealed Paleoindian artifacts such as Clovis/Great Basin Concave Base points, Great Basin stemmed points, crescents, and debitage indicative of Clovis lithic technology. In 2017, California State University, Los Angeles, began a multi-year investigation that includes mapping, systematic recording, and test excavations at the site.

Morales, Jessica (California Coastal Archaeology Lab.; California State University, Los Angeles), Jelmer Eerkens (University of California, Davis), Jeffrey Rosenthal (Far Western Anthropological Research Group, Inc.) and Andrew Ugan (Far Western Anthropological Research Group, Inc.)

[44] Using Faunal Stable Isotopes to Assess Past Hunting Practices and Landscape Modification along the Feather River, CA

Isotopic studies of faunal remains provide an ecological framework from which to interpret human behavior, including diet, subsistence, settlement, and mobility. In this study, we present isotopic analysis of four well-dated sites that span a 3500-year record along the Feather River, the biggest tributary of the Sacramento River located in Northern Central California. Through carbon, nitrogen, and sulfur stable isotopes we explore the effects of human population growth on the type(s) of browse that was available for game, as a reflection of landscape modification and maintenance. As well, we hypothesize that as populations grew regionally, game came from a smaller territorial range, and use changes in intra-species isotopes variation to evaluate this hypothesis.

Morales, Jessica [225] see Lopez, Escee

Morales, Ridel (Universidad Nacional Autónoma de Honduras, UNAH), Carmen Julia Fajardo (Universidad Nacional Autónoma de Honduras) and Blanca Fajardo (Universidad Nacional Autónoma de Honduras)

[299] Aportes a la Interpretación Arqueológica de la Zona Sur en Honduras

Los departamentos de Choluteca y El Paraíso al sur de Honduras cuentan con un escaso registro arqueológico de asentamientos prehispánicos y coloniales que desconocen constantes saqueos y destrucción arqueológica, alterando el patrimonio cultural y generando un vacío histórico a las comunidades aledañas a estos sitios arqueológicos, desvinculándolas con su pasado. El Proyecto Arqueológico El Paraíso y Choluteca (PAPCH) comienza en el año 2016 como parte de los procesos de formación de estudiantes de pre-grado en la Carrera de Antropología de la Universidad Nacional Autónoma de Honduras. Este tiene como propósito conocer y documentar la ocupación prehispánica en la zona sur delimitada en un polígono de aproximadamente 365 kilómetros cuadrados. A inicios del año 2017 se realizaron los primeros reconocimientos arqueológicos, identificándose más de quince sitios arqueológicos. La evidencia material registrada fue documentada, preclasificada y analizada y como resultado se muestran patrones relevantes para la comprensión de la zona sur en Honduras. Entendiéndose que las sociedades no son órganos aislados de su contexto general, se propone la posibilidad que las poblaciones en la región sur participaron en relaciones de largo alcance entre sociedades al norte y centro de Nicaragua así como al centro de Honduras.

Morales Forte, Rubén (Universidad del Valle de Guatemala) and Maxime Lamoureux St-Hilaire (Tulane University)

[337] The Architecture of the Classic Maya Regal Palace of La Corona, Guatemala

The regal palace of La Corona flanks Plaza A to the west and is the largest construction at the site: a complex of structures sitting atop a sustaining platform extending over ca. 80 x 55m, and 7m in height. This paper describes the architecture of the two northern groups of the regal palace during their two last phases of construction, spanning roughly 750–850 A.D. While the Northeast Group comprised elaborately decorated corbel-vaulted buildings, the Northwest Group featured a mix of sturdy corbel-vaulted rooms and semi-perishable structures. This paper focuses on architectural designs, layout, and features, allowing to reconstruct the functions of the buildings, which include: residential, economic, administrative, ceremonial, and communicational functions. This functional study informs on what activities were performed in this ancient political institution and how those changed over the course of the last century of occupation of this ancient polity.

Morales-Aguilar, Carlos [18] see Paine, Richard

Morales-Arce, Ana [97] see Waller, Kyle
Morehart, Christopher (Arizona State University)

Cosmologies of Ruins and Ruination: Infrastructures and the Anthropocene

Scientists debate the Anthropocene as a geological epoch. But as a cultural phenomenon, the Anthropocene is recent. And as a cultural phenomenon, the Anthropocene projects a cosmology across history. This paper specifically examines how this cosmology understands the materiality of infrastructures, the built substrate upon which networks of human and non-human worlds intersect and collide. I argue that this cosmology contrasts infrastructures of the recent past as dangerous and polluting against infrastructures of the distant past as sacred and pure. This paper approaches this matter via the analysis of archaeological, historical, and ethnographic data over the past 1000 years in the Basin of Mexico. This case is particularly relevant because this region’s landscapes, places, and people both have defied and haven fallen within the limits of the Anthropocene cosmology. The development in infrastructures tied to varying institutional systems has always had to encounter—physically, socially, and culturally—the materiality of precedent, a trajectory that shows the Anthropocene is not simply geological or cultural but also is political. The need to project a cosmology of sustainability onto the present and into the future depends upon how the Anthropocene’s ideal and contrasting categories are strategically deployed.

Morell-Hart, Shanti (McMaster University)

Changing Plant Economies and Diverse Plant Practices at Piedras Negras

Botanical residues recovered from the Piedras Negras kingdom have yielded rich information about activities and economies of ancient inhabitants. Data for this paper were derived from large-scale excavations targeting Classic Period craft production areas, defensive features, and dwellings. Evidence of agricultural practices as well as the collection of wild and fallow-dwelling plants has been revealed through charred seeds and other botanical residues. The recovered archaeobotanical remains indicate the use of several typical economic species, as well as a range of uncommon plants that may have been used for various purposes including medicine, ornament, and trade. Moreover, the distribution of species across the landscape informs our understandings of place-making in terms of distinctiveness or overlap in activities at individual loci. The diversity of practices represented by the botanical remains adds nuance to traditional paradigms of Classic Period ethnoecology and economy in the Usumacinta region.

Moderator

Morello Repetto, Flavia (Instituto de la Patagonia, Universidad de Magallanes), Marta Alfonso-Durruty (Universidad Alberto Hurtado, Departamento de Antro), Tom Amorosi (American Museum of Natural History, USA), Victor Sierpe (American Museum of Natural History, USA) and Manuel J. San Román (American Museum of Natural History, USA)

Junius Bird Collections from Sites Rockshelter 1, 2 and 3 (Beagle Channel, Patagonia, Chile)

Between 1933 and 1980 Junius Bird, researcher from the American Museum of Natural History (AMNH) New York, traveled through southern Chile where he carried a wide array of archaeological excavations and studies. Towards the beginning of this period, Bird conducted extensive excavations in three sites in the Southern most region of Fuego-Patagonia. Collections from these sites are currently housed at the Division of Anthropology AMNH, and were recently analyzed as part of the activities of Grant FONDECYT 1140939. The sites are located in Tierra del Fuego and the Navarino islands (east and west of the Beagle channel respectively). These sites, Rockshelter 1, 2 and 3, are large shell middens associated with rock shelters. Lithic and bone technology information from the collections is presented and assessed. Data collected from the assemblages is compared to the records and the scarce information of these archaeological sites extant today. The results provide a general overview of archaeological marine hunter-gatherers, highlight the importance of raw materials among them, and further inform about their distinctive technological traits during the second half of the Late Holocene. Subsistence, stratigraphic and context information is based on the detailed record of Junius Bird’s field notes.

Morello Repetto, Flavia [153] see Belmar, Carolina

Moreno Zapata, Paula Patricia [100] see Dalton, Jordan

Morer, Ignacio [146] see Lozano, Sergi

Morett Alatorre, Luis (Universidad Autónoma Chapingo) and Aleksander Borejsza (Universidad Autónoma de San Luis Potosí)

El Sitio Arcaico Tempanro de las Estacas (Morelos) y Su Tecnología de Hogares

Se analizan y discuten las evidencias arqueológicas relativas a tres distintas modalidades de hogares del Arcaico, todos ellos documentados en una secuencia deposicional en el margen poniente del río Yautepec, diferenciados éstos por sus sistema constructivo, requerimientos de inversión de trabajo, potencial térmico y funcional, registrado uno en 2000 por el Proyecto Arqueobotánico Ticomán, y varios más en 2015 por el Proyecto Arqueológicos Las Estacas (municipio de Tlaltizapán, Morelos, México). La localidad se caracteriza por haber sido empleada como campamento estacional a lo largo de unos cuantos siglos cerca de 6000 a.C., según las dataciones por radiocarbono que se obtuvieron. El análisis y clasificación de las tres modalidades documentadas (hogueras, fogones y hornos), busca derivar posibles implicaciones sociales de cada uno de los sistemas, en la perspectiva de poder ser empleada como herramienta para la construcción de hipótesis de trabajo y el diseño de estrategias para la exploración extensiva en sitios del Arcaico regional, y eventualmente en otras del mismo horizonte cultural.
INDIVIDUAL ABSTRACTS OF THE SAA 83RD ANNUAL MEETING

Moretti, John (Museum of Texas Tech University) and Eileen Johnson (Museum of Texas Tech University)

[188] The Late Pleistocene (Rancholabrean) Vertebrate Local Fauna from Zone 3 of Kincaid Rockshelter (41UV2), Uvalde County, Texas

Kincaid Rockshelter (41UV2) is a stratified, multi-component archaeological site spanning the late Pleistocene-Holocene in Uvalde County along the Sabinal River in south-central Texas. Texas Memorial Museum investigations in 1948 produced a small but relatively diverse sample of late Pleistocene (Rancholabrean) vertebrates from the lacustrine Zone 3 depositional unit. Zone 3 material was examined as part of a review of American lion (Panthera leo atrox) remains from Texas. New qualitative and quantitative observations demonstrated the presence of two forms of extinct horse (Equus mexicanus, E. francisci), dire wolf (Canis dirus), American lion, yesterday’s camel (Camelops hesternus), ancient bison (Bison antiquus), mammoth (Mammuthus), alligator (Alligator mississippiensis), softshell turtle (Trionyx), pond turtle (Trachemys scripta), and extinct box turtle (Terrapene carolina putnami). While the presence of American lion in Zone 3 was confirmed, reported jaguar (Panthera onca) remains were re-assigned to Panthera leo atrox. Zone 3 specimens placed the American lion in the Balcones Escarpment, a diverse modern ecotone between the rugged Edwards Plateau and the Gulf Coastal Plain. In combination, four confirmed records of Panthera leo atrox extended across Texas, from the Southern High Plains to the Gulf Coast, evincing the versatile ecology of this dominant Rancholabrean carnivore.

Moretti, John [182] see Johnson, Eileen

Moretti-Langholtz, Danielle (College of William & Mary) and Buck Woodard (American University)

[255] An Evidence-Based Reinterpretation of the Brafferton Indian School

The 1693 Charter establishing the College of William & Mary in Virginia, includes a mandate to educate the “Western Indians.” After securing funding for the Indian school from the estate of the scientist Robert Boyle, a magnificent Georgian-style structure was built to house the “Indian boys.” The received history about this endeavor maintains that the Indian school at William & Mary was unsuccessful. Documentary evidence from both sides of the Atlantic, as well as archaeological evidence, situates the Brafferton Indian School within the Atlantic World’s network of trade, politics of church and state, and offers new insights into the legacy of the Brafferton Indian School among descendant communities with ties to the eighteenth-century school.

Morey, Darcy [212] see Jeger, Rujana

Morgan, Brooke (State Historical Society of North Dakota)


The smallest pieces of chipped stone flaking debris are often overlooked in the analysis of hunter-gatherer camps. Several factors account for this, including recovery methods, research focus, and time and cost allotted for a project. At shallowly-buried sites where features have been obliterated, concentrations of microrefuse have the potential to reveal in situ activity areas or secondary deposits formed by batch dumping. This paper presents a case study of the Mountaineer Folsom site near Gunnison, Colorado, to illustrate the interpretive value of flakes <2 mm in maximum dimension. Results indicate that, while processing, performing spatial analyses at this resolution provides insight into human behaviors that would go otherwise undetected in the archaeological record. At Mountaineer in particular, small flakes reveal how hunter-gatherers perceived and used the space associated with a dwelling structure.

Morgan, Christopher (University of Nevada, Reno)

[174] High Altitude Settlement as Evolutionary Process

The peopling of high altitudes and altitude’s ecological analog, high latitude, are critical to understanding worldwide human dispersals and the diversity of human adaptation but are still quite poorly understood. Within this context, this paper presents a model for the initiation, establishment, and maintenance of permanent high altitude settlements, especially in middle latitudes. This model takes into account the limiting factors found in such settings, the costs and benefits of different ways of coping with these limitations, and the contexts under which different behavioral strategies and physiological changes might be expected to be selected either for or against. The model is evaluated with archaeological data from the Rockies, Intermountain West and the Argentine Andes. This evaluation suggests that in most scenarios demographic packing triggers increasingly intensive high altitude use, that establishing semi-permanent or permanent settlements requires economic subsidization with lower-altitude resources and increasingly costly high altitude ones, and that maintenance of high altitude lifeways is tenuous and contingent upon both biological adaptation and/or articulation with larger regional economies.

Morgan, Michele (Peabody Museum, Harvard University)

[322] Discussant

Morgan, Robert (USDA Forest Service, Francis Marion National Forest)

[106] Identifying Cultural Landscapes in Wilderness Areas on the Francis Marion National Forest

Wilderness is often interpreted to mean areas of pristine nature lacking evidence of human activity. But how realistic is this view given the length of human occupation where many endeavored to mold the landscape to suit their needs? The Francis Marion National Forest is positioned at the northern end of the Sea Islands Coastal Region of the South Atlantic Slope and contains four designated wilderness areas. Given the size and condition of the two largest wilderness areas the Forest Service employed remote sensing techniques to quickly identify cultural landscapes within areas. The most expeditious technique was to use of the forest’s hillshade images derived from digital elevation models. This provides a visual scene of what the bare earth looks like. Grayscale and color ramps are used to display the hillshaded elevation model revealing extensive landscape modification within the wilderness areas.

Morgan-Smith, Mary (University of North Carolina at Chapel Hill)

[170] Ts uul y Paalitil: Considering the Role of Debt at Rancho Kiuic, Yucatán, México

The accumulation of debt by Maya speaking laborers has long been understood as integral to Yucatán’s hacienda system in the 19th century. Though the contexts and nature of creditor-debtor relationships are variable and contested, evidence for debt is consistently present in documents related to large, corporate estates. But what does indebtedness look like beyond the hacienda on small-scale estates? In the absence of historical documents, or evidence of a company store, can debt be observed materially? This paper examines the role of debt in the relationship between landowners and laborers at Rancho Kiuic (ca. 1760–1950); a small, privately-owned cattle ranching estate in the Puuc Hills of Yucatán, Mexico. Owned and worked by generations of Maya speakers, narratives of indebtedness to the Rancho’s owners are woven throughout the oral history of the community. Inequalities evident in the site’s household assemblages will be considered alongside the social memory of labor relations at the Rancho in exploring debt’s role in sustaining the Rancho’s laborer population.
INDIVIDUAL ABSTRACTS OF THE SAA 83RD ANNUAL MEETING

Moriarty, Ellen (Community College of Vermont) and Matthew Moriarty (Castleton University) [168] Kindling Curiosity: Assessing the Early Results of Educational Outreach and Archaeology in the South Lake Champlain Basin, Vermont Members of the general public often view local prehistory from an artifact-based perspective, with a limited or incomplete understanding of the people who made and used such items. This view of the past is often paired with misunderstandings about both the nature of ancient settlements and the need to protect them as vital cultural resources. Initiated in 2016, the South Champlain Historical Ecology Project (SCHEP) has two goals: to study patterns in human-environment interaction along the southern Vermont shore of Lake Champlain, and to increase local knowledge of the substantial cultural heritage resources within the project research area. The SCHEP study area is remarkable in terms of both its ecological diversity and tremendous time depth of human activity, providing an excellent platform from which to kindle curiosity, engagement, and increased protection within local populations. This paper discusses one major component of SCHEP’s outreach activities: work with students in elementary, high school, and colleges in the study area. Using the results of surveys collected during a program of school and field visits, we consider the attitudes and impressions of youth and young adult participants towards local prehistory both before and after their work with SCHEP.

Moriarty, Matthew (Castleton University), Ellen Moriarty (Community College of Vermont), Rosy Kirk (University of Vermont) and Bryant Garrow (Castleton University) [301] At the Gateway to Vermont: Recent Investigations at the Galick Site, West Haven, VT In 2016, the South Champlain Historical Ecology Project (SCHEP) initiated investigations at the Galick Site as part of a regional study focusing on long-term human-environment interaction within the South Lake Champlain area. Situated at the confluence of long-distance trade routes and within an area of remarkable ecological diversity, the Galick Site constitutes a key setting for examining historical ecology at the southern end of Lake Champlain. To date, SCHEP has conducted two field seasons at the Galick Site, analyzed more than 1,000 artifacts collected by the site’s previous landowner, and completed a range of spatial and technical analyses. These investigations have revealed the Galick Site to be a large, multicomponent campsite and settlement used extensively from the Late Paleoindian period up to the Historical era, with particularly heavy usage during the Middle to Late Woodland interval. These investigations also provide initial confirmation for earlier suppositions that the Galick Site served as an important central place for a wide range of economic and social activities occurring within the South Lake Champlain area.

Morris, Julia and Severin Fowles (Barnard College, Columbia University) [259] The Wolf under the Plaza: Pastoralism and Predation in Spanish New Mexico The nomadic tribes of the Plains—notably, the Comanche and Apache—are typically considered the main obstacles to the northern expansion of the Spanish empire in North America. But early Spanish settlers in New Mexico found themselves up against another formidable foe that has received far less attention in the literature: the wolf. Indeed, for an expanding pastoral society, the wolf posed perhaps the biggest threat to local economic welfare. In this paper, we report on the recent discovery of a double wolf burial dating to the 17th or early 18th century in the town of Dixon. Our analysis casts a spotlight on the threat these canids posed to early herders in the region and provides an opportunity to reevaluate the role of the wolf in Southwestern pastoral society more generally.

Morrison, Blythe (Northern Arizona University) [187] An Investigation of Ancient Turkeys near Houck, Arizona This research explores microscale patterns of human-avian interaction in the prehispanic Southwest by identifying evidence of Meleagris gallopavo (turkey) use at a series of multicomponent sites near Houck, Arizona. Using legacy field notes, maps, photos, and artifacts housed at the Museum of This research explores microscale patterns of human-avian interaction in the prehispanic Southwest by identifying evidence of Meleagris gallopavo (turkey) use at a series of multicomponent sites near Houck, Arizona. Using legacy field notes, maps, photos, and artifacts housed at the Museum of This research explores microscale patterns of human-avian interaction in the prehispanic Southwest by identifying evidence of Meleagris gallopavo (turkey) use at a series of multicomponent sites near Houck, Arizona. Using legacy field notes, maps, photos, and artifacts housed at the Museum of This research explores microscale patterns of human-avian interaction in the prehispanic Southwest by identifying evidence of Meleagris gallopavo (turkey) use at a series of multicomponent sites near Houck, Arizona. Using legacy field notes, maps, photos, and artifacts housed at the Museum of This research explores microscale patterns of human-avian interaction in the prehispanic Southwest by identifying evidence of Meleagris gallopavo (turkey) use at a series of multicomponent sites near Houck, Arizona. Using legacy field notes, maps, photos, and artifacts housed at the Museum of History. This paper does so by examining some of the opportunities and constraints of tropical environments in South Asia, considering the range of land use practices deployed over the last 6,000 years in this region. I argue that some practices which could be called sustainable also come at a high cost in terms of human dignity, particularly intensive farming associated with significant social inequity. Other land use practices support more egalitarian social forms, but under conditions of limited population density. We have much to learn from the historical experiences of the tropics—one of these is certainly the ambiguity of the notion of sustainability.

Morrisset, Sara (University of Cambridge), David Beresford-Jones (University of Cambridge) and George Chauca (National University of San Marcos) [335] Echoes in the Wake of Collapse: Cultural Connectivity during the Middle Horizon to Late Intermediate Period in the Lower Ica Valley, Peru This paper examines what happened to cultural connectivity on the south coast in the wake of Wari’s collapse based on our ongoing investigations at the site of H-8 in the lower Ica Valley. We investigate in particular how the echoes of the Middle Horizon resonate in the genesis of the Late Intermediate Ica culture that emerged here thereafter. We present evidence that H-8 was first founded at this time (c. 1000CE), and operated as a caravanserai within an intensifying network of trade and exchange articulated by camelid caravans between a number of Ica Valley sites throughout the LIP. Lyon (1966) argues that the beginning of the LIP was marked by a revival of Middle Horizon iconography, suggesting particular cultural or political value of this period to the people of Ica. Moreover, the remote oracle/pilgrimage center of Pachacamac on the central coast appears to have exerted particularly powerful influence on Ica during the Middle Horizon, but also thereafter on the developing regional culture in Ica. This poorly understood relationship with the central coast may have had a pivotal role in the development and rise to power of the Ica people during the subsequent LIP period.
Paleoindians of Arkansas: From the Mountains to the Mississippi of the Interior Southeast

In the past two decades, advancing methodologies and the recovery of new cultural materials have expanded our knowledge of the earliest peopling of the Ozarks, Ouachita Mountains and Mississippi Valley of Arkansas. In the late 1990’s, GIS and ArcGIS in the Mississippi Valley of northeastern Arkansas highlighted the significant association of early cultures to the lithic resources of the landscape and subsequent collaboration with PIDBA in the past decade has put this state-level record in continental context. Ongoing documentation of fluted-points and their geographic distributions continues to shed new light on these earliest cultures of the interior Southeast.

Discussant

Morrow, Sara (University of Notre Dame)

Consumption Practice and the Authenticity of “Irishness”: Everyday Material Life on the Islands of Inishark and Inishbofin, Co. Galway, Ireland

How were mass-produced consumer goods incorporated into everyday expressions of local and national identity in 19th and early 20th century Ireland? While archaeologists have explored the myriad ways that mass-produced goods circulated throughout the British Empire through networks of trade and exchange, less attention has been given to the way specifically British manufactured goods were incorporated into meaningful practices of material consumption within Irish communities. This project investigates how these industrially produced consumer products became woven into the social, religious, and cultural fabric of daily life in the Irish island communities of Inishark and Inishbofin from the late 18th century to the present day. Recent archaeological investigations by the Cultural Landscapes of the Irish Coast project on Inishark and Inishbofin, combined with the oral history of island residents, will further an understanding of the significant ways that mass-produced consumer goods were meaningfully incorporated into island life through the collection of delph (ceramics) on household dressers, and consumption of tobacco pipes in everyday life and during traditional Irish wakes.

Chair

Morsink, Joost [140] see Hendryx, Greg

Spatial Structure and Ancient Neighbourhoods: A Re-evaluation of Methods and Interpretations at Teotihuacan, Mexico

In a 2012 article exploring the spatial structure of post-Tlamimilolpa phase Teotihuacan, Mexico, we invoked both a materialist body of method-theory known as space syntax and an interactional theory of community development. Through this framework, we discussed community structure and systems of authority expressed by the architectural masses and spaces of the city. In this paper, the authors revisit this approach, with fresh eyes and in the context of our growing knowledge of ancient urbanism. How might we modify our interpretations in the face of additional data, complementary/contradictory interpretation, and critiques of the methods employed? Does this approach still hold intellectual merit?

Morton, Shawn [37] see Peuramaki-Brown, Meaghan

Meat Production and Animal Sacrifice during the Urbanization of Archaic Rome

During the Archaic period (8th-6th cent. BCE), Rome underwent rapid urbanization with concomitant social changes. This shift from modest settlement to urban center affected how animals were raised, distributed, and consumed. Namely, large-scale animal sacrifice rituals within the city acted as a new mechanism for distributing meat to the masses, provided by centralized authorities. The increased scale of animal sacrifice in the nascent city would have created new meanings to these rites and led to a new demand for meat in public spaces. While transhumance and larger herds had been used for meat production in central Italy before the Archaic Period, urbanization would have shifted the supply chain towards a reliance on animals raised outside the city. This paper uses zooarchaeological data to explore the supply chain of meat production and distribution from outside of the city and peripheral zones, urban husbandry, and civic identity in early Rome.

Discussant

Moss, Jessica (Georgia State University)

Photogrammetry Reconstructions of the Excavation Process: An Animated Georeferenced Approach

Photogrammetry can be used to reconstruct the excavation process in a way that aids in both interpretation and education. By peeling back the layers of each excavation level, three-dimensional documentation of the excavation process reveals both the archaeological materials and their context at various stages of excavation. This interdisciplinary tool can also be georeferenced with GIS and used within 3D modeling programs to extend its visualization applications into virtual or augmented reality platforms. This project examines both the methods and applications of this technique using data collected during excavations within Vista Alegre, Mexico. Units are reconstructed at regular intervals within a digital environment, creating a highly detailed animation that can be navigated and examined. Once georeferenced within ArcGIS, these collections are also used within an ongoing project to digitally reconstruct various phases of Vista Alegre for a Virtual Reality environment. Additionally, this project includes a discussion the potential educational uses of both Virtual Reality visualizations of this data and the interpretive possibilities of their use.

Moss, Julia [270] see McCheyne, Phil

Digital Technology, Digital Practices: Incorporating Digital Techniques into Archaeological Excavation and Interpretation

Digital methods in archaeology have led to new ways of recording, analyzing, and presenting archaeological sites and materials, but these new methods are adopted within the context of previously existing practices of archaeological work. Some digital recording methods in excavation build upon and sometimes displace long-standing analog methods with proven results. Digital representations of cultural materials present novel interpretive affordances compared to analog representations that, while they suggest new possibilities for analysis and scholarly communication, also challenge traditional framings through which such materials have been understood. This paper discusses these challenges in the context of implementing a ‘born-digital’ site-recording methodology at Kaymakçı, a Middle and Late Bronze Age site in western Anatolia, focusing on the effects of new digital techniques on concepts central to archaeological practice such as accuracy and precision, diligence and orthopraxy, as well as implications for working with digital representations of cultural materials in the lab and beyond.

Moss, Emanuel (CUNY Graduate Center) and Christopher H. Roosevelt (Koç University)

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Moss, Julia [270] see McCheyne, Phil
Muller, Samantha (Rutgers University—Camden)

[204] An Overview of the History of LaGrange Cemetery and Some of Its Notable and Not So Notable Residents
The First Baptist Church of Philadelphia was faced with something all churches confronted—the death of their parishioners. Their burying ground along with their church would evolve and change in both size and location over time. By mid-eighteenth century LaGrange Cemetery was in full use. Who occupied the First Baptist’s Lagrange Cemetery in early Philadelphia? Who were the notable and not so notable residents buried side by side? In exploring the history of over one hundred years of its operation beginning with the first burials on Arch Street to the believed removal of those interred to Mount Moriah, both pastor and parishioners are given their place in the cemeteries’ long history.

Mullin, John (Fort A.P. Hill, Virginia)

[281] Discussant

Mulvihill, Patrick (University of Pittsburgh)

[295] Frontier Landscapes in the Longue Durée: The Upper Moche Valley Chaupiyunga
Physical landscapes shape, and are shaped by, human activity throughout prehistory, creating a palimpsest of anthropogenic and natural landscape features that archaeologists wrestle with to understand past human behavior. Located between the Andean highlands and the arid coastline, the Upper Moche Valley chaupiyunga no doubt would represent a geological and ecological frontier in the absence of human occupation. However, over two millennia of human activity are inscribed upon this landscape and make it an excellent case-study for understanding the construction of a frontier landscape over the long durée. Is it inevitable that the region’s geological and ecological characteristics precluded its characterization as a demographic, cultural, and political frontier? At what points may the anthropogenic landscape depart from the natural in being identified as a “frontier”? What processes may affect such departures? These questions are addressed using GIS analyses of settlement patterns, landscape use, visibility, and movement applied to data collected during a full-coverage pedestrian survey of the Upper Moche Valley chaupiyunga by the author. Taking a diachronic approach to analyze two millennia of human occupation, this paper focuses on reconstructing the built landscape in order to test the effect of deeper landscape histories on subsequent occupations on the regional level.

Mullins, Patrick [68] see Hoover, Corey

Munoz, Juan (University of Texas at San Antonio)

[241] Geographical Margins as Key to Understanding Crop Dispersal Mechanisms in Prehistory: Case Study for Kyrgyzstan
More than 8000 years ago, a variety of crop species began to spread across Eurasia, reaching its edges approximately 4000 years later. The chain of mountains that stretches across Central Asia constituted a geographical obstacle that slowed down the dispersal process. Special high altitude adaptive strategies were required not only by humans, but also by plants due to changes in the length of the growing season, climatic conditions, UV intensity, among other factors. Therefore, the mountain regions acted as geographical filters that influenced which plant species and their varieties got dispersed to more distant regions of Eurasia. The territory of Kyrgyzstan (almost 90% of the territory lies above 1900 amsl) therefore constitutes a key area for the study of crop and animal adaptation strategies, as it is in this area that the filtering effect on plant and animal selection by communities would have been the most distinctive. The archaeobotanical material presented in this talk comes from high altitude sites in Kyrgyzstan. Some elements of crop adaptation observed in the research contribute towards explaining the pattern of crop dispersal across Eurasia.

Muntz, Ethan (University of Massachusetts Boston)

[237] The Space of Liminality: Between Ritual and Theater in Late Classic Ancient Maya Cave Rites
Performance theory recognizes that the boundaries between ritual and theatrical performances are often quite blurred, allowing shared methods of analysis between the two. While many have argued for a theater-state among the ancient Maya, few have ventured beyond the large ceremonies conducted in great plazas to consider the more esoteric nature of public, semi-public, and private rites taking place in the natural landscape. Ancient Maya caves were used exclusively as ritual spaces, yet there has been little consideration of the performance characteristics of these sites. The ritual performances conducted in and around caves create a space for thinking about these venues as “theaters” with audiences, performers, backdrops, and lighting. In this paper we analyze architectural modifications to caves found in the Chiquibul Forest Reserve in Western Belize. We argue that architecture structured space and determined the parameters of its use, illustrating how some features channeled movement; some restricted space, while others focused attention. Our study sheds new light not only on the performance characteristics of ritual cave use but on the nature of the participants as well.

Mysak, Sara [233] see Tomaskova, Silvia

Mysak, Sara (University of Kentucky)

[233] The Anthropology of the Parachute: Performance Theory and Ancient Maya Ritual Cave Use
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Nipmuc land following King Philip’s War (1675–1676).
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Mundt, Jessica (VCP Alexandria) and Jasmine Heckman (VCP) [326] The Veterans Curation Program: Unintended Public Archaeology
The Veterans Curation Program was created with the mission to rehabilitate U.S. Army Corps of Engineers (USACE) archaeological collections while providing temporary employment and vocational training to veterans. In the nine years that the VCP has been in operation, it has evolved into a dynamic public archaeology effort that engages non-archaeologists in the field of archaeology on a daily basis. This paper explores the varied approaches to public archaeology within the Program, as well as the intended and unintended outcomes.

Munger, Tressa (Augustana University), Caitlyn Stellmach, Laura Peck (Augustana University), KC Carlson (Augustana University) and Lee Bement (Oklahoma University) [223] The Butchering Patterns Present at the Bull Creek Camp: A Late Paleoindian Site in Oklahoma
Bull Creek, located in the panhandle of Oklahoma, is a rare Late Paleoindian camp on the Southern Plains. Two separate occupation levels apparent at the camp indicate two seasons of habitation. The lower camp, dominated by bison bone, is the focus of this analysis. Bone tools and distinct butcher marks provide evidence of butchering behavior 9,000 years ago on the Southern Plains of Oklahoma. This poster describes the findings of butchering processes at the site. Large sections of bison are apparent at the camp as well as articulated leg elements broken into tools. The evidence provided in this poster indicates that the kill site is likely not far away and that bone tools were frequently used during this occupation of the site.

Munkittrick, Jessica (Memorial University of Newfoundland) and Vaughan Grimes (Memorial University of Newfoundland) [88] Exploring Childhood Health through Lead Trace Element and Isotope Analyses: A Case Study of Historic Populations in Newfoundland, Canada
Lead was ubiquitous throughout the cultural environments of the Atlantic World during the 18th and 19th centuries and can be toxic to humans, particularly children. There is a long history of examining human lead exposure using trace element and isotope data in archaeological remains, but most studies have sampled bone tissue, which is prone to diagenetic alteration. More recently, researchers are sampling tooth enamel, which is more likely to retain a biogenic record of lead exposure. Since teeth form during childhood and lead exposure reflects individuals' interactions with their physical and cultural environments, this tissue presents an intriguing means to examine childhood health. However, archaeological research often overlooks children as meaningful cultural actors. The consideration of childhood social theory can help to illuminate methodological and theoretical opportunities to produce better lead trace element and isotope data that can be more clearly incorporated into understanding the Child's World. By examining the lead trace element and isotope values of tooth enamel produced using ICP-MS and MC-ICP-MS from individuals of historic Newfoundland populations, this paper will outline these considerations through a case study of childhood lead exposure in 18th and early 19th century Newfoundland.

Munoz, Cynthia [153] see Mauldin, Raymond

Munson, Jessica (Lycoming College), Jonathan Scholnick (Lycoming College) and Lorena Paiz Aragon (Altar de Sacrificios Archaeological Project) [302] Quality of Life Changes in an Ancient Maya Community: Longitudinal Perspectives from Altar de Sacrificios, Guatemala
Inequality is a prominent and persistent feature of all large-scale human societies that has significant impacts on everyday life. Variation in material wealth and social capital as well as differential access to specialized knowledge and other resources directly impacts household quality of life (QOL) within ancient and contemporary communities. For the ancient Maya, the establishment of political institutions centered on divine rulership significantly contributed to QOL changes during the Preclassic and Classic periods (ca. 950 BCE—950 CE). However, tracking these variations and measuring their effects pose specific challenges for archaeology. Well-documented settlements with an extensive and long-term occupation like Altar de Sacrificios provide important contexts to investigate the rapid transformations associated with the emergence of institutionalized inequality and concomitant changes in QOL across diverse domestic settings. This poster presents the results of ongoing analysis of ritual deposits excavated by the Altar de Sacrificios Archaeological Project (2016-present) and previous investigations conducted by Harvard University (1958–1963) to gain a better understanding of the wealth variations and distribution of specialized knowledge within this ancient Maya community over a span of about 2000 years.

Munson, Jessica [101] see Mejía Ramón, Andrés

Munzt, Alice (Southern Illinois University Carbondale) [81] Understanding Manifestations of Public Ritual in Late Mississippian Pottery: A Comparison of Millstone Bluff and Dillow’s Ridge Ceramic Assemblages
This research entails the thorough analysis and comparison of two ceramic assemblages to understand whether and how ritual manifests in pottery of the Late Mississippian Southeast. The study focuses on ritual phenomena exhibited at two Late Mississippian Period (ca. late 1200s A.D. to A.D. 1500) settlements in southern Illinois, the Millstone Bluff site in Pope County (11Pp3) and the Dillow’s Ridge site in Union County (11U635). Millstone Bluff has been interpreted as a site of public ritual and unusual symbolic importance evidenced by its general location and topography, spatial organization, and distinctive rock art. Though Dillow’s Ridge was the locale for an inordinate level of chert tool production, in other ways the site is understood to be typical of Mississippian villages for this region and time. The sites serve, respectively, as proxies for high and low levels of public ritual phenomena. As a case study of the Late Mississippian cultures of the Ohio River Valley, this comparison of the Millstone Bluff and Dillow’s Ridge sites provides an opportunity to evaluate the efficacy of current ceramic analysis methods for identifying ritual and understanding the social motivators that underlie ritualized activity.

Murakami, Tatsuya (Tulane University) [262] Changing Urban Networks in Formative Central Mexico: A View from Tlalancaleca, Puebla
It is likely that Formative urban centers and their interactions with one another provided cultural and historical settings for the creation of Central Mexican urban traditions during later periods. Yet their urbanization process remains poorly understood. Our research over the last six field seasons indicates that some residential groups were settled at Tlalancaleca towards 800 BC and the settlement was urbanized with a significant population growth during the later Middle Formative period (ca. 650–500 BC); the city experienced large-scale urban transformations during the Late Formative (ca. 500–100 BC) and a subsequent and final urban expansion during the Terminal Formative (ca. 100 BC–AD 250). Tlalancaleca’s long occupational history overlaps with that of Chalcatzingo as well as Teotihuacan and, thus, provides a unique opportunity to address long-term social transformations during the Formative period. Based on preliminary results of our research at Tlalancaleca, we will consider the trajectory of urban transformations in Central Mexico over 1000 years from the Middle Formative to the Terminal Formative/Early Classic periods and discuss its implications for understanding parallel and divergent trajectories of social transformation in later Formative Mesoamerica.

Munoz, Cynthia [153] see Mauldin, Raymond

Munson, Jessica [101] see Mejía Ramón, Andrés

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[152] Discussant
[262] Chair

Murakami, Tatsuya [262] see Texis, Ariel
INDIVIDUAL ABSTRACTS OF THE SAA 83RD ANNUAL MEETING

Murphy, Beau (University of New Mexico), Adesbah Foguth (University of New Mexico) and Hannah Mattson (University of New Mexico) [190] A Case Study in the Use of 3D Modeling for Hypothesis Generation and General Archaeological Illustration

Three-dimensional modeling has become increasingly common within the field of archaeology as relevant software has become more accessible and digital media more prevalent. Despite this increase in use, the ultimate utility of the method is often debated, even by its practitioners. This poster explores the practical applications of 3D modeling along two avenues: as a process for developing hypotheses and expectations during the excavation of architectural contexts, and as a tool for use alongside conventional archaeological illustration. The excavation of a Pueblo IV field house, commenced in 2017 by the University of New Mexico field school, is used as a case study. The process of building a 3D model based upon partial excavation and comparative research is described, and the outcomes of the study in terms of enhancing learning and hypothesis construction are reviewed. Presentation of resulting models produced in the digital software program Blender are then juxtaposed with traditional archaeological illustration and the benefits and drawbacks of employing each method for this purpose are discussed.

Murphy, RPA, Larry (SCRC) [193] Discussant

Murphy, Melissa (University of Wyoming) [100] Colonial Demography and Bioarchaeology

A growing body of bioarchaeological research into the biocultural effects of Spanish colonialism on native Andean communities shows that traditional and popular narratives emphasizing the roles of epidemic disease and Spanish military superiority in the conquest of the Inca Empire are oversimplified. In this poster, I synthesize recent bioarchaeological research from different sites in Peru that has interrogated the intricacies and etiologies of native mortality and depopulation, differential fertility, migration, and population recovery, as well as successful native adaptation and mortuary practices. New scholarship has yielded some compelling results about the entangled lives of Andeans, Spaniards, and Africans under colonial rule. These new works confirm the truism that bioarchaeological interpretation is much richer when the bioarchaeological lines of evidence are complemented and accompanied by other lines of archaeological data. The florescence of research in historical archaeology in the Central Andes holds promise for future bioarchaeological research and in this poster I also detail some directions and avenues for future research.

Murphy, Melissa [169] see Garcia-Putnam, Alex

Murphy, Nell (American Museum of Natural History)

Murphy, Melissa (University of Wyoming)

Murphy, RPA, Larry (SCRC)

Murphy, Shaun (University of Toronto), Peter Bikoulis (University of Toronto) and Sally Stewart (University of Toronto; Archaeology Centre) [303] Landscapes of Acquisition and Mobility: Sourcing Raw Lithic Materials and Their Distribution in Central Cyprus

Making use of several long-term survey projects in central Cyprus, the connection between chert sources, find spots and sites are analyzed using chemical and spatial analyses to examine the relationship between mobility and community structure. The Neutron Activation Analysis (NAA) of some 150 samples shows that distinct types of chert were preferred, primarily Lefkara translucents. Spatial analyses investigate the associations between particular chert outcrops, small lithic scatters and larger settlements based on this chemical analysis. Results demonstrate clear links between chert sources, lithic scatters and sites highlighting how early settlers used resources as they settled new landscapes. We see that people were willing to travel greater distances to access desired cherts. It is likely that other activities were embedded in these journeys, which would provide not only access to preferred cherts but to a hinterland rich in animals, edible plants, fuel and water. Based on the hierarchy of site sizes, ranging from isolated finds, small scatters and up to sites of several hectares, we may also be seeing a range of site use, from casual discard to seasonal resource exploitation and longer term habitation.

Murphy, Timothy (Vandenberg Air Force Base—Contractor) [38] A GIS Analysis of Ancient Human Trails, Human Behavioral Ecology, and Agency in the Mojave and Colorado Desert

Desert environments pose challenging conditions to human travel in the form of exposure to intense weather and access to important water sources. Environmental constraints of the desert can explain people’s decisions to consider energy-efficient modes of travel through the framework of Human Behavioral Ecology. However, do not always follow the model of Human Behavioral Ecology, even in environments posing challenges that require efficient ways of living. Cultural knowledge, beliefs, and values are shared through generations, transforming an environment from constraining to familiar. By exploring the relationship between environmental constraints and route selections of ancient humans, we can support Human Behavioral Ecology as a baseline explanation for ancient trails in the desert. Although people do not always follow the most energy efficient routes, shifting their focus from efficiency to a different value. Perhaps we can further understand how people selected routes within a certain environment by measuring and comparing the most energy efficient routes on a cultural landscape to actual trails on the same cultural landscape. GIS may help us see patterns of past human decisions to follow efficient routes, as understood through Human Behavioral Ecology, and routes that deviate from the norm of efficiency, potentially indicating Agency.

Murray, Brenda (University of North Carolina at Chapel Hill), Patrick Mullins (University of Pittsburg) and Brian Billman (University of North Carolina at Chapel Hill) [240] GIS Analysis of Monumental Structures at the Late Moche Site of Galindo

The site of Galindo was a major center of the Southern Moche Region during the Late Moche Period (600–900 A.D.) and represents an important temporal transition between Moche-style polities and the Chimú Empire in the Moche Valley. During Galindo’s occupation, monumental construction shifted from adobe mound complexes to walled administrative centers known as cercaduras, suggesting a possibly larger socio-political change in how political power was being negotiated by elites. Working off of the concept of “architecture as artifact”, this project aims to examine architectural investment in monumentality during the last years of the waning Moche political tradition. To do this, a 3D map was created using aerial photographs taken with a quadcopter drone and photogrammetry software. The various structures at Galindo were then identified and analyzed using GIS software to attain the necessary data on volume and form to create informed site reconstructions. Site reconstructions were then utilized to understand changes in labor investment, elite access to labor pools, and the form of monumentality through the site’s occupation.

Murray, Emily Jane and Sarah Miller (Florida Public Archaeology Network) [84] Engaging the Public at Shell Middens to Address Climate Change Impacts: Heritage Monitoring Scouts (HMS Florida) at Shell Bluff Landing (8SJ32)

Shell Bluff Landing (8SJ32) is a dense coastal shell midden with occupation spanning 6,000 years, located in the Guana Tolomato Matanzas National Estuarine Research Reserve in Ponte Vedra Beach, Florida. The site is threatened by climate change impacts and coastal dynamics that include salt water intrusion, flooding, and, most notably, erosion exacerbated by wave action from the Intracoastal Waterway. Since Shell Bluff Landing was acquired by the State of Florida in the 1980s, land managers employed numerous strategies to manage and track the erosion at the site. However,
these efforts have proven largely unsuccessful. In 2016, the Florida Public Archaeology Network partnered with the Reserve to monitor and record changes at the site through the Heritage Monitoring Scouts (HMS Florida) program. The site serves as a training venue for engaging the public in citizen science monitoring and climate change impacts. Monitoring efforts have documented changes to the site including meters of shoreline loss following Hurricane Matthew.

Murray, John (Arizona State University), Jacob Harris (Arizona State University), Simen Oestmo (Arizona State University) and Curtis Marean (Arizona State University)

[89] Using Surface Roughness to Identify Heat Treatment in Lithic Technology

The heat treatment of stone to enhance flaking attributes was an important advancement in the adaptive toolkit of early humans. The earliest evidence for this is the heat treatment of silcrete 164 ka at the Middle Stone Age site Pinnacle Point 13B in South Africa. Heating stone prior to knapping alters the physical and chemical composition of the stone, and it has long been recognized that flaked heat-treated stone has a glossier surface. We expect this glossiness to result from a smoother flaked surface. Thus, we investigated whether surface roughness, as measured by a 3D microscope, can be used as a proxy to identify the presence of heat treatment in the archaeological record. The results of our unpublished pilot study suggested roughness parameters differ significantly between untreated and treated silcrete. In the present study, we record values for multiple surface texture parameters on a sample of experimentally created stone tools from paired heat-treated and untreated silcrete nodules. A Bayesian probability model, trained on the experimental sample, was then used to evaluate the probability individual artifacts have undergone heat treatment. This research provides a novel, probabilistic, cheap, and non-invasive technique for identifying heat treatment.

Murray, Matthew (University of Mississippi)

[196] "Our Past is Not the Other"—Anthropological Archaeology and Academic Peripheries in Central Europe

As an archaeologist who practices and teaches holistic anthropology and has long been fascinated by the rich prehistory of Central Europe, I am shy about sharing my anthropological tendencies with German colleagues. When I do, I am often greeted with surprise, confusion, and a polite suggestion that I should be in Papua New Guinea or other places where German anthropologists engage with people who are perceived as different from contemporary Europeans. In Central Europe, archaeology is traditionally tied to history and the people of its past are often assumed to be just like "us." Interpretive frameworks to explain the Iron Age, have long been derived from European medieval history, such as the concept of the Fürstensitz ("princely seat") of the early Iron Age, or from the European Classics, such as the notion that ubiquitous late Iron Age rectilinear enclosures (Viereckschansen) are functionally similar to Greek temples. While a new generation of German scholars embraces critical history and social theory, the idea that the later European past is a familiar place is persistent. As an outsider, both geographically and disciplinarily, I have challenged this perspective and sometimes received an illuminating rebuke from the European archaeological establishment.

Murrell, Monica [268] see Heilen, Michael

Murtha, Timothy (University of Florida)

[80] Livelihoods and Opportunities: Household, Land Use and Landscape Change at Tikal

Sometimes described as a mosaic, regional land use and landscape in the Maya lowlands offer a unique opportunity to investigate the spatial and temporal dimensions and the socio-ecological dynamics of a variety of cultural systems, settlement patterns, and the environment. Unfortunately, the majority of urban theory applied to the lowlands focuses exclusively on urban authority and power for the provisioning of resources. Such approaches offer useful discussion and debate about the scale and intensity of these systems, but provide little comparative anthropological information about the complex interactions among households, landscape, and ecology. Building on early regional archaeological science at Tikal, this paper describes and analyzes regional spatial and temporal variation of the distribution of households, land use, and resources in the region. Particular attention is paid to recent regional soil surveys as compared to what is known about settlement patterns. Emphasizing livelihoods and opportunities, the key purpose of the paper is to shift discussions in the Maya lowlands from generalized theory of urbanization, including obsolete urban and rural dichotomies, to household provisioning of food, resources, and ecosystem services. In this context, landscape and planning are spatially heterogeneous household centered responses best described as a lowland Maya mosaic.

Musser-Lopez, Ruth (River AHA (Archaeological Heritage Association))

[73] Virgin Puebloan and Fremont Rock Art at Petroglyph Corral

Though routine interaction may not have been the case, the Fremont were a part of the iconic world of the Virgin (Anasazi) Puebloan people who occupied southeastern Nevada north of Las Vegas in Evergreen Flats, 75 miles northwest the Lower Colorado River’s north end bend. Within that region is Petroglyph Corral visually demonstrating Puebloan people at a Fremont fringe area where the two cultures may have competed, collided or even collapsed into one another and the more recent Numic tribes. Clearly a favored place that inspired recurrent cycles of symbolic affirmation, the contrasting motifs on vertical panels and porphyry slabs at Petroglyph Corral indicate definite breaks in continuity of heritage and world view over the centuries as rock art accumulated there. Along with the research of excavated archaeological deposits below the panels as a part of the Evergreen Flat Project (Horne & Musser-Lopez 2017), the repatinated art, buried art, faded art, layers of art, obfuscated art and replenished art tell a story of time and change spanning 3000 years from present day Numic speakers, back to the Puebloan and Fremont, with rare traces of Hohokam and Mojavean, the archaic people who came before.

Myers, Josh [5] see Herrmann, Edward

Myyster, James, Brian Hoffman (Hamline University), Rikka Bakken (Hamline University), Steve Goranson (Minnesota Historical Society) and Camille Warnacutt (Hamline University)


A historic maritime ruins site located on Plum Island off the tip of Wisconsin’s Door Peninsula was acquired by the U.S. Fish and Wildlife Service in 2007. The Porte des Morts Lighthouse (47DR497) operated briefly from 1849 to 1858 until replaced by a more substantial lighthouse on nearby Pilot Island. In partnership with Hamline University, excavations took place between 2013–2015 to uncover evidence as to both the architecture of the building and domestic life on the maritime frontier. Spotzy historical evidence suggested that the building was not constructed to contract specifications and island life was challenging for Lighthouse keeper William Riggins and his wife Phebe and their growing family. Excavations uncovered intriguing evidence of desperate attempts by the family to stabilize crumbling walls and keep the light beacon functioning. In addition, the recovery of a robust assemblage of nearly 16,000 artifacts and faunal remains paints a picture of their daily lives from teaching writing skills to their children, feeding the family dog, and revealing Phebe's love of "Romantic Scenery" dishes.
INDIVIDUAL ABSTRACTS OF THE SAA 83RD ANNUAL MEETING

Nabity, Samantha (Utah State University), Jacopo Baggio (Utah State University) and Jacob Freeman (Utah State University)
[105] Does Increasing Social Complexity Buffer Energy Consumption from the Effects of High Frequency Climate Variation? A Western European Case Study

Humans, like any other organism, must continuously adapt to or modify their surrounding environment to maximize their fitness. One of the main sources of environmental variation that humans must cope with is climate variation. Adjustment to climate variation may include increasing investments in infrastructure (social, technological, cognitive), which acts as a buffer, filtering out the effects of higher frequency climate variation on the ability of individuals and populations to consume energy, and thus maximize an individual’s fitness or the mean fitness of a population. As investments in infrastructure increase, social complexity increases, and higher frequency climate signals (such as annual temperature or precipitation) should become increasingly more out of phase with annual energy consumption (representing a social output). Using energy consumption levels and climate data from Western Europe over the last 400 years, we evaluate this idea that increases in infrastructure increasingly buffered the energy consumption dynamics of populations from high frequency climate variations. The results of our analysis are important for developing a general theory of human responses to climate change that can be applied to archaeological case studies.

Nakhai, Beth Alpert (The University of Arizona)
[338] Gender-Based Violence and Discrimination in Middle Eastern and North African Fieldwork

In 2014, inspired by the work on gender-based violence in field settings done by anthropologists Clancy, Nelson, Rutherford, and Hinde, I began investigating field safety for archaeologists working in the Middle East and North Africa, the region in which I work. At that time, I was a trustee of the American Schools of Oriental Research—and I chair its Initiative on the Status of Women. I began by quantifying problems (Survey on Field Safety: Middle East, North Africa, and The Mediterranean Basin: 2014, 2015), looking at gender-based violence and discrimination in field assignments and in post-field research and publication.

My goals are to: determine factors contributing to safe/unsafe fieldwork environments; determine best practices and effective ways to implement them; develop standards, policies, protocols and trainings to educate excavators about relevant ethics and laws for field and research projects; and, under ASOR’s auspices, provide all excavators with much-needed information. At The University of Arizona, I work with the offices of Title IX, Global Initiatives (Study Abroad), and the Dean of Students, and I am involved with the new Center for the Study and Prevention of Gender-Based Violence. This presentation discusses the various components of this project.

Namirski, Cezary [136] see Skeates, Robin

Napolitano, Matthew (University of Oregon), Robert J. DiNapoli (University of Oregon), Geoffrey Clark (Australian National University), Ester Mietes (D7 Archeologie) and Lauren Pratt (University of Michigan)

In recent decades, increased research on the early human settlement of islands in western Micronesia (northwest tropical Pacific) has resulted in a relatively clear picture of the Palau and the Marianas Islands being settled between ca. 3200–2800 years cal BP. Despite an increased understanding of when the two major archipelagos were settled, human arrival in Yap, a group of four small islands situated between the two other islands groups, remains unclear. New radiocarbon dates from the southern site of PEMRANG suggest settlement as early as ca. 2400 cal BP, yet paleoenvironmental and linguistic data suggest settlement could be as early as ca. 3200–3000 cal BP. Clarifying these conflicting lines of evidence is critical to our understanding of human settlement in the region, yet is hampered by a lack of paleoenvironmental and archaeological research. This paper presents the results of a systematic auger survey at PEMRANG and uses the location of shell and Calcareous Sand Tempered pottery to model the extent of early settlement in southern Yap.

Napolitano, Matthew [13] see Kingrey, Haden

Napora, Katharine (University of Georgia), Victor Thompson (University of Georgia), Jeff Speakman (University of Georgia) and Alexander Cherkinsky (University of Georgia)
[35] Establishing a Multimillennial Dendrochronological Sequence in the Atlantic Southeast, USA

This paper discusses advances in the development of a multi-millennial ring-width chronology based on bald cypress (Taxodium distichum) from the mouth of the Altamaha River in Georgia. New insights into the environmental history of coastal Georgia are discussed, including the archaeological implications of major climatic and ecological events visible in the ancient cypress rings. Finally, we focus on environmental conditions before, during, and after the transition from the Late Archaic (ca. 4500–3100 B.P.) to the Early Woodland (ca. 3100–2400 B.P.), comparing the timelines of change indicated by tree-ring proxies to events occurring in the region and around the world in this period of global cultural and climatic upheaval.

Narvaez, Alfredo [7] see Michell, Samantha

Narvaez, Jose
[64] Archaeological Investigations in El Paraíso, A Late Preceramic Architectural Complex in Lima—Peru

El Paraíso architectural complex is located in the lower section of the Chillón River Valley, less than 2 km from the Pacific Ocean, in Lima, the capital city of Peru. It is composed by 14 structures, or huacas, distributed in an area of 47 hectares, in a rural place named Chuquitanta. The site is recognized as one of the earliest expressions of monumental architecture and social complexity in Peru since the works of Frédéric Engel in the 1960’s and Jeffrey Quilter in the 1980’s. Since 2015, the Peruvian Ministry of Culture is developing a project of investigation, conservation and restauration of the site. This presentation explains the results of the first two years of the project. So far, we developed excavations in architectonics I, III, IV, VI, and IX, defining the constructive phases of those buildings, and recovering evidences of an economy based on agriculture production complemented with the exploitation for marine and riverine resources. Also, offerings chambers were discovered with especial artifacts like slings, lithic clubs, digging sticks, a cactus, and the burial of a young women. Other burials of the Late Intermediate and Late Horizon Periods are giving important information about the Colli occupation of the site.

Nash, Brendan [59] see Joyce, Arthur

Nash, Carole (Geographic Science, James Madison University)
[328] Soundscape and Place: Acoustic Archaeology in the Mountains of the Middle Atlantic

As permanent landmarks, waterfalls and associated plunge pools are documented among traditional peoples as liminal and sacred spaces. A review of ethnographic and archaeological literature identifies these features as sources of life and transition, requiring proper preparation in advance of approach. The symbolic and experiential character of waterfalls may be in evidence in the Virginia Blue Ridge, where a small number of Middle and Late Woodland sites near named waterfalls are outside the topographic parameters of modeled site locations. Found on north-facing, steep slopes, these small ceramic-bearing sites have been documented in the several well-known falls settings in the Blue Ridge Mountains. Decibel readings and
sound mapping with ArcGIS demonstrate the correspondence of archaeological site locations to areas where waterfall sound is most highly magnified by stream hollow walls. An example of Feld’s “acoustemology,” which takes into consideration sensory experience and memory as central to place identity, these Blue Ridge sites may represent locations where Native peoples paused to prepare themselves prior to approaching spaces requiring reverence.

[329] Chair

Nash, Donna (UNCG)

[82] Cerro Mejía: A Wari Community Divided?
The Wari-affiliated community on Cerro Mejía is divided by large walls that cut the slopes into vertical strips. These segments of the site may represent divisions of the settlement that the occupants recognized, agreed with, and maintained or these groupings may have been imposed by Wari officials. In this paper, I describe the features of Cerro Mejía and consider this important question. In light of overt differences between houses with regards to form and construction techniques I suggest that barrio walls divided colonists from different regions, who arrived sometime in the seventh or eighth century CE. Also, despite several generations of co-occupation at Cerro Mejía it appears some elements of quotidian life were maintained as distinctive between these groups when the site was abandoned and smaller communities were founded in the early Late Intermediate Period (ca. 1250 CE).

[165] Discussant

Nathan, Smiti [121] see Buffington, Abigail

Nation, Humberto, Leah Minc (OSU), Holley Moyes (UC Merced), Polly Peterson and James Brady (CSU Los Angeles)

[134] Analysis of Culturally Derived Speleothems by INAA: An Analytic Approach to Sourcing

Recent investigations in various surface and underground cave sites indicate the existence of extensive political, economic, religious and military exchanges between polities in the Maya lowlands of Belize.

The occurrence of “foreign” materials at surface and cave sites have become an increasingly well-documented phenomenon (Brady et al. 1997) and are indicative of transport of speleothems during ancient Maya cave visitations. This phenomenon has raise several questions such as the spatial and temporal extend of these interactions, practices, and specifically the relationship between Maya polities and proximal or distant caves.

Geochemical analysis of samples by Instrumental Neutron Activation Analyses (INAA) is a very common and reliable practice. In this study we analyzed (71) samples comprised of various types of speleothems (Stalactites, stalagmites, flowstones, cave pearls) collected in various locales in Belize (Macal, Barton Creek, Pine Ridge, Roaring Creek, Cave’s Branch and Sibun Valley). Our samples were come from two separate expeditions, the Belize Valley Speleothem Project and provided by Dr. Holley Moyes (U.C. Merced), and Xibun Archaeological Research Project provided by Dr. Polly A Peterson. Our results elucidates the use of INAA as a viable method of sourcing lithic materials, differentiating samples within the same cave and between different caves.

Nauman, Alissa [186] see Hull, Emily

Nautiyal, Vinod [3] see Gupta, Amita

Navarro Castillo, Marx [18] see Paling, Jason

Navarro-Farr, Olivia (The College of Wooster)

[292] Teaching Scientific Anthropology in the Age of Trump: Towards a Pedagogy of Science Literacy and Advocacy

The year 2017 was one of extraordinary science activism. Scientists took to the streets as the overwhelming empirical evidence demonstrating humanity’s role in ushering in global warming continued to be ignored. Politicization of climate change, and science itself, has fostered a dangerous rejection of scientific knowledge prompting numerous conspiracy theories involving everything from so-called flat-earthers to anti-vaxxers, intelligent design proponents and climate deniers. Such perilous and unfounded claims thrive due to repeated efforts from faith-based organizations paired with the far right to frame science as leftist elitism at best and incompatible with faith at worst. Insufficient emphasis on effective science pedagogy darkens this picture. Within the curricular confines of anthropology courses, pedagogical strategies aimed at defining science while illustrating its uses within the discipline is critical. Learning goals aimed at 1) understanding science as process 2) critical thinking, and 3) competence in science literacy prepare undergraduates for engaging effectively in discussions about climate change, the Anthropocene, and its implications. In our age of unprecedented information access, an informed community of science advocates is a major defense against the myriad unfounded arguments, assertions of fake news, and spin.

[129] Discussant

Navarro-Farr, Olivia [98] see Goodrich, Arabella

Navarro-Farr, Olivia [242] see Varlan, Abigail

Nayak, Ayushi (Max Planck Institute for the Science of Human History), Michael Petraglia (Max Planck Institute for the Science of Human History), Nicole Boivin (Max Planck Institute for the Science of Human History) and Patrick Roberts (Max Planck Institute for the Science of Human History)

[310] Domesticating the Mosaic: Stable Isotope Approaches to Agroecologies in South Asia

The origin of agriculture is a long-standing and pivotal point of archaeological research. The focus, however, has predominantly been on the earliest instances of crop domestication, whereas less is known about the nature of early farming. South Asia with its mosaic of environments and early farming strategies demonstrates the need for nuanced attention to aspects of early agro-ecologies such as manuring, water management strategies, and animal husbandry. Stable isotope analysis of botanical, faunal, and human remains has increasingly emerged as a powerful tool for reconstructing local farming practices, including crop growing conditions, herding and foddering, and dietary reliance on different types of food. Here, I discuss how these methodologies are aiding in the development of a more detailed understanding of early agricultural strategies in the diverse eco-geographical zones of the Indian subcontinent. I argue that these datasets allow us to link subsistence observations to changes and differentiation in social organisation and to anthropogenic landscape use and perception.

Ndiema, Emmanuel [99] see Curley, Angelina
Neeley, Michael (Montana State University) and Craig Lee (Metcalf Archaeological Consultants and Montana Sta) [155] Assessing Cortex at the Beaucoup Site (24PH188/189) in Northern Montana

Although archaeological analyses of lithic assemblages generate large quantities of data, it can be difficult to equate the observations with past behaviors. One variable that is regularly recorded is that of cortex. The presence/absence of cortex is often linked to reduction intensity with variable cortical frequencies linked to early or late stage reduction and potentially reflective of residential mobility. However, we lack reliable markers or values to support our interpretations. Recently, Harold Dibble (and others) have proposed a method for evaluating assemblage cortex by comparing observed and expected frequencies. These values serve as a baseline for interpreting and understanding assemblage variability along the lines of forager mobility. This paper applies the method developed by Dibble and others to the lithic assemblage from the Beaucoup site (24PH188/189) in northern Montana, a Late Prehistoric site with spatially distinct kill, processing, and residential areas. The lithic raw materials found in the assemblage (particularly quartzites) occur on-site and, as a result raw material size, shape, and origins are known. Our preliminary examination of cortex patterns indicates spatial differences between the areas of the site which may reflect variations in residential mobility.

Neff, Linda, Ted Neff (Coconino National Forest), Peter Pilles (Coconino National Forest) and Ronald Krug (Verde Valley Chapter of the Arizona Archaeological Society) [48] A Settlement Pattern Analysis of Yavapai and Apache Archaeological Sites in the Verde Valley Area, Central Arizona

Ethnohistoric accounts, historic records, and the archaeological record indicate the Yavapai and Northern Tonto Apache lived a mobile lifestyle during Protohistoric time (approximately A.D. 1300—1850) across the diverse environment of the Verde Valley area of Central Arizona, just south of the Colorado Plateau. Due to their subtle, portable, perishable, expedient, and reused materials, these areas have been less extensively studied. The presence of rock clearings, rock rings, modified Puebloan masonry, roasting pits, rockshelters, rock art, utilitarian pottery wares, projectile points, and ground stone are present that indicate continuous occupation in the Verde Valley area during the Protohistoric period. Our poster presents the results of a settlement pattern analysis focused on the Verde Valley area terrain within the Red Rock Ranger District of the Coconino National Forest. Using the Forest’s archaeological databases and other data sources, we explore the Yavapai and Apache settlement pattern in relation to major drainages, environmental zones, Puebloan archaeological sites, and trails.

Assessing Cortex at the Beaucoup Site (24PH188/189) in Northern Montana

Nef, Ted [48] see Neff, Linda

Negronio, Fabio [219] see Pothier Bouchard, Geneviève

Neill, Oscar (Arqueólogo) [299] Entre Mesoamérica y el Área Intermedia, Patrón de Asentamiento Arqueológico en la Costa Nororiental de Honduras

La zona nororiental de Honduras en la época prehispánica, y su interacción con Mesoamérica al oeste, ha sido poco abordada. El patrón de asentamiento regional así como interno de cada sitio es igual poco conocido y muchas veces confundido con el área vecina al este. Los reconocimientos superficiales en esta década nos han brindado resultados preliminares sobre el patrón de asentamiento regional y de sitio en la costa nororiental, concretamente en la Cuenca del Río Cangrejal, el Bajo Aguán en el Valle del mismo nombre, y la llanura costera entre Tela y Trujillo. Esto nos brinda una aproximación concreta como el patrón de Asentamiento en esta zona, así como el mapa de los sitios y la clasificación de estos como medio comparativo con los sitios Mesoamericanos y los del Área Intermedia, siendo el primer paso la identificación de posibles patrones culturales y interacción entre áreas culturales.

Neill, Fraser (Monticello), Lindsay Bloch (Florida Museum of Natural History, UF), Jillian Galle (Digital Archaeological Archive of Comparative Slav) and Jeffrey R. Ferguson (University of Missouri Research Reactor) [51] Developing Reproducible Methods for Defining and Evaluating Ceramic Compositional Groups Derived from NAA and LA-ICP-MS

The Digital Archaeological Archive of Comparative Slavery (DAACS), in collaboration with MURR and UNC Research Laboratories of Archaeology, has analyzed the elemental composition of nearly 400 coarse earthenware sherds from eighteenth and early nineteenth century plantation contexts from Jamaica. All of the sherds were analyzed using Neutron Activation Analysis (NAA), while nearly forty percent of these same sherds were analyzed via laser ablation-inductively coupled plasma-mass spectrometry (LA-ICP-MS). We develop a transparent workflow in R for identifying trial compositional groups and then evaluating them. We apply this workflow to elemental datasets generated by the two methods and compare the results, highlighting differences in the number of groups and relationships among sherd assignments to those groups. Finally, we assess the agreement among methods for evaluating our ideas about ceramic and manufacturing networks in early Jamaica.

Neiman, Fraser [51] see Galle, Jillian

Neitzel, Jill (University of Delaware) [325] Color by Design on Hohokam Pottery

This paper investigates whether hatched designs on Hohokam red-on-buff ceramics symbolized colors other than the red that was used to paint them. This idea is an extension of previous research done on Ancestral Pueblo and Mogollon black-on-white pottery. J.J. Brody initiated these investigations with his suggestion that hachure on Chaco ceramics from northwest New Mexico represented the color blue-green. Stephen Plog subsequently confirmed this hypothesis by comparing the colors and designs on other kinds of Chaco artifacts. More recently, Will Russell and colleagues applied Plog’s analytical approach to Mimbres pottery from southwestern New Mexico with somewhat different results. While they too found that hatched designs symbolized color, the color in this case was yellow rather than blue-green. Extending this research to the Hohokam may be severely constrained by the poor preservation of painted non-ceramic artifacts, but the results could provide new insights into cosmology, regional interaction, and cultural continuity throughout the late prehistoric Southwest.
The Best Defense Is a Good Offense: Culturally Affiliating the Ancient One by Following the Law

The 20 year journey to repatriation of the Ancient One was long, arduous, frustrating, eye opening, and an education in the NAGPRA law. Over the years we have discovered how poorly understood the law can be. In the case of the Ancient One, the ownership or control of his remains falls under Section 3 of NAGPRA for inadvertent discoveries on federal lands after 1990. An overview of the evidentiary standard applicable to cultural affiliation determinations under NAGPRA will be presented. All available, population specific data for the Columbia Plateau was used. Scientific certainty is not required but rather a preponderance of the evidence standard, or belief that the existence of a cultural affiliation is more probable than its nonexistence. The claimant tribes followed the requirements set forth in the NAGPRA law and regulations to establish a relationship of shared group identity that can be reasonably traced between the Ancient One and themselves.

Discussant

Neller, Angela [253] see Valdez, Velma

Ethnographic sources indicate that fire and its alternate forms—smoke and ash—are powerfully symbolic substances for many historic period southeastern Indian groups. The remains of fire are frequently deposited in ways that amplify its power, or alternatively, attempt to neutralize it. This paper examines ash deposition at Parchman Place, a late Mississippi period (AD 1300–1541) site located in the northern Yazoo Basin. Here, and elsewhere in the Southeast, Mississippian people incorporated ash and other substances with cultural significance into earthworks of differing scales and types. Drawing on ethnohistoric and ethnographic accounts regarding the importance of fire and the disposal of its remains, I argue that people called upon the various powers of fire by depositing ash in specific ways and at key transitional moments. In doing so, Mississippian people attempted to negotiate differing views regarding leadership, relations among community members, and the importance of maintaining their place within the Mississippian cosmos.

Discussant

Nelson, Erin [122] see Petrozza, Michael


This paper compares two new predictive models of prehistoric archaeological site locations to better understand modelling successes and complications. For my recent M.A. thesis project, I created one model for Yellowstone National Park to predict Paleoindian site locations within the Greater Yellowstone Ecosystem of the northwestern Great Plains and Rocky Mountains. I created the second model for the Pinelands region of central New Jersey for the United States Air National Guard, Warren Grove Gunnery Range. Both regions—Yellowstone and the Pinelands—have enough previous archaeological data to propose a Geographic Information Systems (GIS) predictive model of prehistoric site locations. While construction of the models varied for a variety of reasons, I used generally similar modelling methodologies for both. However, these two models were developed from very dissimilar site locational data and from completely different regional landscapes. On one hand, the Yellowstone model was developed specifically for Paleoindian archaeological site locations over a large and diverse mixture of landscapes in the Great Plains and Rockies. In contrast, the Warren Grove Pinelands model was developed using a relatively low number of sites, by comparison, within a fairly homogenous landscape.

Discussant

Nelson, Peter [272] see Petrozza, Michael

Indigenous Refusals of Settler Territoriality: A Case from the Tolay Valley in Central California

Spanish, Mexican and American waves of colonialism in Central California changed the lives of California Indian peoples in very drastic ways. California Indians were removed from their homes, forced to perform labor, and were moved into poor living conditions that contributed to declines in health and the lives of many California Indian lives. The physical removal of California Indians from their homes was also an attempt by Spanish, missionaries and soldiers to re-imagine the indigenous world. Under Mexican rule, California Indians were transferred to ranchos to perform labor in similarly poor conditions. And during the early years of California statehood in the 1860s, so-called “vagrant” laws enabled white settlers to enslave California Indians who were found “idle” on their lands. Despite these hardships necessitating great change in traditional lifeways, California Indians remained immersed in and connected to a broader Indigenous world in which colonial places and institutions were only one part. That is, California Indians refused to wholly accept settler boundaries, ownership, and ways of using traditional lands by trespassing on settler-designated private property to hold ceremonies and collect traditional resources. A case from the Tolay Valley in Southern Sonoma County, California, during the nineteenth century will be presented.

Chair

Nelson, Ricky, Valda Black (Washington State University) and Danielle Kurin (University of California Santa Barbara)

A Traditional Approach to Analyzing Stunted Femoral Growth in Peruvian Highlands

Minimal research has been done on observing whether there have been incidences of stunted growth in populations, in times of environmental stress and social turmoil. One such example are the populations found during the Late Intermediate Period (~AD 1000–1400, LIP) in the South-Central Peruvian highlands. Utilizing Buikstra and Ubelaker’s Standards, nine measurements were taken on the femora of 37 individuals (N=37) from the sites of Sonhuayo, Masumachay, and Mina Chichihuanaray in the Andahuayas region of the South-Central Peruvian highlands during the LIP. Measurements were used to calculate individual, population heights, and sex to compare within and between population variation and the possibility of stunted growth. The results showed an average of maximum length of 39.46cm within the population. The 7males (N=7) have an average maximum length of 41.33cm, with a minimum and maximum of 38.2cm and 44cm. The 30 females(N=30) have an average maximum length of 38.99cm, with a minimum and maximum of 38.2cm and 44cm. Stunted individuals were determined by finding those who fell one or two standard deviations below the mean. Out of all three sites, five female individuals fell below this range, which can aid in questions pertaining to further research.

Discussant

Nelson, Shaun (Utah National Guard)

Discussant

Nelson, Theresa (Univ of Sheffield, Grantham Centre for Sustainable Futures, Dept of Archaeology)

Moderator

Discusant
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Neme, Gustavo [9] see Salgán, Laura

Nenova, Denitsa [130] see Wallrodt, John

Nesbitt, Jason (Tulane University) [178] Late Initial Period (1100–800 B.C.) Interaction between the Highlands and Ceja de Selva of North-Central Peru: A Case Study from Canchas Uckro, Eastern Ancash

This presentation will discuss the results of recent archaeological research at the late Initial Period (ca. 1100–800 B.C.) site of Canchas Uckro. Located in the Puccha Valley, Canchas Uckro is positioned approximately 25 km to the north of Chavín de Huántar and 40 km from the upper Marañón river. Analysis of the pottery assemblage from Canchas Uckro suggest strong parallels with the Urubarriu Phase of Chavín de Huántar. However, a considerable proportion of the pottery also exhibits formal and decorative attributes, such as zone-hatching, which are characteristic of contemporary assemblages from the Marañón, Huallaga and Ucayali drainages. The presence of pottery from these regions suggest that Canchas Uckro was involved in a widespread interaction sphere with cultural groups in the Upper Amazon. The findings from Canchas Uckro have implications for conceptualizing long-standing debates about the role of the ceja de selva during the formative stages of Chavín de Huántar and surrounding regions.

Nesbitt, Jason [6] see Schroll, Andrew

Netherly, Patricia (Vanderbilt University) [273] Why the Chimu State of the Northern Coast of Peru Failed: Rapid Expansion Is Not Always Enough

In the last 1000 years before the arrival of the Spanish in 1532, the expansionist states of the Andean region of Peru—like those of the Old World—appear to have grown incrementally, flourished briefly, and disappeared. Despite intensive study in the 1970’s and since, the inner structure and dynamics of Chimu have eluded archaeologists because there is limited information from European observers and because there are many questions archaeologists have not yet addressed. At its maximum, Chimu extended some 1200 km. from Carabayllo north of Lima to the Zarumilla River at the modern frontier with Ecuador. It had conquered and administered polities which spoke different languages: Quechua, the Muchic-speaking heartland of Lambayeque and Jequetepeque, and the valleys of the far north where Talcan and Sec were spoken. South of the Santa River, Quechua may have been a common language. In this region the economic structure differed. A study of new data and a reexamination of old evidence suggest that Chimu’s successes arose from its social and political structure, much like those of its predecessors, the Moche and Lambayeque. However, the seeds of its defeat by the Inka lay in these same institutions.

Neuhoff-Malorzo, Patricia [229] Agriculture and Resource Procurement for the Castro Settlements of NW Iberia: Examination of Floatation Samples for the Castro Site of Bagunte

Collection and examination of botanical remains has led to evidence of the development of agriculture in conjunction with the collection or procurement of wild resources at a number of Castro sites across the NW of Portugal and Galicia. Evidence procured to date from a number of such sites stretching from the Galician Region of Spain to the site of Monte Mozinho near the municipality of Penafiel in Portugal covers a span of time from Early Bronze Age to Roman Period and exhibits a combination of crops produced for human consumption, fodder produced for pastoral practices, and wild resource procurement for diet supplementation. The location of Bagunte lends itself advantageously to both agricultural production and resource procurement for diet supplementation and fuel resources. A study of new data and a reexamination of fossilized wood collected through floatation of soil samples amassed through excavation and the seed samples gathered during previous field seasons.

Neusius, Sarah (Indiana University of PA) [43] Animal Use among the Monongahela: Insights from the Analysis of the Johnston Site Faunal Assemblage

Excavations at the Johnston site (36N2), a Middle Monongahela village located in western Pennsylvania, have generated a large, generally well-preserved assemblage of faunal remains. Between excavations in the 1950s and those conducted since 2005 by IUP, a significant portion of this large ring village has been sampled. Thus, this assemblage provides a rare opportunity to document the use of animals by the Monongahela. Initial faunal analysis was undertaken by John Guilday of the Carnegie Museum in the mid-1950s. More recently several preliminary studies of the composition and spatial distribution of this assemblage as well as of contrasts between assemblages collected during various excavations have been undertaken over the last decade. It is now possible to synthesize these studies and develop a more definitive statement of this assemblage’s implications for reconstructing various aspects of Monongahela life including subsistence, butchering, bone tools, use of space, refuse disposal practices, and social interactions. This paper presents key inferences and makes clear that zooarchaeological analyses contribute significantly to regional perspectives on the Late Prehistoric period in western Pennsylvania.

Neuzil, Anna (Environmental Planning Group, LLC) [151] Discussant

Neves, Eduardo (University of São Paulo) [213] The Role of Lowland Tropics as Centers of Landscape Domestication during the Middle Holocene in South America

The archaeological record of the Middle Holocene is lacking in many areas of lowland South America. The reasons for such hiatuses are yet not clear, but there is an emerging pattern showing that the areas where one finds complete records of human occupation that span most of the Holocene are typically located on estuaries, extensive floodplains or other wetlands normally placed at ecotones. On the other hand, mounting paleoecological data shows that the climatic conditions of the Middle Holocene where probably dryer than today. This paper argues that wetlands and ecotonal areas played a major role as places for landscape domestication and cultural innovation in the tropical lowlands during the Middle Holocene and that such innovations spread through other areas after the establishment of climatic conditions similar as of today starting ca. 3,000 years BP.

Neves, Eduardo [69] see Pugliese, Francisco

Newbold, Josie (Brigham Young University) [224] A Structural Geological Study of the Tombs of Nabataean Petra

Many studies have discussed the first century BC to first century AD Nabataean rock-cut monuments in the Nabataean city of Petra, Jordan. These surveys provide information about proposed chronologies for the façade tombs and limited data about burial customs of the Nabataeans themselves. One neglected topic is the Nabataean tomb placement in relation to the structural geology of the Petra region. During the 2014 field season of the BYU
Ad-Deir Monument and Plateau project, it was discovered that the Ad-Deir Monument was built between geologic faults and fractures, suggesting that the Nabataeans used these features to carve the façade. In order to study the Nabataean knowledge of geology and the landscape used in the placement of their tombs, I have been working on a survey of the Petra façade tombs, with an emphasis on their relationship to the local and regional faults and fractures. This poster will showcase some of my findings.

Newhard, James (James Newhard)  
[112]  Discussant

Newlander, Khorì (Department of Anthropology & Sociology, Kutztown University)  
[92]  Using Lithic Conveyance to Reconstruct Paleoindian Cultural Landscapes in the Great Basin  
Archaeologists commonly use the geographic patterning of sourced artifacts to understand how prehistoric cultures used their landscapes, yet exactly what this patterning indicates remains unclear. The Paleoindian literature reflects a tendency to assume that toolstone conveyance reflects direct acquisition (i.e., mobility) motivated by subsistence and technological concerns, rather than acquisition (i.e., exchange) motivated by social concerns. Yet the challenge of actually distinguishing between mobility and exchange persists. Here, I offer some ideas that might help us make headway on the linkage problem we confront when attempting to infer mode of acquisition from patterns of toolstone conveyance, focusing on the North American Great Basin. I imagine a Paleoindian cultural landscape defined, not just by the distribution of food and non-food resources, but also other people, to propose that both mobility and exchange, perhaps operating at different scales in relation to subsistence, technological, and social motivations, contributed to the patterns of obsidian, fine-grained volcanic, and chert conveyance that we see.

Ng, Chuenyan  
[110]  Moderator

Newman, Sarah [163] see Schnell, Joshua

Newman, Tiffany (CEMML-CSU/Ft Lee DPW-EMD Cultural), Elizabeth E. Bell (CEMML-CSU/Ft Lee DPW-EMD Cultural) and Seth VanDam (CEMML-CSU/Ft Lee DPW-EMD Cultural)  
[268]  Management of WWI Training Trenches in Light of Current Military Training  
More than nine miles of World War I training trenches have been identified on USAG Fort Lee (Fort Lee) in Prince George County, Virginia. Constructed by the 80th Division at what was then “Camp Lee” beginning in the fall of 1917, these trenches represent a significant historic resource associated with the Great War. Fort Lee is also one of only a few locations where such trenches survive in the United States. However, the trenches also pose a significant challenge in balancing mission and training needs with the responsibility of all federal agencies to consider effects on historic properties while meeting the Army’s mission. The most pressing need is the development of a long-term management plan, which includes ground-truthing trench segments identified via LiDAR, detailed topographic survey of current trench conditions, and archival research regarding trench construction and use. In 2017, a small portion of the trenches was surveyed to assess feasibility of the proposed work in support of the future management plan.

Newsom, Bonnie (UNIVERSITY OF MAINE) and Julie Woods (University of Massachusetts Amherst)  
Archaeological research on aboriginal ceramics in New England has been limited in content and scope since its beginnings in the late 19th century. Few studies have attempted to connect aboriginal ceramics research with contemporary Native peoples, either through past-to-present identity connections or through Indigenous community engagement. Additionally, there have been few efforts to integrate research across New England’s contemporary geopolitical boundaries. Recognizing these deficiencies in regional scholarship, this paper discusses two ceramics studies from New England—each exploring concepts of identity. One study centers on potters living in the Penobscot River Valley in Maine during the Ceramic Period (3050–450 B.P.), and the other focuses on the Late Woodland period (1300–1600 AD) through 17th century potters in the Connecticut River Valley in Massachusetts. Each study applied Indigenous archaeologies and technological choice strategies to an archaeological problem. However, the motivations behind the studies and the social contexts of the researchers influenced the research process and interpretations. This paper reviews these studies and the challenge of using ceramics as a central element in constructing or assigning identity while contemplating the range of factors that influence how researchers make connections between past and present peoples in the geopolitical landscape of New England.

Newsom, Lee [35] see Marquardt, William

Neyland, Robert  
[232]  Discussant

Nez, Nanebah  
[72]  Oak Flat as a Traditional Cultural Property | Future Copper Mine  
On January 25, 2012, the Forest Service sought assistance from the San Carlos Apache Tribe in evaluating Chi’chil bildagoteel (Oak Flat) as a Traditional Cultural Property (TCP). This request was motivated by a land exchange proposed to congress which would transfer Oak Flat, Forest Service managed land, to Resolution Copper Mine for purposes of ore extraction. Four years later on March 4, 2016 the Keeper of the National Register of Historic Places officially designated Oak Flat a Traditional Cultural Property (TCP). The interminable four years would test the fortitude of both the Forest Service and the Tribe, as Resolution Copper and other mining supporters would work creatively and persistently to prevent the formal recognition of Oak Flat as a TCP. Politicians, organizers, and even local tribal members rallied to testify to the falsity of Oak Flat’s validity as a TCP. Hundreds of letters of objection to the nomination would cause the Forest Service and the Keeper to weigh the cost versus benefits of recognizing the cultural paradigms of the Apache people. In this paper, I will examine the nomination process of this highly contested TCP, the interference, the perseverance, and the outcome.

Ng, Chuenyan  
[153]  Subsistence Economies among Bronze Age Steppe Communities in the Southeastern Ural Mountains Region, Russia  
The long-standing subsistence model for Bronze Age Steppe Communities in the Southeastern Ural Mountains Region has been defined as a sedentary agro-pastoral strategy with dominant use of livestock. However, based on recent studies, the nature and variability of the subsistence economy, especially wild plant resources exploitation for both humans and livestock, are not well understood. As sedentary pastoral communities, the relationship between increasing livestock productivity and decreasing risk associated with resource sustainability is a continuous process. It is achieved only through control of land for grazing, regulating the composition and size of herds, and the establishment of seasonal herding strategies including foddering. This research undertakes a systematic archaeological and phytogeographical study of subsistence patterns among late prehistoric pastoralist communities during the Middle Bronze Age of north central Eurasia. The multi-disciplinary approach draws productively from ethnographic, anthropological and archaeological evidence, to examine relationships between ancient settlements, local site catchments, and the emergence of new forms of livestock herding that integrated with earlier traditions of hunting, gathering and fishing during the Middle Bronze Age in the Southeastern
Urals region of Russia. A combination of detailed macro-botanical study and experimental archaeology will produce a new model for understanding early traditions of multi-resource pastoralism.

Nicewinter, Jeanette (American University)
[17] Abbreviated Imagery on Cajamarca Cursive Ceramics
Paintings on fineware ceramic vessels and spoons by the pre-Hispanic Cajamarca culture of the north highlands of present-day Peru emphasize an abstracted and expressionistic aesthetic unlike their north coast neighbors, the Transitional Moche culture, and their contemporaries, the Wari state. During the Middle Horizon (c. 600—1000 CE), the Cajamarca culture’s paintings developed a greater emphasis on human and animal imagery while maintaining an abstraction of forms. The figures are reduced to brief combinations of lines and are placed within compositions that are tightly filled with dots, spirals and waves. The compression of space and expressionistic handling of paint emblemsizes the Cajamarca Cursive style. While the compulsion to fill space has been previously thought of as a motif or filler, the lines accentuate figures and create movement within the image. The proliferation of a small corpus of representational imagery on a variety of Cajamarca bowls, spoons and jars indicates that the image held cultural and social value and was an abbreviated version of a vast body of esoteric knowledge. The identification of key figures and actions is a portion of a larger project to extrapolate the key features of the Cajamarca culture’s ideologies.

Nicholas, George (Simon Fraser University)
[166] “Made Radical By My Own”: Acknowledging the Debt Owed to Larry Zimmerman in Radicalizing Me
All archaeology is ultimately autobiographical; our interests and intentions are intimately shaped by both people and circumstances, which sometimes are not recognized until later. An unexpected change in my own career path in the 1990s brought me into Larry Zimmerman’s orbit. His work with and for marginalized peoples, his activism, and his strong ethical stance have grounded me ever since. In this presentation I take a personal approach to discussing Larry’s influence on Archaeology in general and on (some) archaeologists in particular, I also discuss the value of understanding the biographical dimensions of the discipline and to what constitutes good practice in working with and for descendant communities.

Nichols, Linda M. [43] see Lapham, Heather

Nichols, Deborah (Dartmouth College) and Wesley Stoner (University of Arkansas)
[262] Village to City: Formative Period Political Evolution in Central Mexico
Current research has prompted rethinking about the early development of sedentism, agricultural economies, and complex societies in Central Mexico. We discuss new evidence of significant interconnected changes ca.1000 BC that through multiple trajectories involved intensified maize production, expansion of sedentary villages, expanded interaction networks, and increased social complexity. With the establishment of the first cities, the Late Formative saw corporate political economy strategies gain in importance while the preceding exclusive networks of prestige exchange that united distant parts of Mesoamerica diminished.

[N293] Discussant

Nichols, Deborah [262] see Stoner, Wesley

Nichols, Kerry (Tennessee Valley Authority)
[75] Late Woodland Cultural Adaptations in the Lower Missouri River Valley: Archery, Warfare, and the Rise of Complexity
The introduction of the bow and arrow into prehistoric Missouri during the Late Woodland Period possibly changed the Middle Woodland social dynamic and settlement pattern arrangement such that there was a major increase in social cooperation between settlements tied closely to defensive settlement strategies. Small villages faced the possibility of effective, long-range attacks that could potentially lead to the quick application of overwhelming force on unprepared villages. To address this potential, settlements moved to less productive upland locations with inter-visible settlement clusters that provided for mutual defense through defense in layers. As agriculture became better established, this pattern of defense again changed as people nucleated into larger sites in highly productive, lowland areas. Defense was still a significant consideration as reflected in both the selection of defensible topographic settings and the apparent creation of a borderland along the river. The larger number of people in each village provided safety in numbers and decreased the likelihood of overwhelming attacks. The influence of archery and the selection for effective defensive strategies in the face of archery-based warfare could help explain the rapid shift to inter-visible, upland sites during the Late Woodland Period and the subsequent rise of large nucleated settlements.

Nicolas, Richard (University of Wisconsin- Madison)
[8] Using Sacred Landscape Model of Indigenous Cave Use in the Philippines
Caves are natural spaces, but like other natural settings, they can be perceived by people through highly variable cultural lenses. Caves are not generally used as utilitarian spaces, but are more often sacred spaces where rituals are performed. The material record of these subterranean features can provide insights for how past peoples connected to the symbolic landscapes of caves, thus affording opportunities to assess behaviors. Research on the ritual uses of caves is fairly new in the Philippines, but cross-cultural comparison holds much promise. For instance, much research has already been conducted in the ritual use of caves in Maya contexts of Mesoamerica, which can be used as a foundation for approaches in other countries. Using best practices from cross-cultural contexts, this poster provides a preliminary analysis of certain cave sites in the Philippines. The research is based on a combination of recent field surveys and secondary sources, and offers a framework for identifying cave sites as sacred landscapes in order to contribute to ongoing studies of indigenous rituals in the Philippines.

Nicolay, Scott (University of California, Merced)
[136] Offerings in the Mogollon Underworld: Big-Eyed Beings and Birds
Three Classic Mimbres vessels depict similar ceremonial processions in which individuals carry effigies of animals and/or goggle-eyed beings. The goggle-eyed effigies are versions of a figure common in both Mimbres and Jornada Mogollon rock art that may represent the Mesoamerican rain deity Tlaloc. Similar effigies have been recovered from five cave shrines in southern New Mexico and Arizona: two wooden goggle-eyed figures and one of stone, and two wooden birds. However, modern Pueblo informants do not recognize either this ceremony nor its apparatus. Together these effigies and their depictions represent a once-widespread but now extinct tradition related to rainmaking and the underworld.

Nielsen, Axel (CONICET Argentina)
[181] Chullpas and the Political Relations with the Inside-World in the Inka Empire
Previous research has interpreted chullpas as open sepulchers, altars, and landmarks which participated in political projects mainly by helping to reproduce corporate identities through ancestor worship and by inscribing power hierarchies and territorial claims on the landscape. This paper builds on the premise that chullpas were not just things with a certain function, but non-human persons (wak’as) capable of acting in different ways, given the affordances of their corporeality as towers or chambers. This idea raises new possibilities for thinking about the political work of chullpas in the Andean
highlands. The formalized opening that characterizes these structures, for example, allowed them to mediate between the world of people (akapacha in Aymara) and the inside-world (uqhupacha), where powerful agencies lived. Combining historical information and archaeological data from the South Andean highlands, I discuss the role that chullpas played in the Inka political machine as mediators with the non-human members of society who belonged to the uqhupacha.

Nielsen, Jesper (University of Copenhagen), Christophe Helmke (University of Copenhagen) and Fiorella Fenoglio (Centro INAH, Queréţaro) [209] A Dark Horse of the Early Postclassic: The Site of El Cerrito (Queréţaro, Mexico) and Its Relationship to Chichen Itza and Tula

Ever since the first attempts to explain the close correspondences (in iconography, architecture, and writing) between Chichen Itza and Tula in the Early Postclassic it has been assumed that it was mainly between these two cities, sometimes even called “twin Tollans”, that the extended and intense contact between Northern Yucatan and central Mexico took place. A tendency among Mesoamericanists not to look further to the north and west, to present states such as Guanajuato and Queréţaro, have resulted in the surprising oversight of the major site of El Cerrito in Queréţaro. A thriving and important player of the period, El Cerrito displays iconography, sculpture and writing that is essentially indistinguishable from what is known from Tula and Chichen Itza, and the site’s largest structure, the “Basamento Piramidal” (25 m in height), is a perfect example of a radial pyramid, similar to the Temple of K’uk’ul Kan at Chichen Itza. In this paper, we briefly review current knowledge about El Cerrito and present our preliminary thoughts on its possible role in the Early Postclassic networks of trade, political alliances and intense cultural exchange. From this it follows that the architectural template for these three sites are to be found elsewhere.

Nielsen, Michael [15] see Fleischer, Malu

Nielsen-Grimm, Glenna [138] Solutions for Stabilizing and Caring for Organic Archaeological Collections

Care of archaeological materials should begin in the field. Care and stabilizing of objects, if started in the field, will greatly increase the objects research and exhibit potential when it finally finds a home in a museum. How do you identify problems and then what do you do? Proper care and stabilization of objects can and should be a priority for all object users—excavators, lab analysts, museum staff, and researchers. In this paper, object care, conservation environments and stabilizing techniques will be discussed for organic archaeological objects.

Nightingale, Sheila (City University of New York, Graduate Center), Jessica Thompson (Emory University), Jacob Davis, Flora Schilt (Institute for Archaeological Sciences, Tübingen) and Jeong-Heon Choi (Geochronology Group, Korean Basic Science Institute) [200] Evaluating the Effects of Human Disturbance on Middle Stone Age Surface Finds from Northern Malawi

Abundant surface scatters of Middle Stone Age artifacts are found throughout northern Malawi, eroding from remnant alluvial fan deposits (Chitimwe Beds). Surface surveys documenting these areas have guided the emplacement of 50+ archaeological test pits and excavations, many of which have yielded in situ MSA sites. However, the surficial evidence itself has been subject to less discussion and merits closer attention. At the Bruce site, Abundant surface scatters of Middle Stone Age artifacts are found throughout northern Malawi, eroding from remnant alluvial fan deposits (Chitimwe Beds). Surface surveys documenting these areas have guided the emplacement of 50+ archaeological test pits and excavations, many of which have yielded in situ MSA sites. However, the surficial evidence itself has been subject to less discussion and merits closer attention. At the Bruce site, important player of the period, El Cerrito displays iconography, sculpture and writing that is essentially indistinguishable from what is known from Tula and Chichen Itza, and the site’s largest structure, the “Basamento Piramidal” (25 m in height), is a perfect example of a radial pyramid, similar to the Temple of K’uk’ul Kan at Chichen Itza. In this paper, we briefly review current knowledge about El Cerrito and present our preliminary thoughts on its possible role in the Early Postclassic networks of trade, political alliances and intense cultural exchange. From this it follows that the architectural template for these three sites are to be found elsewhere.

Niinemäki, Sirpa [9] see Lipkin, Sanna

Nikulin, Alex [156] see Frazer, William

Nims, Reno (University of Auckland) [20] Little Ice Age Impacts on Traditional Māori Fisheries: Preliminary Results from North Island, New Zealand

Numerous paleoclimate proxies indicate the Little Ice Age caused marked declines in New Zealand’s atmospheric and sea surface temperatures for much of the period between 1450 C.E. and the end of the nineteenth century. These trends could have keenly affected the productivity of marine fisheries, which have always been critically important to Māori, the indigenous peoples of New Zealand. Considering the close connections that continue to exist between traditional fisheries and Māori economic, social, and spiritual life, it is likely that any changes in fish populations would have had wide-ranging effects on people’s lives in the past. In this paper, I explore the ways that studying the top-down effects of climate change on traditional Māori fisheries shed light on developments in pre-colonial Māori history, and present preliminary results for the analysis of archaeological fishbone assemblages from the northern North Island, New Zealand.

Nimura, Courtney (Griffith University) [113] Considering Seascapes, Waterscapes and the Relational

This paper introduces some key themes for this session, and considers how seascapes and waterscapes relate to the many and varied people, things, and places with which humans live. While many aspects of the archaeological record can be interpreted as referencing the watery realm through association (e.g. shell middens) or visual cues (e.g. rock art), our goal with this session is not to focus on simply identifying these connections, but to interrogate the nature of these relationships—to consider how water acts as a relational presence, and one that is informed by epistemologies and ontologies. Writing in the context of maritime people in Australia, McNiven (2008, 149) identifies a ‘relational nexus between people, spirits, and the sea’—a useful observation that orients our thinking about the various elements that can be used to explore the water/people relationship. We will introduce some of our thoughts on the complex relational aspects between people, things, and water as a better understanding the social/cultural networks in which they are embedded, and the myriad ways people construct, maintain and express their identity. We draw on archaeological, ethnographic and historical resources to introduce the relational through the lens of the watery realm.

[113] Chair

Niquette, Richard M. [186] see Williams, Justin

Nishimura, Yoko (University of Pennsylvania) [70] Japanese Archaeological Artifacts in the U.S. Museums: A Case Study from the World’s Columbian Exposition of 1893

There are thousands of Japanese archaeological artifacts stored in the major arts and archaeology museums of the United States. Many of the collections came to this country during the late 19th and the first half of the 20th centuries. In those days, archaeological objects left their home countries more readily than today and reached at the foreign museums through expeditions, inter-institutional exchanges, purchases from private art
Nishizawa, Hideyuki

What Does the “Cruz Pata” Style Look Like?: Redefining an Enigmatic EIP Ceramic Style of the Ayacucho Valley

Dramatic culture change occurred in the Central Andes at the onset of the Middle Horizon (MH) (AD 500–1000). During this period, a state society emerged in the Ayacucho Valley and expanded across the central Andes. Before the emergence of this state, however, culture contact of the Ayacucho heartland had already started with some remote regions in the late part of the Early Intermediate Period (EIP). This far-reaching contact would have gradually been intensified toward the beginning of the MH. Indeed, such cultural influence can be seen in Ayacucho ceramics during this transition. One good example is an EIP Ayacucho ceramic style known as “Cruz Pata.” It has been pointed out that this particular style bears the first indication of south coast influence of the Nasca culture. Despite being important, the Cruz Pata style has been poorly defined in the literature, and it has yet to be investigated more fully so that we can better understand the arrival of Nasca influence and its ensuing impact upon the emergence of the Huari state. This paper characterizes the Cruz Pata style by examining the ceramic assemblages recovered at the site of Huari in 2017, and redefines it in relation to other Ayacucho styles.

Nissen, Zachary (Northwestern University)

A Monumental Afterlife: Reconfiguration and Reuse at Aventura, Belize

Previous research suggests that the ancient Maya city of Aventura, Belize thrived during the Terminal Classic to Early Postclassic periods (800–1100 CE). During this period, occupants of the city constructed up to 27 buildings within the confines of the site’s A plaza. This paper presents the results of the 2017 test excavations of a sample of the A plaza buildings. Maya plazas are typically conceived of as large open places for ritual and political performance. However, these excavation findings suggest that this period was not static, and city occupants reworked their relationships to the monumental structures reconfiguring them from earthworks out of the main A plaza buildings. These practices of reconfiguration and reuse likely even continue into the later part of the Postclassic period. This paper considers how this transitional period at the site fits in with trends of reuse and reconfiguration throughout northern Belize and parts of Mexico’s Yucatan Peninsula during a period of instability and change across the Maya lowlands. Finally, it will theorize the impacts these actions and activities may have had on the daily lives of the city’s inhabitants.

Noack Myers, Kelsey, Joshua J. Wells (Indiana University South Bend), Stephen Yerka (University of Tennessee Knoxville), Sarah Whitcher Kansa (Alexandria Archive Institute) and David Anderson (University of Tennessee Knoxville)

Making Archaeological Data Publicly Accessible through the Digital Index of North American Archaeology

Scientific research conducted during the process of environmental review has been publicly and openly criticized by governmental officials in recent months. Not only does this represent an official contestation of the value of this research in the public eye, it seeks to undermine the credibility and legitimacy of science as a discipline. The research in question is federally mandated, and in the case of Section 106/Title 54, exists to avoid unnecessary harm to historic properties. If we seek to maintain an accurate record of American heritage, inclusive of all parts and parties of our history throughout human existence on the North American continent, it is vital that this work continues. However, the reporting mechanism for this information faces the risk of ending with seemingly useless binders of paper if not made publicly and openly available for re-use and analysis by researchers, officials, students, and the general public. This poster demonstrates the power of the Digital Index of North American Archaeology (DINAA) to make this information relevant, valuable, and visible to those who are skeptical about the value of compliance work.

Nolan, Kevin (AAL, Ball State University), Mark Seeman (Kent State University) and Mark Hill (Ball State University)

Time, Scale, and Community: Hopewell Unzygmotic Social Systems

Timing of Hopewellian developments plays a critical role in developing an understanding of how Hopewell came to be, and what it was. Focusing on the Scioto Hopewell sites studied by the Scale and Community in Hopewell Networks (SCHON), we present the results of 40 new radiocarbon dates obtained from 15 sites including both habitation and earthwork sites. An evaluation of previous dates from these sites allows us to more clearly define transitions within the Hopewellian occupation of the Scioto Lowlands. The results presented here will make this collection a valuable asset for research within this country.

Noldner, Lara (University of Iowa Office of the State Archaeologist) and Jennifer Mack (University of Iowa Office of the State Archaeolgi)

Oneota Burial Practices: A Case Study from the Dixon Site (13WD8)

Past populations that are associated with the Oneota archaeological tradition appear to have practiced a variety of burial practices. This paper serves as a presentation of another case study that contributes to our knowledge base of Oneota burial practices. Contexts for human skeletal remains recovered from Oneota sites range from scattered isolated elements to primary burials (both extended and flexed) oriented in various directions, both within constructed mounds and other non-mound features. This paper summarizes the human skeletal remains recovered through 2016–2017 archaeological excavations at the Dixon Site (13WD8), as well as remains that were exposed in past years by both controlled excavations and stream bank erosion. The site is an extensive Oneota village site that was initially exposed by re-routing of the Little Sioux River in 1913. Recent archaeological investigations were necessary for the much needed stabilization of the river bank.
Nolen, David S. [189] see Peacock, Evan

Nondédéo, Philippe (CNRS France), Eva Lemonnier (Université de Paris 1 Panthéon-Sorbonne), Julien Hiquet (Université de Paris 1 Panthéon-Sorbonne), Louise Purdue (CNRS-EPAM) and Cyril Castanet (CNRS-LGP) [80] Settlement Pattern and Land Use Dynamics at Naachtun: Shaping an Agrarian Maya Town

The classic Maya site of Naachtun is actually composed by a monumental and public core zone of 35 hectares surrounded by an extensive residential area of about 175 hectares. The study of its settlement pattern along with geoarchaeological works focused on agrarian strategies specifically have shown the role of vacant spaces in shaping the settlement as an agrarian town. Mainly dedicated to agriculture since the beginning of Naachtun’s occupation in the Early Classic period and maintained until the abandonment, these vacant spaces can be used (with others parameters) to identify neighborhoods and evaluate the importance of the agrarian constraint in urbanization and spatial layout of this town. In this paper, we will first present the up-to-date analysis on inner-city neighborhoods dynamics during all the Classic period. Then, we will compare the residential density, composition and spatial organization of these neighborhoods with the first data observed, at a larger scale, in the Naachtun hinterland on the basis of the 140 km² LIDAR survey.

Nondédéo, Philippe [254] see Dussol, Lydie


Geochemical provenance analysis of obsidian is a productive avenue for studying social interaction and lithic raw material procurement strategies in the U.S. Southwest. Here the results of the analysis of 180 obsidian artifacts recovered from 76 Draw, a Medio period (A.D.1200 to 1450) settlement in New Mexico are presented. The combined assemblage reflects local geochemical sources, as well as obsidian from more distant geochemical sources often seen in assemblages associated with the Ancestral Pueblo (Anasazi), the Salado people, and the Casas Grandes phenomenon during the mid-1300s. This assemblage was compared to lithic assemblages from the nearby Black Mountain site in southern New Mexico and Casas Grandes settlements in the Medio period core around Paquimé, Chihuahua, Mexico. Obsidian from sites in the Medio period core area geochemically matches sources in northern Chihuahua and northeastern Sonora, whereas the Black Mountain obsidian reflects greater reliance on the northern Mule Creek obsidian and other nearby sources. While inhabitants at 76 Draw likely had access to Mule Creek obsidian and associated sources through contact with bordering cultures, they maintained an active partnership in the Southern Network of procurement and exchange centered around obsidian sources from northern Chihuahua and the boot heel of New Mexico.

Nordin, Petra [23] see Bramstång Plura, Carina

Norman, Scotti (Vanderbilt University) [117] Revitalizing Native Practices in the Face of Colonialism: Taki Onqoy and Entanglement in the 16th Century (Ayacucho, Peru)

In the 16th century Andes (1532–1570s), conquest was not a rapid event, but rather an asymmetrical process in which Spanish authorities negotiated governance and conversion with indigenous and Inka established orders. New Spanish dictates were initially met with a variety of responses from local groups: alliance, manipulation of Spanish policies, and even violent rebellion by Inka holdouts. In the central highlands of Peru, local groups developed and participated in a revitalization movement which preached the rejection of Spanish goods, culture, and religion, in favor of a return to huaca (local deity) worship. Known as Taki Onqoy (quechua: dancing sickness), individual practitioners transformed their local beliefs, renouncing new Spanish rites and instead adopting the behaviors of a perceived idyllic (nativist) past. Excavations at the site of Iqlesiachayq (Ayacucho, Peru), a known Taki Onqoy center, demonstrate a varied response to Spanish conversion—while some appear to have fully committed to the movement, others were caught between Spanish authorities and local takiongos, and strove to placate both sides. Although ostensibly a purely “native” movement, aspects of Taki Onqoy were hybridized with Spanish Christian religion, leading to a form of religious resistance which was entangled with the very religion it was designed to oppose.

North, Chris (PaleoWest Archaeology) and Scott Courtright (PaleoWest Archaeology) [268] Urban Archaeology at the Hohokam Village of Pueblo Grande

PaloWest Archaeology recently completed two data recovery projects at the east and west ends of the seminal Hohokam village of Pueblo Grande in Phoenix, Arizona. The two projects were in the last two undeveloped parcels of Pueblo Grande, which was the largest and most influential Hohokam village in the lower Salt River Valley. Despite more than a century of historic use of these parcels, which included residential and commercial developments, substantial prehistoric archaeological deposits remained intact. The purpose of this poster is twofold: 1) to present the archaeological data from these projects and how they compare to previous archaeological work at Pueblo Grande and 2) to demonstrate how significant subsurface deposits can remain intact, even in areas of intense historic disturbance.


In order to gain a better understanding of the faunal diet composition of Native Americans in south-central Florida, an examination was conducted to determine which types of animals appeared most frequently within tree island assemblages. Of the 19,149 bones examined from a 2016 excavation, all deposits can remain intact, even in areas of intense historic disturbance.

Norton, Holly (History Colorado) [289] Discussant

Norton, Mark [127] see Jones, J. Scott

Novotny, Anna (Texas Tech University) [110] Is It Christmas Yet? Teaching Evolution to a Resistant Public

As an anthropologist I pride myself on seeing the value of diverse worldviews. However, as a biological anthropologist I continue to struggle to communicate effectively with students whose worldview denies the authority of science and the theory of evolution. In this paper I present a case study,
an ongoing negotiation between myself and a student in my introductory class who insists on a formal in-class debate between evolution and creationism. That many scientists do not find religious beliefs and evolution mutually exclusive so far falls on deaf ears. I refuse to place creationist concepts at the same level as evolutionary theory, particularly in a science class. I argue that the core of this conflict is as much about intellectual authority as it is evolution. Our mutual refusal to accept the other’s point of view is a microcosm of the contemporary political climate. Still, I feel professionally and personally compelled to communicate with and educate this student. How do we teach to a public that insists that core principles of the discipline are still debatable?

Novotny, Claire (Kenyon College)

[110] Between Government and Grassroots: Archaeologists and Social Justice in International Contexts

Working at the community level is a crucial component of an engaged, socially just discipline. Advancing archaeology towards greater inclusivity is an increasingly common conversation within the discipline. The majority of literature on this topic focuses on grassroots efforts to include marginalized descendant communities or other stakeholders in research design, implementation, knowledge dissemination and curation. An ever present and often unanalyzed aspect of research (especially abroad), are the required negotiations with government officials, who are political stakeholders invested in maintaining the status quo. These negotiations can source of friction among research goals, community commitments and governmental regulations. My research in the Toledo District, Belize, shows that dealing with political realities while staying committed to social justice and engagement is an uncomfortable but vital balance to be struck. I argue that archaeologists can work as advocates to keep open lines of communication with governments as well as local people; we hold a privileged though awkward position that can be carefully and strategically leveraged for social justice aims. Anthropological archaeology has much to offer if we use it as a tool for greater inclusivity and social justice, within our borders or abroad.

Nowak, Jesse (University of Oklahoma)

[40] Fort Walton Formations: Examining Geospatial Trends in Artifacts and Architecture at the Lake Jackson Site in Florida

Located in Northwest Florida, Lake Jackson is a Fort Walton(Mississippian) period site with seven mounds, borrow pits, wall-trench architecture, and mortuary objects suggesting interregional interaction. This work examines geospatial relations between artifact distributions, known structural remains, and mound alignments in relation to the landscape. New excavation data from previously unexplored areas and digital presentations of associated artifact densities allows for new views of occupation patterns. These data suggest that the creators of Lake Jackson developed coordinated alignments of features and continuity in community patterns.

Nowell, April (Univ of Victoria-Dept of Anth)

[87] Life and Death of the Pleistocene Child: Children’s Burials in Gravettian Europe

The Gravettian (ca. 28,000–21,000 BP), has been referred to as the “Golden Age” of the European Upper Paleolithic. Innovations in technology, increased sedentism and the development of larger regional centers, the oldest known ceramics, some of the earliest evidence for loom-woven textiles, and the emergence of so-called “Venus” figurines all characteristic of this period. The Gravettian is also well known for its often spectacular single, double and triple burials of sub-adults including infants. This paper brings together data from sub-adult burials in Germany, Portugal, Italy, Russia, and the Czech Republic and highlights regional similarities and differences in burial location, body placement and engagement between interred individuals, known pathologies, associated artifacts and evidence of ritual. In the context of the increasing social and technological complexity of this period, inferences are made concerning the lived lives of sub-adults in the late European Pleistocene.

Nowell, Sarah (University of Georgia)

[36] Inferring Continuity and Growth from Household Expansion at the Xwisten Bridge River Site in British Columbia

The processes that drive socioeconomic and demographic growth over the course of generational occupations can be better understood by examining the variation in spatial organization at the household level. This study draws from the ethnographic record, ethnoarchaeological studies, and household archaeology to compare features from Housepit 54 at the Xwisten village, or Bridge River site in the interior of British Columbia. This site has been previously classified as a winter village and contains over 80 s7ístken, or semi-subterranean pithouses. Housepit 54 was excavated between 2012 and 2016 and contains a sequence of 17 intact anthropogenic floors. Past research implies that changes in quantity and types of features associated with storage activities indicate varying strategies. When combined with lithic data related to hunting activities during times of ecological stress, I suggest that over the course of generational occupations, residents of Housepit 54 engaged in community feasting or other activities in order to increase the social standing of the household within the village.

[338] Chair

Ntinou, Maria (Aristotle University of Thessaloniki) and Soultana-Maria Valamoti (Aristotle University of Thessaloniki, Department o)

[298] Trees and Tree Cultivation in the Prehistoric Aegean: A Synthesis of Archaeobotanical Data

Our presentation, based on an overview of archaeobotanical data from the Aegean from the Neolithic to the Late Bronze Age, attempts a synthetic approach to the cultivation of trees. This work is part of the PLANTCULT research project funded by the European Council Research (ERC Consolidator Grant, GA 682529). As archaeobotanical data we consider the macro-remains of fruits/seeds and burnt wood from archaeological sites. In addition, we use palynological information when available. Our goals are: A) to investigate the characteristics of the natural local vegetation around the Neolithic and Bronze Age sites in the study area, B) to investigate the presence/absence and frequency of occurrence of trees that became incorporated in the diet, economy and trade of the prehistoric Aegean, and C) to comment on the cases of the almond tree and the olive. More specifically for the olive tree, based on mapping the presence of the plant in the archaeobotanical record, the beginnings of olive cultivation and the factors that led to it are discussed.

Nuevo Delaunay, Amalia (Centro de Investigación en Ecosistemas de la Patagonia), Juan Belardi (Universidad Nacional de la Patagonia Austral, Unid) and Flavia Carballo Marina (Universidad Nacional de la Patagonia Austral, Unid)

[155] Post-contact Times in Southern Patagonia

The history of the different indigenous hunter-gatherer groups that inhabited Patagonia since the Pleistocene was profoundly affected by the arrival of Europeans during the sixteenth century. This resulted in significant changes in various aspects of their lifeways, both archaeologically and ethnographically recorded. We integrate the available archaeological data of the post-contact period in southern Patagonia, along with ethnographic and historical data; showing the heterogeneous and complex scenario that characterized the region even until the XXI century.

Nuevo Delaunay, Amalia [74] see Méndez, César
It has been suggested that Inca colonization strengthened kin bonds between ayllu members while at the same time requested tribute by means of establishing “ fictive” kin affiliations. Therefore, subjugated populations’ response to Inca imperialism caused the consolidation of local and regional identities. However, what occurred in the Colesuyo? Colesuyo region of southern Peru, inhabited by multi-ethnic small-scale groups—the Cochunas from the upper Moquegua Valley and the Coles and Camanchacas from the coastal area; archaeological evidence suggests that although the Cochunas were incorporated into the empire through institutions and kin bonds, the latter, on the other hand, did not create any kinship alliances with other coastal or marginal groups. It suggests, instead, that altiplano elites formed kin relations with coastal groups that in fact formed part of the Inca sphere of influence. In this presentation we analyze the intricate ways in which local groups were portrayed in the historical records and how discourses were built to give an account of the colonial narratives and the Inca dynamics themselves; and try to build a different one that visibilizes alternative social dynamics evidenced in overlooked archeological data.

Nunally, Patrick [292] see Messenger, Phyllis

Nyers, Alexander (Owner and Program Director), Loren Davis (Oregon State University) and Danial Bean (Oregon State University)

[101] How Good Are My Scans? A Quick Primer on 3D Scan Quality Control and Metadata Recordation

Over the past few years 3D scanning technologies have become a more common tool for archaeologists. These technologies allow for the rapid collection of large datasets that hold the potential to be used not only for display purposes, but also for sophisticated morphological analyses. In order to leverage 3D scan data for anything more than general viewing however, we as archaeologists must become fluent not only in the recording of metadata associated with model creation, but also in evaluating 3D scan data for possible errors. In this poster, we focus on some of the commonly seen problems in 3D scan data, why they occur, and how to avoid them when collecting your own data. We also discuss the recordation of metadata for 3D scans.

Nyers, Alexander [79] see Davis, Loren

Nystrom, Kenneth (State University of New York at New Paltz)

[179] Discussant

Oas, Sarah (Arizona State University)

[287] Feeding and Consuming: Ceramic Vessels and Cibola Foodways

To examine relationships between social transformations and household and communal foodways, this paper draws on detailed vessel form, surface treatment, size, and deposition data from multiple settlements over a period of rapid aggregation, migration, and social change in the Cibola/Zuni region in the 13–14th centuries A.D. Foodways—what we produce, prepare, and consume—foods are an important part of human society and culture, and play a vital role in making and maintaining social relationships. In the US Southwest, ceramic vessels were essential tools in nearly every task associated with the production, preparation, and consumption of food, making them an ideal source of data for understanding changes in food practices at multiple scales. Different uses of similar ceramic forms between contemporaneous settlements suggest persistent diversity in certain cuisine practices, while cross-cutting shifts in the sizes of ceramic bowl and jar forms hint at the widespread social and political importance of food in communal life in these periods.

[237] Discussant

O’Brien, Kevin M. (University of Montana Osher Lifelong Learning Institute) and Clay Jenkinson (Theodore Roosevelt Presidential Library and Museum)

[36] Trailing Lewis & Clark: Inventorying Prehistory at the Point of Contact

During their 1803–05 westward journey, the Lewis and Clark Expedition described the presence of native graves, mounds, abandoned villages, and rock art. Previous archaeological research, centered around the 2005 Bicentennial, focused on the verification of campsites used by the members of the Corps of Discovery. Public interpretation of their Trail has likewise focused on the explorers themselves, neglecting both the Native context in which they traveled as well as the deeper history of their chosen route. This inventory re-examines the antiquities noted by the expedition through the lens of current archaeological research, to examine the rivers and trails utilized by the Expedition as long-distance trade routes, migratory pathways, and sacred spaces for the people who lived along them. Highlighting this deeper Native history and contextualizing the Euro-American observations provides a pathway to decolonizing public interpretations of the Lewis and Clark Trail.

O’Brien, Colleen (University of Cincinnati), Sheldon Smith (University of Texas at Austin) and Nicole DeFrancisco (University of California Riverside)

[157] Bench Please: A Comparative Analysis of Bench Features in Mesoamerica

Archaeologists have argued for numerous functions of the bench features found throughout the Maya world ranging from utilitarian to ritual. During the 2017 field season at the Late Classic site of La Obra, excavations of a centrally-located structure revealed a bench standing approximately 50 centimeters from the structure floor and extending out approximately 150 centimeters from its northern wall. La Obra is a hilltop production site located approximately one kilometer northwest of the central plaza of the site of La Milpa in the Programme for Belize perimeter. No other residential structures have yet been identified among those known and the existence of the well-preserved bench and plaster floors presents a conundrum given the site’s characteristically poor preservation. The goals of this study are to provide comparative data on the form and function of benches throughout the Maya world from which to better interpret the context of the bench found in Structure NW-1 and its role at the site of La Obra given a relative lack of associated diagnostic artifacts.
O’Brien, Matthew (University of Wyoming) and Randy Haas (University of California, Davis)  
[124] Using Ethnoarchaeology to Identify Spatial Patterns of Behavior in Domestic Dogs  
Domestic dogs (Canis familiaris) are a common presence in nomadic cultures, but archaeology still struggles to identify them in the absence of their faunal remains. What we lack is a means to identify behaviors that manifest themselves in the archaeological record that are in clear association with domestic dogs. One avenue is carnivore modified bone. What experimental studies indicate is that we can isolate patterns of feeding associated with particular carnivors, but what has not been demonstrated is whether we see differences between domestic and wild canids. We propose that one solution is to move beyond the marks on the bone and look at where they are found in campsites. Through our ongoing ethnoarchaeological study of the Dukha reindeer herders of north-central Mongolia, we use GPS tracking, photogrammetry, and mapping of canids and modified bone to isolate spatial patterning of domestic dog behavior. The spatial signatures of dog behavior may serve to distinguish occupational bone modification from post-occupational scavenging behaviors by wild canids.

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

O’Brien, Melanie (National NAGPRA Program, NPS)  
[322] Discussant

O’Brien, Michael (Texas A&M–San Antonio)  
[120] Contemporary Views on Clovis Learning and Colonization  
The timing of the earliest colonization of North America is debatable, but what is not at issue is the point of origin of the early colonists: Humans entered the continent from Beringia and then made their way south along or near the Pacific Coast and/or through a corridor than ran between the Cordilleran and Laurentide ice sheets in western North America. At some point they abandoned their arctic-based tool complex for one more adapted to an entirely different environment. The dispersal of that new techno-complex—Clovis—allows us to examine, at a fine scale, how colonization processes played out across a vast continent that at the time had at best a very small resident population. Clovis has figured prominently in American archaeology since the first Clovis points were identified in eastern New Mexico in the 1930s, but the successful marriage of learning models grounded in evolutionary theory and modern analytical methods that began roughly a decade ago has begun to pay significant dividends in terms of what we know about the rapid spread of human groups across the last sizeable landmass to witness human occupation.

Ochoa-Winemiller, Virginia [40] see Winemiller, Terance

O’Connell, Tamsin (University of Cambridge)  
[137] Isotopic Analysis for Palaeodiet and Geolocation  
Isotopic analysis as a method of assessing diet or geographical origin is now ubiquitous in archaeology, to the point where seemingly no project is complete without it. The relative ease of sample preparation and increasing prevalence of isotope mass spec has contributed to its rapid growth. Yet despite its ease of execution, it is not a cut-and-dried technique, and data interpretation can be complex. The greater use by specialists and non-specialists has resulted in studies that range from excellent to dubious, from groundbreaking to mundane, even banal. Such a situation has also arisen in other areas of the archaeological sciences, making them victims of their own success. Only greater understanding of the strengths and limitations of such analyses can improve the overall quality of work in this field.

This paper outlines the principles of carbon, nitrogen, oxygen and strontium isotopic analyses. It illustrates the technique’s scope, identifies some key assumptions as well as pitfalls and problems, and covers some of the common misconceptions in how the method is applied. Whilst I hope not to be prescriptive, I aim to offer some guidance in how such work should be approached, from the perspective of both practitioner and consumer.

O’Connor, Sue [125] see Hawkins, Stuart

Odegaard, Nancy  
[138] Collections Care and Preventive Conservation in the Archaeological Repository  
The scale and diversity of objects held in archaeological repositories is enormous. Collectively, the actions taken to prevent or delay deterioration of these objects and their associated documents and sample collections are referred to as collections care. Preventive conservation identifies the short and long term priorities for collections care. This paper will explore current trends and topics in archaeological collections care including: object stabilization through storage packaging; labelling techniques; recognizing treatment methods used in the past; awareness of pesticide residue contamination; and how to identify and control the agents of deterioration in the repository.

Odegaard, Nancy [218] see Hedquist, Saul

Odess, Daniel (National Park Service)  
[193] Discussant

ODonnabhain, Barra (University College Cork, Ireland) and Jonny Geber (University of Otago)  
[296] Irishness and the Bodies of the Poor in the 19th Century  
Mid-19th century Irish identities divided along lines of class, religion and gender but it could be argued that all were constructed in an atmosphere of the negative characterization of the island and its inhabitants by the British elite. Race and low “moral character” were blamed for the endemic poverty of the island. The Irish poor were portrayed as a “race apart” whose inherent failings were at least partly to blame for the poverty they suffered during the Great Famine of 1845–1852. Recent excavations at Kilkenny workhouse and Spike Island convict prison have produced skeletal assemblages from this critical period. These collections have enabled bioarchaeological analysis of parameters mentioned by the Victorians as indicative of the distinctiveness of the Irish poor: stature, interpersonal violence, and tobacco-use. We argue that the differences between Irish and British populations in stature and risk of violence were exaggerated. Such characterizations, we suggest, were part of a strategy of “othering” that served to legitimize colonial domination. This exertion of power did not go unchallenged, and we argue that aspects of both the material culture and the skeletal evidence may be indicative of forms of passive resistance.
O’Donnell, Alexis [306] see Marquardt, William

Oehler, Casey [167] see Bigelow, Gerald F.

Ogburn, Dennis (University of North Carolina at Charlotte)
[20] Thermal Processes on Tropical Archaeological Shell: An Experimental Study

Tropical archaeological shell middens throughout Australasia provide valuable information about subsistence practices, environmental changes, and human occupation. One of the major anthropic processes that can occur in any midden site is burning or heating of the shell, either from cooking or heat-treating shell for working.

Thermal influences on marine shell are poorly understood across all disciplines, including archaeology. Burning or heating may not always show any visual signs and can only be identified through erroneous results when dating or chemical analyses have been undertaken. Recent studies have begun to explore changes in structural and chemical aspects between varying burning/heating methods and durations, however, these studies only focus on a few shell species from the Mediterranean and fail to factor in overall microstructural differences between shell species. Therefore, to better understand the processes of burning/heating on shell in tropical sites of Australasia an experimental study was undertaken. Six tropical marine shell species with varying microstructures were chosen to undergo three methods of burning/heating. These samples were then examined under Dinolite, SEM as well as under-going XRD analysis. Results show distinct differences between the various microstructures, both visually and chemically.

Oestmo, Simen [89] see Murray, John

Ogaz, Andrea (California State University, Los Angeles), Samantha Lorenz and Toni Gonzalez (University of California, Santa Barbara)
[134] Revisiting the Mortuary Function of Chultunes

Excavations at Mul Ch’en Witz uncovered a series of chultunes just below the escarpment on which the ceremonial core of La Milpa is located. Of the six chultunes identified during the 2017 field season, Chultun 3 has produced the most cultural material. In addition to several complete vessels excavated, human bone fragments were recovered. The remains, found next to the chultun capstone, revive questions surrounding the mortuary function of chultunes. Dennis Puleston, among others, considered the structures to be both secondary and infrequent. Thus, the presence of burials in chultunes was consigned to a marginal position in the attempt to understand chultun function. While the mortuary use of chultunes is indeed secondary, recent work has found it to occur far more frequently than acknowledged. If human burials in chultunes occur regularly, there must be a logical link between the primary and secondary uses. This presentation explores that relationship.

Ogilvie, Astrid [167] see Hicks, Megan

Ogle, Kiona [103] see Harris, Jacob

O’Gorman, Jodie (Michigan State University)
[215] Migration, Ritual, and the Dead

Migration of human populations is an ancient and persistent part of the history of humankind. In the past, as in the present, migration continues to be a solution to human problems that carries with it some degree of increased risk and challenges for group and individual security and identity. Vulnerability resulting from migration choices, and practices to mitigate risks of that vulnerability, vary between historically situated populations and within groups by age, gender, and other elements of identity. In this paper, cross cultural practices of mitigating risk associated with migration are examined with particular attention to the use of ritual practices. Ritual practices are the distinct practices of the Oneota tradition (ca. 1000–1600 CE) involving the dead and the spatial aspect of those practices within the context of migration events are examined.

O’Harra, Nolan (Binghamton University), Tiffany Raymond (Binghamton University), Carl P. Lipo (Binghamton University) and Hannah Elliott (Binghamton University)
[265] Thermal Properties of Prehistoric Ceramic Vessels of the American Southeast

A common class of prehistoric ceramic vessels are those that share attributes related to the processing, cooking, storage and serving of food resources. Depending on the specifics of the use contexts, attributes will vary systematically and depend on the range of activities, the details of the food resources, and the heating technology on which the vessels are used. Thus, we can expect that many technological traits of vessels such as temper, wall thickness, porosity, firing temperature, and manufacturing techniques will be systematically shaped by local performance conditions. One key dimension of variability that is directly associated with the performance of vessels to cook food is thermal conductivity: the rate at which heat is transferred from one side of the vessel wall to the other. The physical properties of ceramic vessels are key to understanding how an object insulates, conducts, or withstands temperature change. In this study, we examine variability in thermal conductivity of prehistoric ceramic samples from the American Southeast and explore the compromises made by prehistoric peoples in terms of vessel performance, energy expenditure, and cooking techniques.

Ohman, Alexis (College of William and Mary) and Jennifer Kahn (College of William and Mary)
[189] Ichthyooarchaeological Analysis of ScMo-350 on Mo’orea, French Polynesia

ScMo-350 is located on Mo’orea Island, northwest of Tahiti in French Polynesia. Our ichthyooarchaeological analyses assess which fish taxa were utilized by the pre-contact Ma’ohi, and how those taxa may have changed over time. Our diachronic approach investigates fishing activities over a c. 1,000 year period, between AD 900–1800. We broadly divided this beach ridge site into four excavation blocks to aid in spatial analyses of the recovered artifacts. Fish specimens were heavily concentrated in Blocks 2 and 3, correlating to areas of the site with high frequencies of fishhook
manufacturing blanks. This demonstrates differential areas of activity across the site. The manufacture of fishing technology (fishhooks, trolling lures, etc.) was kept separate from fish butchery, and ethnographic evidence suggests that these activities were conducted along gendered divisions of labor with men fishing and women processing those fish. However, these binary categorizations are not as starkly defined as often presented. Mo'orea had seasonal shifts in marine resource availability prompting communal fishing, activities that complicate simplistic traditional narratives. Our poster focuses on the spatial and temporal analysis of fish specimens at ScMo-350 and situates these data compared to sites on nearby islands such as Maupiti in the Leeward Society Islands.

Ojeda Rodríguez, Elizabeth (Departamento de Antropología, Georgia State University) and Jeffrey B. Glover (Departamento de Antropología, Georgia State University)

[330] Uses of Different Species of Animals from Vista Alegre: A Zooarchaeological Analysis

Previously, ethnozoological research has focused on knowing the patterns of wildlife exploitation in the different archaeological sites of the Maya area. In this sense, the present work intends to approach the different uses of the different species of animals in activities carried out by the pre-Hispanic Maya people located at the site of Vista Alegre, Quintana Roo, Mexico. The simple has c. 23,000 remains of fauna, coming from three architectural constructions: Structure 9 (Operation 3A), Structure 18 (Operation 3B) and Structure 13 (Operation 1), in addition to 9 off-structure test excavations located along an east/west transect across the island. These remains are analyzed from three perspectives: identification of the taxonomic, osteological and taphonomic profiles. So far, preliminary results have shown that Vista Alegre coastal residents have patterns of faunal exploitation on the northern coast of the Yucatan Peninsula that focus heavily on the use of local species, particularly marine species, similar to the sites of Champoton, Cozumel and Xcambo. This research has also demonstrated that these coastal sites were also able to gain access to inland species.

Okumura, Mercedes (National Museum, Federal University of Rio de Janeiro, Brazil) and Rafael Suárez (Facultad de Humanidades y Ciencias de la Educación)


The early occupation of Southeastern South America (including Uruguay and Southern Brazil) is an issue that has generated interest in American archaeology. Recent research in Uruguay indicates to the presence of two different designs of projectile points manufactured during the early settlement: Tigre (ca. 12,000–11,100 cal BP) and Pay Paso (ca 11,080–10,200 cal BP), recovered in archaeological sites with chronological and stratigraphic control in the Uruguay River. Given the potential use of such points as chronological markers, as well as the importance of a greater integration of archaeological data from Uruguay and Southern Brazil, we aimed to identify the presence of these artifacts in the Brazilian territory using a database including measurements and photos of over 3,000 prehistoric points mainly from Southern and Southeastern Brazil. Pay Paso points were found only in the Southern states (Paraná, Santa Catarina, and Rio Grande do Sul), while Tigre points seem to present a much wider distribution. This work is the first attempt to record the presence of such points in archaeological sites from Southern and Southeastern Brazil, in order to better understand questions related to the mobility of human groups during the Pleistocene-Holocene boundary in Southeastern South America.

Oland, Maxine (University of Massachusetts-Amherst)

[117] Acting, Reacting, and Entangling at the Edge of the Spanish Colony: Maya Life at Progresso Lagoon, Belize in the Context of Colonization

The Maya of northern Belize were located at the edge of the Spanish colony, far from the Spanish capital at Merida, and visited only occasionally by encomenderos and priests. How much of Maya life then was a reaction to Spanish colonization? The archaeological data from Progresso Lagoon, Belize suggest that most contact and colonial period material culture at the Maya community was shaped by ongoing Maya political and economic processes, rather than by Spanish intervention. In addition, Maya leaders used European artifacts in ways consistent with longstanding Maya uses of foreign objects, for Maya political and economic purposes. This paper argues that concepts such as reaction, resistance, and hybridization fail to acknowledge the depth of Maya history and the role of Maya worldviews in shaping the colonial experience at Progresso Lagoon. I suggest that the process of entanglement may better encapsulate the way Maya people continued to act in Maya ways, along their own historical timeline, even within the context of colonization.

Olguín, Laura [34] see Flores-Fernandez, Carla

Oliveira, Diogo, Jeffrey Blomster (The George Washington University, Washington DC) and Michael D. Glascock (University of Missouri, Columbia, Missouri)

[288] Importation, Distribution, and Crafting of Obsidian at Formative Etlatongo

The nature of the utilization of obsidian throughout Mesoamerica has long been a focus of study and topic of debate for many anthropologists. The history of lithic utilization has produced many assumptions and interpretations regarding exchange, use and control of this extremely important material. Obsidian, as an imported resource, might have had other worldly properties that held a special place in the cosmological construction of the world for villagers in the Valley of Oaxaca. The power of higher status community members may have been channeled through these distinct and imported materials, including obsidian. The recent excavations at Etlatongo, in the Mixteca Alta, have provided an opportunity to test these models and utilize new theoretical perspectives. Samples of obsidian excavated at Etlatongo, from both domestic and public space, demonstrate long distant relationships that the village, and specific households, may have developed in order to procure obsidian. We also explore the crafting of the material itself. Etlatongo also gives us the opportunity to systematically test distribution and frequency levels throughout the site, to determine if there was any control or redistribution over certain obsidian sources, which would be indicative of the economic and other-worldly importance of obsidian at Early Formative Etlatongo.

Oliver, Jose

[123] Discussant

OLLENDORF, Amy (ALO Environmental Associates LLC), Chad Donnelly (ALO Environmental Associates LLC), Brady Woodard (Moore Engineering, Inc.) and Kyle Volk (Moore Engineering, Inc.)

[135] Mitigation and Management in the Context of Climate Change at Three Historic Properties on the Great Plains, USA

Under the terms of a Memorandum of Agreement, a professional archaeologist and land-survey crew annually visit 16 historic properties within the Area of Potential Effects of the Maple River Flood Control Dam to document site conditions. All are archaeological sites that could be subjected to seasonal temporary inundation during spring runoff and/or periodic non-winter storm events. Since the “dry dam” first became operational during spring melt in 2007, extreme flood events occurred in 2009 and 2011 resulting in slope failures and erosion at three of the sites. Mitigation measures were implemented at the 32CS0101 (Shea) and 32CS4478 (Sprunk) sites—both Plains Village Tradition hillforts listed on the National Register of Historic Places (NRHP)—and at a third site—32CS4499 (unnamed), a Woodland habitation eligible for NRHP listing. Corrective engineering actions focused on site slopes and their adjacent streambanks to reconstruct, stabilize, and revegetate the exposed and failing embankments. Initially, these mitigation measures were hampered by significant challenges within the context of climate change, namely, major spring floods in 2009 and 2011, and moderate-
INDIVIDUAL ABSTRACTS OF THE SAA 83RD ANNUAL MEETING

Olsen, John [24] see Ciolek-Torello, Richard

Olsen, Sandra

[180] Enhancing Access to Arabian Rock Art Archives

Petroglyphs and inscriptions have been investigated in the Arabian Peninsula at least since 1879, when Lady Anne and Wilfrid Blunt crossed the An Nafud desert and stopped at the now famous site of Jubbah in northern Saudi Arabia. Since that time explorers from England, Belgium, Germany, the US, and the Saudi Department of Antiquities, have recorded images from north to south. Archival materials, including field notes, photographs and letters are available at various institutions, but there is no central repository or website that provides information on access to these sources. Since 2013, the Arabian Rock Art Heritage website (Saudi-Archaeology.org) has presented photographs and documentation based on recent exploration.

Now, an effort is being made to expand it with a complete catalogue of photographs from this project and a resource guide to archives at other institutions. The goal is to greatly expand access to archival records for archaeologists and epigraphers around the world to enhance and advance research.

Olsen, Kyle (University of Pennsylvania)


After the passage of the Iranian Antiquities Law of 1930, the Gorgan Plain in northeastern Iran was seen as one of the most promising regions in the Old World for archaeological research. Despite decades of pioneering field and laboratory research, northeastern Iran still lacks a regionally integrated ceramic chronology for significant stretches of its archaeological history, particularly the 3rd millennium BCE. While individual sequences from important sites such as Tureng Tepe and Shah Tepe are well known, the precise nature of their relationships to each other and to other less-well known neighboring sites have remained unclear. This lacuna in our understanding of the culture history of the region presents a major obstacle to developing models of the social, political and economic history of the Gorgan. This paper, therefore, presents the results of research aimed at constructing a regionally integrated ceramic chronology for this region, in light of the potential anthropological significance of this dataset with respect to the emergence of regional community networks and the formation of archaic complex polities. In addition, this paper reflects on important issues related to the rehabilitation of legacy data and the methods by which it may be restructured for effective quantitative analysis.

O’Mansky, Matt (Youngstown State University)

[274] Local Legacy, Local Legend: John White, Youngstown State University, and Fifty Years of Public Archaeology

Dr. John White served as a member of the faculty at Youngstown State University from 1971 to 2005. Part of his legacy is nearly four decades of local, regional, and public archaeology. He shared his passion for the discipline with thousands of students and engaged hundreds of students and volunteers in fieldwork, both regionally and internationally. Upon John’s retirement in 2005 I was hired to take his position. In this paper, I summarize my own work and collaborations with colleagues as we have sought to extend John’s legacy of education and public outreach. Toward this end, we have worked with local parks and organizations, including the Boys and Girls Club of Youngstown and Boardman Park, on a variety of archaeology programs. We also continue to engage in both local and international projects with our students, traveling to work in Guatemala, the Bahamas, and elsewhere. While John White passed much too soon in 2009, his legacy—and legend—lives on.

Omar, Lubna (Binghamton University)

[56] Running with the Mules: Integrating Zooarchaeological, Archaeological and Textual Evidence to Reconstruct the Exploitation of Equids in Southwest Asia

The equid had a vital role in animal economy in Southwest Asia, whether as a wild animal providing primary/secondary products to prehistoric communities, or as a domestic source of energy which supported war affairs and trade during historic periods. Reconstructing the dynamics of humans and the four-equid species, which were present in the region, is a complicated endeavor due to the paucity of skeletal evidence in faunal assemblages; the difficulties in distinguishing morphological traits to separate between the closely related species and hybrids; and the perplexing morphometric approaches to identifying equid skeletal elements. Therefore, integrating archaeological and textual evidence from the historic periods in the Near East provides an exceptional opportunity to assess the distribution of equids, and their role on economic and cultural levels. This study aims to demonstrate the available evidence of equid exploitation strategies during the Bronze Age, using zooarchaeological analyses, while enhancing our knowledge about how domestic and wild equid species were incorporated in early urban entities, through archaeological and textual representations of these animals. Compiling different lines of evidence is expected to illustrate how complex societies maintained their provisioning networks and maximized the intake of animal products within early urban cities in southwest Asia.

Chair

Omori, Takayuki [64] see Shoji, Kazuho

Omura, Sachihiro [71] see Maclntosh, Sarah

O’Neale, Dion [20] see Ladefoged, Thern

O’Neil, Megan E. (Associate Curator, Art of the Ancient Americas, LACMA)

[206] Collective Biographies: Ancient Maya Objects in Collections, Past and Present

This paper explores the collecting, repositioning, and separating of ancient Maya objects, both in the ancient past and the twentieth century. Archaeological context provides evidence of ancient Maya aggregation of disparate objects in tombs, caches, or sculptural tableaux as well as evidence of repositioning or separating things. These changes are fundamental aspects of objects’ life histories. Yet in the twentieth century, ancient monuments and object sets also have been divided—and new sets created—whether by national museums or research institutions seeking to trade duplicates or by players in the art market hoping to increase return by splitting paired or assembled objects. Such divisions are problematic, for new assemblages often frame modern understandings of them, and evidence for original assemblage may be difficult or impossible to reconstruct. This paper thus explores the importance of considering objects not just on their own but also in relation to other pieces to which they were connected. Thinking about biographies of objects—or collective biographies—in the past and present is a way to theorize both objects’ individual trajectories and the connections and disconnections resulting from forming or splitting pairs, sets, or other groupings.
Onken, Jill (University of Arizona) [182]  Chacoan Outlier Depopulation and 12th Century Arroyo Cutting near Zuni Salt Lake, New Mexico

Depopulation of Chacoan outlier settlements in the Cibola culture area near Zuni Salt Lake ~AD 1130 has been attributed to the onset of a persistent 50-year drought. Prior alluvial stratigraphy studies concluded that arroyo formation near these settlements occurred two centuries after this exodus and therefore was not a contributing factor. The present study used a larger sample of radiocarbon dates, including short-lived, charred plant material from alluvial contexts and tree-rings from several deeply buried juniper trees preserved at the base of paleoarroyo fills, to refine the dating of late prehistoric channel entrenchment in the Zuni Salt Lake area. Bayesian age modeling that included juniper germination dates determined by radiocarbon wiggle matching facilitated construction of a high-resolution alluvial chronology. The revised chronology includes an arroyo-cutting episode constrained to the 60-year interval between AD 1106 and 1166. This finding suggests that terminal Pueblo II depopulation of the Zuni Salt Lake area ~AD1130 probably did in fact coincide with extensive arroyo formation. This landscape degradation greatly reduced the area’s agricultural potential and arguably played a significant role in its mid-12th century depopulation.

Opishinski, Ana (UMASS Boston) [104]  The Zooarchaeology of LA 20,000

Identity is a complex entity that is constantly being remade and altered, so to understand the development of the New Mexican identity in the 17th century, one must understand the various parts that make up an identity. This poster examines one of these parts: the foodways of New Mexico. Specifically, this project is examining the faunal deposits from LA 20,000, the largest Spanish estancia in early colonial New Mexico (1598–1680). The meat-component of the diet obtained from a 17th century Spanish colonial New Mexico has never been analyzed in depth, so understanding how colonists and natives conceptualized, prepared, and consumed livestock and local foods can reveal much about identities and status, and how these were affected by food availability, traditional food practices, and interactions between different social and ethnic groups. Since 17th century New Mexican foodways have been understudied, this research represents an in-depth look at how Spanish colonists and local Native Americans cultures first came together through the medium of food and how these interactions helped to develop the foundation for the New Mexican identity. Understanding the development of foodways in early colonial New Mexico will open up possibilities to explore diachronic changes in food and identity.

Ordoñez, Maria, Tamara Landivar (Museo Pumapungo) and Lourdes Torres (USFQ) [324]  Putting Heads Together: A Multidisciplinary Approach to the Museum Archaeology of the National Tsantsa Collection at the Pumapungo Museum, Cuenca

There are many collections of Tsantsas around the world. These shrunken heads were created by the Shuar and Achuar peoples of the Ecuadorian Museum, Cuenca. There are many collections of Tsantsas around the world. These shrunken heads were created by the Shuar and Achuar peoples of the Ecuadorian and Peruvian amazon until the mid-20th century. Though most of these museum collections have a known provenience, the individual histories and the authenticity of some of the heads has been contested. Similar questions have risen for Tsantsas held at the Pumapungo Ethnographic museum in the city of Cuenca, Ecuador. Using the approach of museum archaeologies, a multidisciplinary team including archaeologists, anthropologist and biologists has worked together with members of the Ecuadorian Shuar community to address these questions. During this talk some of the initial finds of the project will be presented, including medical digital images, and the viability of ancient DNA testing on this remains.

Ore Menendez, Gabriela (Vanderbilt University) and Steven A. Wernke (Vanderbilt University) [65]  Using Multispectral Drone Imagery for Identification of Prehispanic Agricultural Features

In recent years, the use of multispectral satellite imagery has become an increasingly viable option for archaeological site detection and classification. Nevertheless, the high costs and relatively low resolution of multispectral data present challenges for local-scale archaeological feature detection. In this presentation, we will examine the advantages and limitations of using UAV aerial multispectral imagery as a means of local-scale feature detection. We compare results of remote sensing classification techniques on multispectral satellite imagery (at ~ 2m resolution) and results from drone-based multispectral imagery (at sub-decimeter resolution) of the same area. We map and classify the agricultural landscape (prehispanic and early colonial agricultural terraces, canals, and paths) in a 5 square kilometer area in the region of Huarochirí of the Peruvian highlands. We evaluate the potential to use the UAV-derived multispectral imagery as a “near ground truth” source for informing the execution and interpretation of satellite imagery-based classification schema and feature detection. We also explore the utility of the combined use of UAV- and satellite-based multispectral imagery for improving the efficacy of pedestrian survey, especially in areas of high topographic relief as in the highland Andes.

M. [235]  Moderator

Ong, Hector [121] see Petrie, Cameron

Onhuela, Johanset [57] see Hernandez-de-Lara, Odlayan

Oriuje, Emuobosa [213]  Plant Management, Resilience and Environmental Changes in the Wetlands of Nigeria

Palaeo-environmental studies of coastal areas (wetlands) of southern Nigeria reveal three main periods of climatic changes from the Mid Holocene-Present namely (i) very wet (ca. 6,000-5,000 BP), (ii) dry (ca. 4,500–2,500 BP) and (iii) humid periods (ca. 2,500-Present). This paper explores the dynamic ways in which the culture of plant management and plant food resources in these marginal lands has been expressed within the context of environmental change. The similarities in management techniques, names and ritual practices associated with some indigenous plants (Elaeis guineensis (oil palm), Cola acuminata (kolanuts), Dioscorea spp. (yams) and Raphia hookeri (wine palm), among several peoples in the coastal areas of Nigeria reflect significance of prehistoric social contact, networks and trade relations. The culture of exploiting "famine" and wild crops during drier periods is reminiscent of human adaptation in periods of scarcity. Despite the effects of recent climate change, as well as the rise in exotic plants, the survival of certain indigenous plants as well as their undiminished value in socio-religious practices reflects the resilience of such cultures, a phenomenon characteristic of the human species.

O'Rourke, Makaela (Utah State University, University of Oregon) and Scott Thomas (Burns Bureau of Land Management, District Archaeol) [265]  Pottery at Skull Creek Dunes, OR and Its Implications for Pottery Tradition in Southeastern Oregon

Prehistoric pottery is rare in Oregon, and the presence of pottery at the Skull Creek Dunes site in Catlow Valley of Southern Oregon is potentially important. This paper builds on the previous excavation and research by Scott Thomas of the Burns BLM and describes the pottery and work done on it since. These sherds represent one of the oldest pottery traditions in Oregon, and were likely made on site. Initial dating places the site around 1250 CE. In addition to the sherds, small possible gaming pieces and fired clay cones were also discovered at the site, as well as lithic and faunal components. A discussion of possible cultural origins of this pottery is included.


This paper critically reassesses the use of subterranean features among prehistoric Native Americans of North America. A survey of the archaeological and ethnographic literature suggests that pre-historic Native Americans used subterranean features in a ritual context, although the ritual component is
rarely acknowledged directly. The significance of the features becomes apparent when the context, mainly construction and artifact deposition, is considered. Many of these subterranean features have been created naturally through geologic processes. However, it is significant that in areas devoid of natural subterranean features, pre-historic Native Americans constructed subterranean features to substitute for their natural counterparts. The archaeological and ethnographic literature document that ritualistic underground features are distributed throughout North America. Evidence includes ritually deposited cordage and sandals in the south and western portion of the United States, origin myths associated with Wind Cave in the Black Hills of South Dakota, and in New England where artificial subterranean features were created. When these data are compared to Mesoamerica, it becomes clear that subterranean features are an essential component of pre-historic Native American ritual practices. I propose that an Amerindian Subterranean Complex exists as part of a ritual circuit related to group origin myths.

Orrence, Karen [202] see Creveling, Marian

Orsini, Stephanie [155] see Alsgaard, Asia

Ort, Jennifer (SEARCH, Inc.)
[294] Preserving the Ongoing Legacy of Northeast Pre-contact Archaeology
The study of Northeast pre-contact archaeology is faced with many challenges including, but not limited to preservation and impacts on the archaeological record from centuries of development. Especially concerning is the decline in academic-based research and positions. University departments once populated with individuals dedicated to Northeastern pre-contact history have traditionally been the primary means for how practitioners of the region’s archaeology reproduce themselves, now having little to offer would be students seeking graduate degrees. Given this reality, some feel the study of the pre-contact period in the Northeast is waning. Nevertheless, we argue that the ongoing legacy of Northeastern pre-contact archaeology is enduring even if no longer predominantly focused within academia. This is demonstrated by the continuing efforts by archaeologists from diverse backgrounds such as state agencies, cultural resource management, and other institutions as well as academics.

[294] Chair

Ortiz, Soledad [173] see Smith, J. Gregory

Ortiz, Agustin [248] see Blancas, Jorge

Ortiz Brito, Alberto (University of Kentucky)
San Martín Pajapan is one of the most important and prominent volcanos that constitute Los Tuxtlas mountain system of the Gulf Coast of México. From the Prehispanic period to the present time the San Martín Pajapan volcano has been considered a natural place of the landscape with cultural significance which is determined by the presence of archaeological remains on its summit. The most remarkable archaeological element of this volcano is a monumental Olmec sculpture, which iconographic attributes suggest that it could have been carved during the Preclassic period. However, most of the ceramic materials found in association with the sculpture were dated by Alfonso Medellín Zenil to the Late Classic period. The temporal difference between the Olmec sculpture and the ceramic materials points out a problematic of the archaeological context. In this paper I’ll present a revision of the archaeological remains of the San Martín Pajapan volcano to solve this problem. The results of this analysis indicate that, contrary to Medellín Zenil’s idea, the ceramic materials associated with the sculpture correspond to the Epi-Olmec and Protoclassic period of the Gulf Coast region.

Ortiz Hernández, Jorge [293] see Carballo, David

Ortiz Ruiz, Soledad [177] see Seligson, Ken

Ortman, Scott G. (CU-Boulder), Laura Scheiber (University of Indiana-Bloomington) and Zachary Cooper (University of Colorado Boulder)
[124] Scaling Analysis of Prehistoric Wyoming Camp Sites—Implications for Hunter-Gatherer Social Dynamics
Recent studies suggest many properties of human settlements vary in predictable ways with population size. These studies have shown, for example, that more populous settlements are systematically denser on average than less populous settlements in a wide range of societies. In this presentation we examine this densification effect in mobile hunting and gathering societies by analyzing a database of information for prehistoric stone circle (tipi ring) sites in the plains and intermontane basins of Wyoming, USA. We examine the relationship between total camp area and the number of bison hide tips (reflected by surface stone rings) present at these archaeological sites. We attempt to control for a variety of factors that might condition stone circle visibility and density, including palimpsest occupations, in establishing whether these camps became denser or less dense as the number of co-campers increased. We also compare our results to those observed in a global ethnographic dataset. The latter suggest mobile hunter-gatherer societies do not take advantage of the opportunities for energized crowding that characterize more sedentary societies. Our study represents an initial attempt to determine whether this de-densification effect is also apparent in the archaeological record of mobile hunter-gatherers.

Osborn, Jo (University of Michigan), Camille Weinberg (University of Texas at Austin) and Kelita Pérez Cubas (Pontificia Universidad Católica del Perú)
[46] Revisiting Jahuay: An Early Horizon Maritime Site at the Topará Quebrada on the South Coast of Peru
The littoral site of Jahuay is located at the mouth of the Topará Quebrada, between the Cañete and Chinchá Valleys on the South Coast of Peru. It is a key site for studying the Topará cultural tradition, which emerged on the South Coast during the late Early Horizon (EH)(250—1 BCE), and was the site where the Topará ceramic seriation was first documented by Edward Lanning in the mid-20th century. In 2017, we began our first season of excavations at Jahuay, with the goal of investigating EH coastal subsistence strategies as well as the sociopolitical role of the site within the larger Topará sphere. We recovered an array of materials, including ceramics, botanical remains, marine shell, faunal bone, and textile. Our initial results suggest the people occupying Jahuay during the EH primarily exploited maritime resources, but also had access to a wide array agricultural goods including squash, peanuts, beans, and cotton. Here we discuss these new results, including a reexamination of Lanning’s Topará ceramic seriation, and consider their implications for future research.

Osborn, Jo [240] see Weinberg, Camille

Oscarson, Cody [182] see Miller, D. Shane

O’Shea, Colleen [66] see Bongers, Jacob

O’Shea, John (University of Michigan)
[244] Discussant
Osores, Carlos and Bradley Parker (University of Utah) [165]
Comparing the Household Activities from Cerro la Guitarra (Zaña Valley, Peru)
New insights from household archaeology on the north coast of Peru provide lines of evidence about the complex patterns of daily life. Also, few studies about the domestic life were carried out at the Zaña Valley. The first field season at Cerro la Guitarra, a fortified hill site with occupations from the Late Intermediate Period (1100–1400 AD) in the Zaña Valley, was very successful because it allows us to explore residential life using ceramics, architecture, and faunal analysis with the goal of explaining similarities and differences between spaces, constructive patterns, exchange, diet, and, more importantly, social differentiation. Since the comparisons inside the site, we hope to show how Cerro la Guitarra was a highly interactive community where intrinsic differences are important to understand the site as a whole.

Osores Mendives, Carlos [64] see Chen, Peiyu
Osorio, Ma Carmen [293] see Soler-Arenchalde, Ana

Ossa, Alanna (SUNY Oswego) [285]
The Organization of Obsidian Exchange at Postclassic Sauce and Its Hinterland in Veracruz, Mexico
I analyze residential inventories from the center of Sauce and its hinterland in combination with regional settlement data from Barbara Stark’s Proyecto Arqueológico La Mixtequilla (PALM I, II) to describe the structure of exchange, production, and consumption of obsidian chipped stone during the Middle Postclassic period (AD 1200–1350) in south-central Veracruz, Mexico. Previous research on obsidian production found a spatial association with Sauce, which could support political administration of exchange, or alternatively, identify market exchange nearby. Reliance on spatially based models alone for identifying exchange mechanisms are flawed based on equifinality, in which different forms of exchange result in the same spatial pattern. Local chipped stone artifacts have further complications for interpretation: singular geological source, universal access, and potential specialized activities. No single model will identify all competing influences on residential inventories. To handle this complexity, I use the articulation of production combined with the spatial distribution and contextual information to distinguish between redistribution and market exchange. Results indicate that market exchange was the main mechanism. The largest concentrations of primary production indicators were found near Sauce, along with the highest quantities of blade parts, which suggests that political elites encouraged market exchange even if they did not direct it.

Ostahowski, Brian [42]
Coastal Land Loss and the Future of Louisiana’s Archaeological Record
This presentation examines the effects of land loss to the coastal archaeological record. Impacts observable at different scales (coast-wide, regional, and the individual archaeological site) demonstrate that our ability to understand Louisiana’s past may be permanently altered. New directions for future research and community engagement are proposed.

Ostapkowicz, Joanna (University of Oxford) [108]
Mundus vult decipi: Caribbean Indigenous Art Past, Present, Future
The 1990s, with quincentenary ‘celebrations’ and two highly influential Taino art exhibits in Paris and New York (the epicentres of the pre-Columbian art market), heralded a seismic increase of indigenous Caribbean art forgeries. But these weren’t the first indications of an emerging market: Caribbean forgeries had been circulating since at least the 1950s. The artistic heritage of the pre-Columbian Caribbean still remains largely understudied, with far smaller-scale production than seen in neighbouring regions like Mexico and Peru (with their own long-established, highly prolific forgers)—two of a number of factors that have led not only to site looting but entrepreneurial ‘reinterpretations’ of ancient artefacts, both aimed at filling voids in private collections. These neo-artforms eventually enter museum collections, and are published in glossy catalogues as the genuine article, perpetuating the continuation of a particular forger’s oeuvre, cementing it as an established, ancient ‘style’, and so skewing understanding of past artistic expressions and meanings. The forger’s craft has become increasingly sophisticated, deceptive and profitable. This paper explores the issues of Caribbean forgeries in both private and museum collections, contrasting the covert enterprise with art openly produced by local artists taking the islands’ ancient artistic heritage in new directions.

Ostapkowicz, Joanna [139] see Knaf, Alice

Ostrich, Stephanie (CITiZAN / Museum of London Archaeology) [34]
CITiZAN's Digital Toolkit: Citizen Scientists Recording England's At-Risk Coastal Archaeology
England’s coastal and intertidal archaeology is increasingly at risk from winds, waves, rising sea levels and winter storms exacerbated by climate change and can be revealed suddenly and disappear just as suddenly. However there is no statutorily informed intervention for this heritage outside of the national planning framework for this at-risk archaeology and so no infrastructure in place to systematically record these freshly exposed sites before the next storm potentially washes them away. CITiZAN (the Coastal and Intertidal Zone Archaeological Network) is a community archaeology and citizen science project set up in direct response to these threats which raises awareness of at-risk archaeology across England. CITiZAN teaches local volunteers to identify, survey and monitor the long-term fate of their local coastal sites. This paper will discuss the rapid digital recording tools on which CITiZAN rely to not only engage with but also to mobilise wider audiences, including 3D photogrammetry, an open-access interactive website and free smartphone app to record fragile coastal and intertidal heritage and monitor changes brought about by erosion and storm damage. This enables the public to ‘take responsibility’ for the archaeology in their local areas and explore the effects of global climate change at a local level.

O’Sullivan, Aidan [23]
Experimental Archaeology and Investigating Houses in the Past
Experimental archaeology can be defined as the reconstruction of past buildings, technologies, objects and environmental contexts, their testing and use, so as to gain a better understanding of the role of material culture in people’s lives in the past. We explore ideas of craft, materiality, knowledge, skills and the use of different materials to practically test how people made, used and discarded things in the past. This paper will investigate how early medieval houses in Europe can be understood in terms of construction, use and abandonment, using experimental archaeology, historical sources and archaeological sciences.

Otaola, Clara [249] see Franchetti, Fernando
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The environment exerts a strong influence on the evolutionary ecology of hunter-gatherer foraging. Studies of prehistoric hunter-gatherers have often made hypotheses regarding the effect of climate on foraging strategies, but have rarely tested those hypotheses. The absence of explicit hypothesis testing has been partly due to a dearth of operationalized paleoenvironmental variables. Although paleoenvironmental reconstructions have been abundant, particularly those based on pollen, they have mostly been qualitative descriptions. This study demonstrates the usefulness of modern paleoenvironmental reconstruction techniques to test evolutionary hypotheses about the magnitude and direction of climate on North American Paleoindian hunter-gatherers’ foraging behavior. I used pollen assemblages from across the North American Great Plains and neighboring regions to reconstruct multiple paleoenvironmental variables—mean annual temperature, annual temperature seasonality, annual precipitation, and annual precipitation seasonality. Using spatio-temporal statistics, this study estimated paleoenvironmental variables during the Paleoindian period and in areas across the Great Plains. The results have important implications for the understanding of Paleoindian foraging and subsistence within the context of paleoclimatic and nutritional resource reconstruction. Specifically, this study reconciles current hypotheses regarding the influence of climate and ecological change on Paleoindian dietary strategies and discusses its potential as a mechanism driving micro-evolutionary consequences.

Otárola-Castillo, Erik R. [103] see Rapes, John

Otárola-Castillo, Erik R. [103] see Shott, Michael

Otto, Raquel (Universidad Nacional Autónoma de Honduras) and Luke Stroth (University of California San Diego) [299] La Obsidiana del Sitio Guadalupe, Colón, Honduras

El movimiento de obsidiana para el período Posclásico (1500-1530 d.C) en el noreste de Honduras, ha sido prácticamente desconocido para nosotros, por las pocas publicaciones científicas y naturaleza de los suelos en esta área del país, el hallazgo de este material puede considerarse poco probable, sin embargo existe un cambio marcado de la presencia de obsidiana para el periodo Posclásico. Mediante el estudio de las secuencias de producción lítica, tomando en consideración atributos tales como mediciones de filo, análisis de plataformas, y forma; podemos comenzar a comprender como este material fue utilizado en el sitio; y como se estaba desarrollando la industria de micro navajas con fuentes de procedencia del sur de Honduras.

Overholtzer, Lisa (McGill University) [181] Previous Material Entanglements and the Rise of the Aztec Empire

Precisely dated household middens at the Aztec site of Xaltocan suggest that Aztec imperial matter—decorated serving vessels imported from Tenochtitlan and small spindle whorls used to produce tribute cloth, for example—often predates imperial formation and expansion by nearly a century. In this paper, I consider the analytical purchase we might get in explaining this puzzling finding by considering literature from the material turn; Khatchadourian, Bauer, Kosiba, and others have recently offered useful frameworks for the politics of nonhuman things and beings, for example. I attempt to move away from traditional understandings of the archaeological visibility of the Aztec empire, which present imperial things as passive and inert, and as consequences of imperialism, but not as consequential for it. Instead, I reconstruct the flows of matter that later came to be known as Aztec imperial, or rather, the Aztec empire’s previous material entanglements. Acknowledging that objects, in their flows and in their presence, had effects that were not confined to the intentions of their makers and users, or to the moment of their production and use, I contemplate how these flows might have contributed to the later rise and rapid expansion of the Mexica.

Overholtzer, Lisa [248] see Blancas, Jorge

Owen, Ross (Indiana University of Pennsylvania) [334] PennDOT Highway Archaeological Survey Team: Providing Immersive CRM Work Experience to Students

Despite there being more applicants with graduate degrees than there are jobs, the CRM industry suffers from the number of people holding graduate degrees but lacking experience conducting archaeological surveys for Section 106 compliance. Additionally, conducting archaeological surveys is cost-prohibitive and can be a burden on state agencies on projects where federal funds are not involved. These two issues in the field of compliance GIS mapping, curation and documentation following the guidelines of the Pennsylvania Historical and Museum Commission. Much of this experience is outside the purview of most field technician positions. This paper will explore the successes and failures of the PHAST program from both a professional and financial point of view. How have the students benefitted from their experience within the program, and how has the state benefited from the services provided?

Owlett, Tricia (Stanford University), Yu Itahashi (The University of Tokyo), Minoru Yoneda (The University of Tokyo), Leo Aoi Hosoya (Ochanomizu University) and Sun Zhoyong (Shaanxi Provincial Institute of Archaeology) [24] Late Neolithic and Early Bronze Age Agro-Pastoral Diets at Shimao, Northern Shaanxi Province, China: Stable Carbon and Nitrogen Isotope Analysis of Human and Faunal Remains

The late Neolithic to early Bronze Age period (ca. 2800 BC–1900 BC) in the Ordos Region, Northern China was a transitional period, that included the adoption of agro-pastoralism, as well as increasing sociopolitical complexity. Subsistence economies were shaped by a variety of strategies that included a mixed agro- pastoral system focused on millet cultivation and herding of caprines and cattle, with limited contributions from hunting and gathering of wild plants. Here in this study we report the carbon (δ13C), nitrogen (δ15N), and nitrogen amino acid isotope analyses results for the dietary reconstruction of agro-pastoralists at the Shimao site in Shaanxi Province, China. Bone collagen carbon and nitrogen isotopic results of humans and animals are used as proxies of diet and local environment, and the local food web, that may also indicate differences in herding and management practices between different domesticated species. Results demonstrate that the majority of humans and domestic pigs were fed with substantial amounts of millets or their byproducts. The domestic herdbovres, sheep and cattle, showed different dietary characteristics in that the former likely were foddered with C3 plants or grazed upon the local environment, while the latter species were fed with larger amounts of C4 products.

Oyuela-Caycedo, Augusto and Florencio Delgado Espinoza (Universidad San Francisco de Quito) [177] From Cooking to Smelting, the Social Technology of Pyrotechnology of Earth Ovens

The effects of earth ovens on societies is a topic that has not been consider much, mainly because the limitation of archaeological findings. Because our research has been mainly concentrated in floodplains environments, we have been successful in recovering a large sample that allows to propose explanations on the variability of them, and the relationship that features have in understanding some basic aspects of the social characteristic of the
societies that created them. As a study case, we compare earth ovens from excavations conducted in lowlands Ecuador, and Colombia, that range from preceramic context, early ceramic societies like San Jacinto and Valdivia, to latter furnaces developed by the Jama Coaque and Manteroño of Coastal Ecuador, and Colombia’s lower Magdalena societies. Within this deep time perspective, we are proposing some basic model of the environmental and social relation of ancient Pyrotechnology.

Özbasaran, Mithriban [126] see Schumacher, Mara

Ozbun, Terry (AINW) [140] Estimating Orthoquartzite Quarry Production on the Llano Estacado

Morrison Formation red orthoquartzite was procured, reduced, and exported as large percussion flake blanks from a late pre-contact quarry and workshop (LA21699) near Tucumcari, New Mexico. Experimental flintkipping replication of the orthoquartzite reduction technology represented at the aboriginal quarry/workshop site produced data on the average frequency of various technologically diagnostic flake types per reduction event. Comparing these experimental flake type frequencies with archaeological frequencies of the same diagnostic flake types allowed identification of large percussion flake blanks as the modal goal of workshop reduction and estimation of the number of percussion flake blanks produced at the site and the number exported. Approximately 1,700 of the 3,000 red orthoquartzite large percussion flake blanks produced were exported from LA21699 for further reduction and use elsewhere on the Llano Estacado. This replication approach to technological analysis of a quarry assemblage illustrates a method for identifying quarry production strategies and estimating the quantities of stone implements produced and exported.

Ozbun, Terry [140] see Fuld, Kriste

Pacheco, Veronica [264] see Zborover, Danny

Pacheco Arias, Leobardo (Proyecto Arqueológico Conjunto Monumental de Atzompa) [158] Modelo de co-participación para la infraestructura de investigación en Atzompa

El Campamento de investigación del Conjunto Monumental de Atzompa, en Oaxaca, México, fue desarrollado con la participación de fondos federales y sectores privados como la Fundación Alfredo Harp Helú Oaxaca. Este espacio, que busca rescatar la arquitectura tradicional, ha permitido la práctica de estudios especializados del patrimonio arqueológico, el resguardo de objetos y el intercambio de conocimientos con los restos de Santa María Atzompa que han colaborado en el taller de restauración, montado en el mismo Campamento. Aquí se presentan algunos ejemplos de co-participación y alcances de investigación logrados hasta la fecha en la infraestructura que utiliza el Proyecto Arqueológico Conjunto Monumental de Atzompa.

Pacheco Silva, Monica (Freie Universität Berlin, Excellence Cluster Topoi) [36] Perception and Interpretation of the Landscape in the Lienzo of Coixtlahuaca/Seler II

The Lienzo of Coixtlahuaca II, also named Seler II, was brought by the German mesoamericanist Eduard Seler to Berlin, Germany in 1897. The 375 x 425 cm document, made in the first half of the XVI century in the city of Coixtlahuaca located in the modern state of Oaxaca, Mexico, is made of eight cotton cloths sewn together to form an enormous Lienzo. The history of Coixtlahuaca’s cacicazgo, its territory and lineages, is depicted alongside their mythical origins and migrations. The document portrays, in a prehispanic pictographic language, the history intertwined with landscape, showing the perception and close relation of it to the city-state settlement and the cosmological interaction between them. This presentation proposes an interpretation of the modern geographical landscape and its ties and perception to the mythical landscape and history portrayed in the Lienzo. By interpreting the modern geography, mythical places of origin and foundation like the Chicomoztoc and the Coatepec, could be found within it thus, the landscape would fulfill the cosmological aspects needed for a settlement. The cosmology, history and landscape should be considered an integral feature of the settlement itself.

Pacheco-Forés, Sofia (Arizona State University) and Maria García Velasco (Universidad Nacional Autónoma de México) [282] Mobility, Ethnicity, and Ritual Violence in the Epiclassic Basin of Mexico

Within Mesoamerica, ritual violence and human sacrifice have long been topics of anthropological inquiry. In this study, we investigate how the perception of social difference contributed to the selection of victims of ritual violence at an Epiclassic (600–900 CE) shrine site in the Basin of Mexico. The Epiclassic period was marked by dramatic political upheaval and social reorganization. In such a volatile geopolitical climate, aspects of individuals’ social identities, such as their residential histories or ethnicity, could have acted as powerful indicators of social difference that culminated in violence. We present preliminary reconstructions of the residential histories of a sample of these individuals using stable oxygen isotope analysis of bioapatite carbonate (n=73). Additionally, we examine the ethnicity of sacrificed individuals through geometric morphometric analysis of the variation in cranial modification form and extent (n=61). These multiple lines of evidence contribute to an ongoing project examining how diverse categorical identities predisposed individuals to suffer ritual violence during a period of socio-political upheaval and reorganization.

Pacifico, David (Cardinal Stritch University) and Melissa Vogel (Clemson University) [82] Neighborhoods and Urban Political Organization at El Purgatorio, Peru ca. AD 700–1400

El Purgatorio was the capital city of the Casma State, occupied from AD 700 to 1400. Neighborhoods at El Purgatorio were organized around social status, which was in turn related to a number of factors including occupation, access to and control over economic and ritual resources, and possibly length of tenure at the site. Neighborhoods were distinguished from one another by their architectural and topographical qualities, and exhibit both planned and organic elements. Neighborhoods also displayed some internal diversity. The interrelation of these neighborhoods’ functions and the interdependence of their residents were key elements in the political economy of the capital city, and potentially in the Casma State. Research at El Purgatorio suggests that we need to be aware of the potential for multiple sociopolitical configurations among and between neighborhoods within the same city. This research can help us better understand the complexity and dynamism of settlements in the Prehispanic Andes. Moreover, the findings from El Purgatorio direct us to contemplate the relationship between urban core and hinterland neighborhoods in order to fully understand Prehispanic sociopolitical integration and dynamics.

Padgett, Antoinette [214] see Ryan, Christopher

Pagan-Jimenez, Jaime R. (Faculty of Archaeology, Universiteit Leiden) [323] Kitchen Affairs: First Insights into the Intricacies of Food Plant Preparation at El Flaco, Northern Dominican Republic (XII–XV Centuries)

Ongoing investigations by the Nexus 1492 Synergy Project (Leiden University) at El Flaco archaeological site, has revealed the existence of an interesting Amerindian hamlet chronologically situated between XII and XV centuries. People who lived and died there, being carriers of the Meillacoid and Chicoid traditions, kept their kitchen areas extremely close to their houses, leaving noticeable remnants of their processing tools (shell scrapers, rudimentary grinding stones), cooking pots and griddles (made from stone and clay), serving implements (plates, bowls and ceramic bottles) and a key “crushing” tool used during food intake: human teeth. Residue samples from these plant-handling tools, recovered in one of the identified kitchens, has been subjected to ancient starch grain analysis aiming at knowing which were the main starchy plants prepared at these kitchens. Phytoolith analysis
was also done in soil samples from these areas to retrieve potentially important microbotanical remains from plants that are typically unnoticeable to other research techniques. This preliminary report present results from both analyses by discussing first some methodological issues on starch and phytolith studies in such contexts and offering later the first interpretations of the phytocultural dynamics attached to these spaces of identity expression.

[150] Discussant

Pageau, Hanna Marie (University at Albany)

[61] Moderator
[61] Discussant

Pahl, Barbara (National Trust for Historic Preservation)

[96] Discussant

Paige, Jonathan (Arizona State University, School of Human Evolution and Social Change) and Charles Perreault (Institute of Human Evolution, School of Human Evol)


Acheulean large cutting tools were made across Africa and Eurasia for ~1.5 million years, and show surprisingly little variation for a technology so spatiotemporally vast. One explanation for this puzzling degree of conservatism is that Acheulean tools were not culturally transmitted but rather genetically determined. If this hypothesis is true, then Acheulean tools are more akin to animal technologies such as bird nests than to modern human tools. Here we examine the extent to which the variation in Acheulean tools compares to the variation among bird nests of North American passerines. We compare measurements of Acheulean tools (N = 3,526) to measurements among simulated, time-averaged nest assemblages derived from observations across North America (N = 2,544). We discuss the results, as well as the potential of natural experiments, such as the evolution of bird nests, in exploring difficult problems in lithic analysis.

Pailès, Matthew (University of Oklahoma)

[131] What's Really Important in the Ethnohistory of Sonora?

Analysis of Contact Era ethno-historical accounts has played an outsized role in the interpretation of protohistoric Sonora, Mexico. Controversy surrounds interpretations, owing to incongruities between archaeological and textual data as well as disagreements over how to weight the disparate observations made in these documents. Modern researchers variably evaluate the biases, motives, and the overall truthfulness of the authors of these documents. Another issue is the general subjectivity involved in fitting non-systematic observations into pre-existing anthropological models; usually some support can be found for almost any position. This presentation will attempt to address some of these issues by applying a formulaic approach to the weighting of document subject matter. While there is still subjectivity involved in the method, it provides a consistent and replicable means of evaluating the importance of different themes in a text. These themes can then be interpreted to infer both biases of the author and the relative significance of observations regarding Indigenous social organization. A trial attempt at this approach supports many pre-existing interpretations but also suggests some of the topics previously identified as paramount in the social organization of Contact era Sonora are of secondary importance.

[131] Chair

Paine, Richard (University of Utah), Richard Hansen (University of Utah), Carlos Morales-Aguilar (Université Paris 1 Panthéon-Sorbonne) and Kevin Johnston (Scholars Academic Editing)

[18] Issues Reconstructing the Ancient Population of El Mirador, Guatemala

El Mirador, in the northern Peten, has redefined our ideas about the Maya Preclassic. Its massive architecture and its complex system of sacbes compare to the largest Classic period centers. Unlike many of its smaller Preclassic neighbors, El Mirador collapsed at the dawn of the Classic. Understanding El Mirador’s organization, economy, and relationship to its environment requires detailed knowledge of the site’s population trajectory. Reconstructing El Mirador’s population trajectory, we face a series of issues: definition of site boundaries, visibility of above-ground structures, identification and counting of residential groups, the presence of hidden or invisible structures; dating residential groups, and populating residential groups. LiDAR images are analyzed to identify groups and define the sample universe. A sample of residential groups is defined for ground truthing a testing in the field, based on ecological factors, local settlement patterns, and socioeconomic estimates based on surface remains. We discuss sampling issues, the use of LiDAR, issues of accounting for hidden structures, and the combined use of ethnographic analogues and modeling to populate ancient structures, and how each affects population estimates for El Mirador.

[18] Chair

Paja, László [245] see Parditka, Györgyi

Paja, László [245] see Parditka, Györgyi

Palacios, Horvey (University of Miami), Traci Arden (University of Miami), Julie Wesp (American University) and Travis Stanton (University of California, Riverside)

[66] Maya Ossuaries: Body Processing and Collective Memory in the Terminal Classic

The allocation of space for the deceased is an integral component of understanding the relationship between a community and its mortuary practices. This paper explores how Maya ossuaries, or deposits with the commingled remains of multiple individuals, form a distinct body processing method that increases in frequency during the Terminal and Postclassic period in the Northern Maya lowlands. Data from salvage excavations of a Terminal Classic disturbed ossuary in the archaeological zone of Yaxuñá in central Yucatan are compared with ossuary deposits at Chichén Itzá, 20km to the north. Along with population decline at Yaxuñá during Chichén’s rise to power came a number of new cultural practices associated with the larger mega-site. New funerary practices including an ossuary with numerous fragmented human remains as well as urn burials signal profound cultural changes during this time. This research illuminates how ossuaries are integral to the history of this region by providing spaces for collective memory and enhancing the relationship between space, the body, and community within Maya society.

Palacios-Fest, Manuel [84] see Kajiankoski, Philip

Palacios-Fest, Manuel [84] see Kajiankoski, Philip

Palesfsky, Gina (University of California, Merced), Thanhik Lertcharnrit (Silpakorn University) and Kelly J. Knudson (Arizona State University)

[282] Iron Age Trade and Mobility: Assessing Migration at the Site of Ban Pong Manao, Central Thailand

The archaeological site of Ban Pong Manao is located in the highlands of central Thailand with mortuary contexts dating to the late Iron Age (300–400 CE). Most individuals were buried with numerous grave goods, including intentionally broken ceramics and ritually bent metal implements, and some graves included imported metal, glass, stone, and shell artifacts. The presence of non-local artifacts implies interregional interaction and may indicate
some degree of social inequality, but the scale, nature, and expression of these relationships remains unclear. This study uses radiogenic strontium isotope analysis to assess the migration histories of Iron Age inhabitants of Ban Pong Manao. First molar enamel samples from 32 adults were analyzed to distinguish between local and non-local individuals within the burial population. The results contribute to ongoing debates regarding the social significance of imported artifact inclusions in ancient Thai mortuary contexts—whether they signal high social status (prestige goods), the nonlocal origin of the deceased (reflection of social identity), or evidence communal aspects of memory and mourning. Results from this study further contextualize the changing social, material, and lived experiences of Iron Age inhabitants at Ban Pong Manao through a clearer understanding of migration, social identity, inclusion, and belonging.

Paling, Jason (Plymouth State University), Marx Navarro Castillo (UNICACH) and Justin Lowry (SUNY-Plattsburgh)

[18]   Underwater Archaeological Survey of Freshwater Lagoon in the Lacanha River, Chiapas, Mexico

The intrinsic relationship between human beings and bodies of water is unquestionable. Among the ancient Maya it has been observed that many of their agricultural cults were linked to existing bodies of water where they settled. In the Maya Northern Lowlands, multiple underwater archaeological studies of cenotes record this behavior as offerings of luxury items and human sacrifice are often recovered and noted. The Rancho Ojo de Agua archaeological project focuses on the basin of the Lacanhá River. In the preliminary year of study, ethnographic evidence suggests that on May 3 every year, the current indigenous Maya groups of the region conduct pilgrimages to neighboring bodies of water to assure assistance for a prosperous agriculture season. Underwater archaeological surveys including dive-line and circular survey of three lagoons, Sanctuary of the Crocodiles, Laguna Ramón Cruz and Laguna Sibul, in the basin of Lacanhá river in the Maya Southern Lowlands were conducted by the Rancho Ojo de Agua archaeological project to understand the relationship of these bodies of water to early Maya settlement. The initial discoveries made in three bodies of water will be presented.

Paika, Joel [167] see Hernandez, Christopher

Palmer, Carol [4] see Jenkins, Emma

Palmer, Jamie (Bureau of Land Management-Utah)

[261] Addressing Today’s Issues with Yesterday’s Tools

Dakota Access Pipeline. Ruby Pipeline. Ocotillo Wind Energy Facility. Topock Natural Gas Compressor Station. These are just a few examples of projects where the National Historic Preservation Act (NHPA) failed to protect cultural resources deemed significant by Native American tribes. In these instances, why did NHPA fail? Largely because NHPA does not consider impacts to the complete suite of cultural resources. It only addresses historic properties and historic properties “of traditional religious and cultural significance”. This narrow focus makes NHPA a less-than-perfect tool to deal with cultural resources when it comes to today’s current issues and concerns. Is there an alternative? For years, experts suggest that the National Environmental Policy Act (NEPA) is better equipped to protect a wider range of cultural resources. In this presentation, I highlight several court cases where NEPA has successfully protected cultural resources when NHPA has failed to do so under similar circumstances. This ultimately shows the broad strokes of NEPA are a stronger tool for preserving cultural resources today rather than the limiting paintbrush of NHPA.

Palomo, Yoly [37] see Plank, Shannon

Palonka, Radoslaw

[180] Documentation, Methodology and Interpretation of Rock Art from Castle Rock Community, Canyons of the Ancients National Monument, Colorado

Thirteenth century A.D. in the central Mesa Verde region was a time of socio-cultural transformations, climatic changes, and increasing conflicts and violence that took place shortly before the final depopulation of the region. Since 2011 the Sand Canyon-Castle Rock Community Archaeological Project is being conducted and it focuses on the analysis and reconstruction of the settlement and social structure in a community of forty Ancient Pueblo sites dated to the thirteenth century. The project research area encompasses several canyons of the Canyons of the Ancients National Monument, southwestern Colorado. This paper presents some results of the project work with a focus on the methodology of recording the rock art, both using traditional and modern techniques of documentation, such as photogrammetry and 3D scanning, as well as initial analysis and interpretations. It includes Ancient Pueblo or Fremont rock art showing anthropomorphic figures and later Pueblo petroglyphs connected, for example, with violence or possibly astronomy. The rock art from the project research area is also represented by huge panels with historic Ute and Navajo petroglyphs depicting clans’ symbols, fighting warriors and hunting scenes, and also by “modern graffiti” or vandalism, like initials, names and dates from the nineteenth and early twentieth century.

Paludan-Müller, Carsten (NIKU, Norwegian Institute of Cultural Heritage Research)

[83] Conflict and Heritage

During recent years cultural heritage has moved into public awareness as part of contemporary conflicts. Destructions of sites and monuments in The Middle East and North Africa, and in the former Yugoslavia have given us blatant examples also of targeted destruction. However this is nothing new. Throughout history monuments and heritage have played their part in conflict between people. A recent conflict in the United States over monuments relating to the Civil War and its aftermath has further highlighted the importance of heritage as an active factor in how we understand ourselves and others in the stream of history.

But in order to fully appreciate what we are dealing with in the interplay of heritage and conflict, we need to understand that conflicts themselves are part of our cultural heritage. Conflicts that sometimes reach even far back into history is a living heritage with both tangible and intangible properties. They condition our contemporary interactions with “the other” and contemporary politics. The paper proposes approaches to understanding and dealing with the complex connections between heritage and conflict.

[319] Discussant

Palumbo, Scott (College of Lake County)

[260] New Survey Results from the Bolas Region, Costa Rica

The Bolas region presents one of the earliest steps toward the monumentality and complex social patterns that characterize later World Heritage sites in Greater Chiriqui. The forces and factors associated with these social changes remain incompletely understood. This paper shares the results from recent shovel test survey in the Bolas region and offers observations on broad social trends from the Formative period onward. Particular attention is paid to Mosca, another large and monumental site in close proximity to Bolas, and considers how social diversity may have shaped political change.
Palus, Emily (Bureau of Land Management)  
[261] Severed from the Landscape: Wrangling Over 100 Years of Collections from the Public Lands and Coordinating Repatriation  
The Bureau of Land Management’s (BLM) cultural resource responsibilities expand beyond the landscape, to the artifacts recovered from archaeological sites and the associated records. These “gatherings” under the Antiquities Act and “archaeological resources” under the Archaeological Resources Protection Act (ARPA) were collected in the public interest to be preserved in museums for future generations. Some of these collections may also be sacred and sensitive to descendant communities, and the Native American Graves Protection and Repatriation Act (NAGPRA) directs a pathway to return ancestors and cultural property to Indian tribes. Over a century of collecting from the public lands, some under a permit, some without, has left a legacy for the BLM to “manage” millions of items that were dispersed to more than 150 museums and universities. The well-intentioned goals of the Antiquities Act, National Historic Preservation Act, and ARPA place important responsibilities on Federal agencies to be stewards of this heritage, and under NAGPRA, to be agents to uphold tribal rights and facilitate repatriation. This paper illustrates through recent examples the complex challenges in implementing these statutes, navigating occasionally absurd scenarios, and the critical need for partnership with repositories and engagement within the discipline to care for this shared legacy.

Pan, Yan (Department of Cultural Heritage and Museology, Fudan University)  
[284] A New Hypothetical Framework of Understanding the Evolution of Agriculture in the Lower Yangzi Region  
Although a number of studies in recent years have contributed fresh knowledge to our understanding of the origins and development of agriculture in the Lower Yangzi, updated data have made this issue even more complicated. The empirical evidence shows very little information about any hunter-gatherers who might have lived in this area and indicates that, 10,000 years ago, humans first appeared here as successful resource managers or niche constructors. The human ecosystem characterized by wetland management had already become quite stable by 8,000 BP. How did such a system form? And where did it come from? Is the Kuahuqiao Culture truly the descendant of Shangshan or an independent culture that had come from the continental shelf that is submerged by the ocean now? Are the similarities in the subsistence patterns of Kuahuqiao and Hemudu caused by direct heritance or coincidental cultural choice? Here I intend to propose a new hypothetical framework that differs from the Chinese traditional cultural evolutionary view to explore these issues in light of cultural niche construction theory.

Panahipour, Mitra (University of Arkansas)  
[71] Patterns of Land-Use and Political Administration beyond the Core Areas of the Sasanian Empire  
The landscapes of the Sasanian Empire have long been viewed as massive and state-sponsored development projects, in particular in politically and economically core zones. Despite these unparalleled understandings, our knowledge of peripheries and their connection with the sociopolitical organization of the time have still remained as some of the key gaps in the studies of late antiquity. To address these questions, I examine the settlement expansion, water management systems and agricultural intensification along the Sirwan/Diyala River in the Kurdistan Region. With the application of satellite images for landscape classification, GIS-based hydrological modeling, proxy records to reconstruct the climatic conditions, and combined with results of archaeological fieldwork, this paper offers that a bottom-up approach to intensification will shed new light on the role of local communities and the degree of their autonomy. It presents that large-scale projects and dependency on the centralized political authority were not always agriculturally required and a different intensification strategy with the integration of both irrigation and rain-fed practices could sustain a growing population. I further discuss the great potential of this research as a case study to unravel the role of peripheries in broader socio-political and economic transformations during the Sasanian period.

Panich, Lee (Santa Clara University) and Tsim Schneider (University of California, Santa Cruz)  
[327] Peopling the Post-contact Landscape in Central California: A Pragmatic Approach  
A cornerstone of recent pragmatic approaches to archaeology is the notion that our efforts can be judged by their practical outcomes. This may take the form of illuminating historical silences, and for those archaeologists working in post-contact or colonial contexts this often means working with indigenous groups seeking governmental or popular recognition. In this paper, we explore our collaborative efforts to discover and characterize archaeological sites dating to the early historic era in the territory of Coast Miwok and Southern Pomo people in central California. Approved by the Federated Indians of Graton Rancheria, this research is explicitly designed to counter prevailing misunderstandings about the impacts of the Spanish mission system and subsequent iterations of settler colonialism, which are usually viewed as projects that eliminated native landholdings and cultural knowledge. Through the use of historic documents, early maps, ethnographic data, and targeted archaeological fieldwork, we are illuminating a complex refugium along Tomales Bay that sustained native people during the first century after the arrival of Europeans to the region. We will discuss the challenges and opportunities of our research in light of the emerging concern for pragmatism in archaeology.

Pankowska, Anna [29] see Smejda, Ladislav

Pantoja, Luis, Iliana Ancona (Instituto Nacional de Antropologia e Historia INAH), Maria Gomez (Instituto Nacional de Antropologia e Historia INAH) and Claudia Gongora (Instituto Nacional de Antropologia e Historia INAH)  
[142] Social Complexity of Peripheral Settlements on the Regional Capital of Ichkaantsiikhoo  
In the last decade, research done by “Proyecto Arqueologico Region de Merida” (PARME) on peripheral settlements of the Ichkaantsji area has had as a main objective to recognize and interpret the social organization of these ancient communities, that according to literature have been defined as rural settlements. Therefore, how is this area and the sites that constitute it characterized? What role did they play in the political and economic system? And, which cultural elements have witnessed them? Multidisciplinary research, including the pattern of settlement, architecture, analysis of diverse cultural material and funerary context, lead to think that these Mayan communities were autonomously organized, showing their very complex and enduring politic, social and economic organization.

Pany-Kucera, Doris [87] see Salisbury, Roderick B.

Paquette, Jessica [219] see Drapeau, Michelle

Paquin, Simon  
[219] Evaluating the Impact of Climatic and Environmental Conditions on AMH Initial Dispersal into Western Europe  
Paleoenvironmental reconstruction is an important tool for evaluating and understanding interactions between human populations and their environment during prehistory. The downscaled global paleoclimatic models produced by the multidisciplinary efforts of the Hominins Dispersal Research Group allow for a fine-scale examination of climatic conditions in Paleolithic Europe. These models enable a spatial accuracy of 15 x 15 km and the consideration of inter-annual variability for different climatic variables. Using these data, an exploration of the MIS3 archaeological deposits and their environmental and climatic conditions is in progress. This project’s goal is to evaluate the influence of climate change and variability on AMH spatial organization and test proposed routes of AMH dispersal into Western Europe. The ongoing creation of a database for early Aurignacian sites
which is based on a critical analysis of archaeological dates will be presented. This database will be used to process paleoclimatic models and carry out micro-regional analysis within the putative paths of AMH dispersion.

Pardikta, Györgyi (University of Michigan), Paul R. Duffy (University of Toronto), Julia I. Giblin (Quinnipiac University) and László Paja (University of Szeged) [245] Peeling Back the ‘Overburden’: Collaborative Projects Studying Middle Bronze Age Societies in the Körös-Region, Southeast Hungary

The transition to the Middle Bronze Age in the Carpathian Basin encompassed a broad range of changes in material culture, settlement and social organization. Upon first glance, the Körös-Region was no different from its neighbours. Tell sites emerged, population increased, farming intensified, and people engaged in long distance trade. The international Bronze Age Körös Off-Tell Archaeology (BAKOTA) project has studied this area through settlements and mortuary archaeology for over 11 years. Our research reveals that despite expectations, the Körös-Region followed a path quite different from its neighbours during the Middle Bronze Age: it did not experience the emergence of social inequality typical of societies just dozens of kilometers away. In this paper, we address how collaboration between North-American and European researchers shaped our questions, and how our project culture and language—("Hunglish")—have built on the successes and legacy of the Körös Regional Archaeological Project. We highlight our process of discovery, our continued interaction with KRAP, and the unexpected lessons to come from the deposits that superimpose the Copper Age layers.

Pargeter, Justin (Emory University) and Marika Low (University of Wollongong) [41] Lithic Miniaturization and Behavioral Variability in Southernmost Africa 18–11 kcal. BP

Lithic miniaturization, the systematic production of small stone artifacts by controlled fracture, was a pervasive feature of late Pleistocene lithic technology. Smaller tools allowed humans to exploit raw materials more efficiently, to produce composite tools more effectively, to reduce a wider range of tools, and to increase mobility by lightening toolkits. These benefits allowed humans to occupy a wider range of ecological niches. Archaeologists working in southern Africa have long acknowledged lithic miniaturization’s importance in framing the region’s late Pleistocene prehistory. However, to date archaeologists have conducted very little inter-region comparative research on the topic. This paper presents the results of a comparative lithic technological study between Klipfonteinrand and Sehonghong—two large rock-shelters located in southern Africa’s winter and summer rainfall zones respectively. Evidence from these sites shows not only a comparative technological approach’s effectiveness but also that lithic miniaturization expresses itself differently in different regions. Patterned variability of this nature fits a model of strategic behavioral variability. To gauge variability in prehistoric lithic miniaturization, archaeologists need to adopt more contextual and comparative methods of stone tool analysis.

Parker, Bradley (University of Utah) and Gabriel Prieto (Universidad Nacional de Trujillo) [165] Microartifact Analysis: An Application at Pampa La Cruz, Huanchaco, Peru

For decades archaeologists have been trying to develop methodologies that will help them determine what activities took place in and around ancient structures. Since people tend to clean activity areas, especially those that are used repeatedly, visible artifacts are rarely discovered in the context where they were originally used. Microartifact analysis focuses on the tiny fragments (<1 cm) of ceramics, bone, lithics, shell and other microartifacts that are produced as a result of human action. These tiny fragments are much more likely to remain in or near the context where they were originally produced because they are too small to be easily gathered and are often trampled into the soil matrices of ancient surfaces. This study applies microartifact sampling, processing and analytical techniques to characterize and compare the activities that took place on ancient surfaces at the site of Pampa la Cruz in Huanchaco, Peru. By examining the ubiquity of various microartifact categories per liter of excavated surface matrix, we isolate loci of food production, suggest which types of local and non-local foods were consumed, theorize about cooking practice and waste disposal, and examine traffic patterns in and around two Gallinazo structures.

Parker, Bradley [165] see Osores, Carlos

Parker, David [274] Beer, Bologna, and Beaux-Esprits: A Legacy of John R. White

This paper discusses the public engagement of the late Dr. John R White through stories, observations, and news media. White, who passed away in 2009, had been an archaeologist at Youngstown State University, where he led excavations, gave interviews, and presented the past since 1971. For many residents of the Mahoning Valley, White was a fixture, often teaching archaeology to his students, then later their children, and finally the grandchildren over the course of four decades. Not content to teach only in the classroom, White led excavations from early spring until the late autumn to tell a variety of histories throughout the Mahoning Valley. Additionally, White organized trips to many of the region’s important archaeological sites, such as the earthworks of the Ohio Valley, blast furnaces of Western Pennsylvania, and several international destinations. Moreover, this paper
Parker, Evan (Tulane University)  
[162] **Middle Preclassic Greenstone Caches from Paso del Macho, Yucatan**  
Complex ritual deposits dating to the Middle Preclassic period are rarely encountered in Yucatan, and typically have only been recovered from disturbed contexts. Excavations along the center axes in the plaza of the Middle Preclassic village of Paso del Macho in the Puuc region of Yucatan have yielded a series of offerings spanning from the early Middle Preclassic to the cusp of the Late Preclassic. Three different floor sequences were each associated with several offerings. The forms of the nine pottery vessels recovered from the cache are quite unique compared to types normally encountered in Middle Preclassic contexts from the Puuc region. These include a bucket, miniature bowls and dishes, and cacao serving vessels. Several of these vessels contained large greenstone axes and basalt, while another contained a perforated greenstone plaque. Upon reaching sterile soil, a massive pile of basalt fragments was found, under which three large east-oriented greenstone axes were recovered. This greenstone cache bears strong resemblance to other Middle Preclassic place-making deposits from the Maya lowlands, including Ceibal, Cahal Pech, and Cival. Its presence indicates the Northern Lowlands were embedded in the same expansive Mesoamerican trade networks as elsewhere in the Maya world.  

Parker, Megan (University of Kentucky) and Jon Spennard (California State University, San Marcos)  
[256] **Sacred Landscapes, Spaces, and Ritual Offerings as the Materialization of Environmental Narratives at the Site of Pacbitun, Belize**  
Material culture studies allow archaeologists to examine the social implications of the physical world in which people are embedded. Sacred landscapes, for example, inspire social narratives regarding how people should interact with the environment. Components of those landscapes, such as caves and mountains, become active participants in the establishment, maintenance, and mobilization of environmental narratives. They serve as hegemonic tools for conveying morality and proper behavior, and as such they are prone to appropriation by those in power. Using archaeological data from the Maya site of Pacbitun, this paper seeks to understand how materialized narratives are part of broader networks of power used to reinforce and challenge dominant hegemony. The presence of elite-sponsored constructions near caves act as overt manifestations of environmental narratives seeking to situate the community as a unified whole. Yet, studying ritualily deposited offerings in Pacbitun's caves reveals differences in ceremonial practice. These deposits inform about the day to day concerns of individuals, their socioeconomic status and differential access to power.  

Parker Pearson, Mike [29] see Schauer, Peter  

Parker Pearson, Mike [126] see Shillito, Lisa-Marie  

Parkinson, William (Field Museum of Natural History)  
[245] **The Körös Regional Archaeological Project, 20 Years of (Mostly Successful) Collaboration**  
The Körös Regional Archaeological Project was established in 1998 as a collaborative, multidisciplinary, research project focused on the later prehistory of the Körös region on the Great Hungarian Plain in the Carpathian Basin. Over the last two decades, the project has attempted to build upon the success of previous ambitious projects in the region by emphasizing not only the collaborative nature of the research endeavor but also by incorporating a robust training component into the project. In this paper, we attempt to review, critically, our research at Neolithic and Copper Age sites in the region, with an eye towards what has been accomplished and what could have been improved. We also discuss our current research, which attempts an explicit comparison of the trajectories toward settlement nucleation and tell formation during the Neolithic and the Bronze Age.  

Parrish, Caroline (Tulane University)  
[337] **Middens, Caches, and Burials: Contextualizing the Ceramic Assemblage of La Corona**  
Mundane utilitarian ware, finely decorated polychromes, fine paste and epigraphic imports, and plates bearing idiosyncratic local designs characterize La Corona’s ceramic assemblage. The ceramic chronology of La Corona is presented with emphasis on construction phases, middens, caches, burials, and special deposits in an effort to reconcile the ceramic assemblage and the political history of the site. Polychromes bearing place names highlight La Corona’s elite regional relationships while the prevalence of Lowland utilitarian ceramic types regionally contextualizes the nonelite. This paper seeks to situate the ceramic assemblage of La Corona within its chronological, regional, political, and social contexts.  

Parrish, Allison [329] see Riel-Salvatore, Julien  

Parrish, Deborah (Western Kentucky University), Jean-Luc Houle (Western Kentucky University), Jamsranjav Bayarsaikhan (National Museum of Mongolia) and Matthew Fuka (Purdue University)  
[3] **Paleodietsry Analysis of Xiongnu Individuals in Zuunkhangai, Mongolia**  
The archaeology of the Xiongnu period has grown considerably over the last decade, yet debate still surrounds Xiongnu subsistence practices and the timing for the rise, expansion, and collapse of the Xiongnu polity. The problem, in part, has to do with discrepancies between dates that come from the same sites. Some dates have been reported to be earlier when the samples came from human remains. These discrepancies have been attributed to the ‘reservoir effect’. In order to investigate this, we analyzed and dated both human and animal remains from three Xiongnu period ‘ring’ burials in northwestern Mongolia—the so-called periphery of the Xiongnu Empire. Given this region has many lakes and that isotopically ‘heavy’ δ13C-values have been detected in cases from other regions of Mongolia, it is possible that fishing played a more important role than previously thought in the subsistence economy of some Xiongnu period pastoralists. Accordingly, paleodietsry reconstructions based on dental pathology and stable carbon and nitrogen isotopic analyzes were also examined to evaluate how broad the dietary resources might have been and whether these individuals subsisted mainly on terrestrial animals or if fish made up an important enough source of food as to affect 14C dates.  

Parrott, Nathan (University of Calgary) and Carlos Peraza Lope (Centro INAH Yucatán)  
[302] **An Analysis of Bark beaters from the Postclassic Site of Mayapán**  
This project examines an assemblage of 37 bark beaters from Northwest Yucatán, principally from the Postclassic Maya site of Mayapán. Bark beaters are stone tools used in the production of bark paper. In Mesoamerica, these tools were important in several specialized craft industries, including the manufacture of codices and clothing for religious and political ceremonies. There is still much that is unknown about pre-Columbian bark paper production, as bark paper rarely survives in the archaeological record, and bark beaters are often the only remaining physical evidence indicating that
the production of bark paper took place at a site. Ethnographic sources suggest that the Postclassic Maya site of Mayapán was an important religious center that supplied priests from surrounding provincial capitals with codices made of bark paper. This study examines the degree of standardization of bark beaters, along with potential distinctions in use based on form and ethnohistorical information. The findings suggest that bark beaters were fabricated in a standardized manner, with two distinctly identifiable forms. In addition, bark beaters were also utilized for tasks other than the production of bark paper, such as smoothing plaster.

Parsons, Alexandra [111] see Hawthorne, Paige

Parsons, Timothy (Florida Division of Historical Resources) [245] Reinvesting the Wheel: Discovering the Late Copper Age in Hungary, Again
At about 3500 BC, a seemingly intrusive population of burial mound (kurgan) builders undertook a long-term series of migrations that resulted in the disruption of settlement patterns and social structures throughout eastern and central Europe. This phenomenon coincided with the emergence of the expansive and geographically homogeneous Baden material culture. From the 1960s to the 1990s, a series of archaeologists investigated the relationship between kurgan builders and Baden in the Carpathian Basin at various geographic scales. They questioned whether the Baden tradition was adopted by indigenous populations, if the tradition arrived with people via migration, and what role, if any, kurgan builders played in the emergence of Baden. The research presented in this paper is a reassessment and continuation of work done by researchers such as Maria Gimbutas and Andrew Sherratt, developed within the context of long-term, international, collaborative projects that address broad anthropological and archaeological issues related to social organization and hereditary inequality. Ultimately, I conclude that the shift in material cultural witnessed during the Late Copper Age on the Great Hungarian Plain is consistent with models of social change developed by other presenters in this session.

Pascual, Daniel [74] see Méndez, César

Pascual Soto, Arturo [128] Diosa y gobernantes en El Tajín del Epip lézico (ca. 800—1000 d.C.)
Los gobernantes de El Tajín, aquellos pertenecientes al linaje de 13 Conejo, convirtieron al Conjunto Arquitectónico de el Edificio de las Columnas en la sede del poder político y religioso de la ciudad. Su autoridad se dejó sentir en buena parte de la llanura costera y en las montañas de Puebla y Veracruz. Tláloc se había convertido en númen de la clase política local y el culto al gobernante giraba en torno a esta deidad inmemorial. La ponencia explora el papel que tuvieron las divinidades del Epip lézico y las maneras en que se articulaban en torno al culto a los ancestros.

Pastrana, Alejandro (INAH), Annick J. E. Daneels (IIA-UNAM) and Silvia Domínguez (DEA-INAH) [285] Obsidian Processing and Distribution in Classic Period Lower Cotaxtla Basin, Veracruz, México
During the Classic period (1st mill. CE), South Central Veracruz was a mosaic of microstates in which obsidian was scarce but available to everyone. Semi-intensive systematic survey in 400 km² of the lower Cotaxtla basin showed occasional concentrations that led to propose two alternatives: state-controlled workshops obtaining and redistributing artifacts to resident population, or independent workshops servicing clients across borders, implying the existence of a market-based economy.

Chaîne opératoire analysis shows that, while obsidian sources (Zaragoza-Oyameles for prismatic blades and Pico de Orizaba for percussion flakes), core types and knapping techniques are identical across the survey region, there is a high incidence and a wide variety of knapping errors. The evidence reflects a well-established procurement system coupled to a low degree of specialization, which opens the possibility of a third alternative: state procurement of raw material (acquired using surplus of commercial staple like cotton, cacao, or rubber), with limited individual household access and production of artifacts.

Patana, Ilaria (Department of Anthropology, Harvard University), Susan Mentzer (Institute for Archaeological Sciences, University), Xiaohong Wu (Peking University), David Cohen (National Taiwan University) and Paul Goldberg (Department of Archaeology, Boston University) [177] Reconstruction of Pyrotechnology Connected with the Earliest Pottery. Micromorphology and -FTIR at Xianrendong and Yuchanyan, South China
The sites of Xianrendong (Jiangxi) and Yuchanyan (Hunan), China, contain the earliest pottery yet discovered, dating respectively 20,000 cal BP and 18,600 cal BP. This pottery is found in otherwise Late Paleolithic, hunter-gatherer contexts. To understand human activities at these caves we employed micromorphology and -FTIR on the sediments. Here we present the results of the analysis of the layers containing combustion episodes, which suggest low heating temperatures at both sites, and infer different kinds of activities in the caves. The low temperatures evident at Xianrendong raise new questions regarding cooking methods and pottery-making techniques. Thoroughly consumed wood fuel and presence of prepared clay surfaces at Yuchanyan indicate sophisticated pyrotechnological knowledge. These results are a first step in generating a high-resolution account of life in these two sites.

Patch, Shawn [286] see Lowry, Sarah

Patchen, Anna [156] see Hunt, Rebecca

Patel, Sneh [121] Ceramic Technological and Stylistic Boundaries on the Indus Frontier of Gujarat
Rita Wright’s pioneering work on the ceramic stylistic and technological traditions of the Indo-Iranian borderlands highlighted the potential of new theoretical approaches to our understanding of cultural boundaries within South Asia. This work highlighted the complex nature of technology and style boundaries within specific contexts of cultural interaction. This paper takes inspiration from Dr. Wright’s work and applies this framework to another frontier of the Indus: the northwestern state of Gujarat. At the time of the Harappan occupation of this region (4th to 2nd millennia BCE), Gujarat was home to a number of localized ceramic traditions. Overtime, this area came to represent a mix of both traditional cultural expressions of Harappan stylistic norms as well as regional appropriations and adaptations of Harappan ceramic style and technology. This unique cultural landscape developed as a result of different forms of cultural processes, whether it be emulation, knowledge transfer, or shared aesthetics. By comparing the technology and styles of local ceramic traditions with that of the Harappans it is possible to trace one aspect of social interaction within this area.

[121] Chair

Patel, Sneh [121] see Green, Adam
Patterson, Erin (Tulane University)  
[337] The Bioarchaeology of La Corona, Guatemala  
Analysis of human skeletal remains has made significant contributions to the understanding of the history of La Corona and its interaction with the wider Maya world. The skeletal sample has now grown to include nearly thirty individuals, and the site centers on single and multiple burials, non-burial deposits, and individuals from the site center and outlying sites. The study, one of the most comprehensive in northwest Peten, has focused on establishing demographic information and examining osteological indicators of diet and health, especially dental pathologies like caries, calculus, antemortem tooth loss, and linear enamel hypoplasia. Through the analysis of human bone, this paper will explore how factors like sex and social status are correlated with health and diet at La Corona. These data help situate La Corona within a broader regional context.

Patton, Katherine (University of Toronto), Susan Blair (University of New Brunswick) and Ramona Nicholas (University of New Brunswick)  
[199] Recent Insights into Protohistoric Foodways in the Northern Quoddy Region of the Northeast  
Despite more than a century of archaeological research in the Quoddy Region of southwestern New Brunswick, in the Canadian Maritime Provinces, the protohistoric and early contact periods in this area have remained obscure. However, recent research at several sites has begun to illuminate this period, and like many of the precedent Woodland period sites (prior to 500 BP), many of these newly studied protohistoric sites have produced shell-bearing components, and contain a wealth of information on the integration of foodways and settlement, including site intensity and season of habitation. In this paper, we report on recent research at one of these sites, BgDs25, located along the northern mainland of the Quoddy Region, integrating an analysis of faunal remains as a means of gaining insight into Peestomakati food and lifeways, and to add to a growing body of primary research.

Paul Schann, Denise [116] see Rebellato, Lilian

Paulsen, Paige (University of Central Florida)  
[71] Geospatial Analysis of Tumuli in the North Central Anatolian Plateau  
The tumuli fields—landscapes heavily modified by monumental burial mounds—of Central Anatolia provide an opening to investigate how the tumuli reflect and create places of collective memory, territorial identity, and the social order. This project takes the Iron Age tumuli of the Kanak Su Basin in Yozgat, Turkey as a case study and uses a GIS approach based on available evidence: their location from archaeological surveys, and a small number of excavated mounds. This paper investigates the relationship between the settlement pattern and the burial mounds along axes of proximity, visibility, and accessibility using spatial statistics, viewsheds, and least cost pathways.

Paulson, Marta [223] see Boyd, Charles

Pavlik, Bruce [86] see Louderback, Lisbeth

Pawlowicz, Matthew (Virginia Commonwealth University)  
[210] Capturing People on the Move: Spatial Analysis and Remote Sensing in the Bantu Mobility Project, Basanga, Zambia  
From its inception in 2014, the Bantu Mobility Project has sought to recover the various mobilities that made up peoples’ experience of the Bantu Expansions, the spread of over 500 related languages across nearly half the African continent. We have sought to refocus research on the Bantu Expansions away from the macro-scale and onto the specific movements of people, animals, and material goods at various spatial and temporal scales. From an archaeological standpoint this emphasis on different mobilities necessitates careful study of the spatial contexts of recovered artifacts—and of the human activities that left them behind—to capture different forms of mobility. Analysis of spatial data from archaeological and geoarchaeological surveys using GIS has already illustrated important relationships between different kinds of sites in the region around Basanga, Zambia, with implications for the kinds of daily, seasonal, and long-term movements that connected the people living and working in those places. Similarly, using GIS to combine such data with that available from satellite imagery has enabled the creation of a predictive model for the location of other sites, and which concerns from a mobile, Bantu-speaking community might have driven those selections, that can be evaluated through remote sensing and further survey.

Pay, Nicholas (Bureau of Land Management), C. Cliff Creger (Nevada Department of Transportation) and Beth P. Smith (Nevada Department of Transportation)  
[261] The Long and Winding Road: Documenting Historic Transportation Routes  
One tough issue facing federal agencies in the United States and their archaeologists is how to document historic era transportation routes. In Nevada alone, there are nearly 6,000 miles of roads managed by the Nevada Department of Transportation (NDOT) most of which follow, cross or parallel historic routes. The Bureau of Land Management (BLM) manages nearly 48 million acres (~75,000 sq miles) of land in the state of Nevada with several thousand miles of roads and highways. The BLM has already created thousand of miles of historic routes, the spread of over 500 related languages across nearly half the African continent. We have sought to refocus research on the Bantu Expansions away from the macro-scale and onto the specific movements of people, animals, and material goods at various spatial and temporal scales. From an archaeological standpoint this emphasis on different mobilities necessitates careful study of the spatial contexts of recovered artifacts—and of the human activities that left them behind—to capture different forms of mobility. Analysis of spatial data from archaeological and geoarchaeological surveys using GIS has already illustrated important relationships between different kinds of sites in the region around Basanga, Zambia, with implications for the kinds of daily, seasonal, and long-term movements that connected the people living and working in those places. Similarly, using GIS to combine such data with that available from satellite imagery has enabled the creation of a predictive model for the location of other sites, and which concerns from a mobile, Bantu-speaking community might have driven those selections, that can be evaluated through remote sensing and further survey.

Payntar, Nicole, Julia Earle (University of Texas at Austin), Camille Weinberg (University of Texas at Austin) and R. Alan Covey (University of Texas at Austin)  
[100] Foreign Travel and the Development of Inca Archaeology in Cuzco, Peru  
The roots of Inca archaeology lie in reports and memoirs of 19th century travel, which culminated in Hiram Bingham’s 1911 Yale Peruvian Expedition. These accounts traced expeditions that brought international attention to architectural remains of Inca royal estates and religious monuments, providing an early “guide” to would-be travelers and framing the formative years of Inca archaeology. As research proliferated in the past 50 years, some archaeologists have promoted the remains of royal estates as the materialization of the Inca dynasty, whereas others have advocated a more dynamic approach. Today, the articulation of a well-defined tourist circuit that connects Cuzco to Inca monuments in nearby areas perpetuates the historicist interpretation of the dynasty, promoting a sense of imperial timelessness. This poster uses GIS analysis to frame the historical development of the Cuzco tourist circuit in the broader archaeological context that has developed alongside it.

Pazmiño, Estanislao  
[178] Entre los Andes y la Selva: Una aproximación al desarrollo prehispánico en el valle del Alto Upano, Ecuador  
Localizado en la alta amazonía ecuatoriana el entorno geográfico del valle del río Upano acoge una amplia diversidad ecológica y de suelos que, sin duda, resultaron atractivos para los diferentes grupos humanos que se asentaron en la región durante la época prehispánica. Por otra parte la ubicación estratégica hizo que el valle sin duda constituya un nodo importante en la interacción cultural entre los altos valles andinas y las tierras bajas
Peacock, Evan (Mississippi State University), Sheeji Kathuria (Mississippi State University) and David S. Nolen

Talking to Our Selves? An Applied Zooarchaeology Citation Analysis

Applied zooarchaeology has been on an apparent upward swing, gaining practitioners and seeing an increasing number of publications in natural science journals. Whether the intended consumers (conservation biologists, land managers) are receiving the message remains uncertain. We used a two-phase process to survey the literature pertaining to applied zooarchaeology: 1) keyword searching for highly cited applied zooarchaeology publications in Google Scholar; and 2) tracking of specific articles reflecting different scales of applied zooarchaeological research (species, community, ecosystem). For each source type, we organized bibliographic information in Excel and collected Library of Congress Subject Headings (LCSH) for the publication source to characterize the overall type of discipline(s) citing this work, whether archaeology, conservation biology, or related fields. We then assigned subject categories to each source by using the Library of Congress Linked Data Service to identify broader, discipline-level terms under which related LCSH could be grouped, allowing analysis of which publications were primarily within the boundaries of anthropology/archaeology, which were overall more closely associated with specific disciplines beyond anthropology/archaeology, and which were more interdisciplinary in nature. Preliminary results indicate a significant concentration of citing sources in the disciplines of anthropology and archaeology, suggesting that the product remains to be adequately marketed.

Peacock, Taylor (University of Victoria)

Names, Lineages, and Document Archaeology: Examining Traditions and Cultural Shifts in Jewish Personal Names

While artifacts and grave goods remain an archaeologist’s primary tools for gathering information on past populations, document and historical archaeology increasingly look to census records, obituaries, and family records, not just to confirm information about recovered artifacts, but as artifacts themselves. This study analyzed census data, birth records, and obituaries associated with three missing individuals assumed to be buried in Victoria’s Congregation Emanu-El Jewish cemetery to understand how personal names could be used in identification. The study determined that shifts in personal naming traditions in a family can indicate religious conversion, as was found in four generations of the Sylvester family, preventing burial in the cemetery. The study also examined name shifts across a single individual: first, how those who create records impact the data they collect, as was the case of Huldah who became Hilda across three decades of census, and second, how individuals themselves may change names between documents, highlighting how personal choices impact identification, as was the case of Solomon, also Simon. In examining three different forms of naming as case studies, the results emphasized how crucial documents can be to identifying individuals and families, but in doing so, we must consider social and cultural contexts.

Pearsall, Deborah [323] see Berman, Mary Jane

Peasley, Ariel (California State University, Chico) and Georgia Fox (California State University, Chico)

Digging the Dockyard: An Analysis of Curation Practices in Antigua

Museums and their exhibitions are representations of archaeological research. Archaeological excavations, associated objects, and subsequent interpretations frequently end up in museums and are often the only access the general public has to this knowledge. How objects are acquired, cared for, and presented ultimately affect what people learn about them in a museum setting. It is crucial for museums and museum professionals to maintain standard practices and care for these objects to the best of their ability with the resources they have available.

Our work at the Dockyard Museum in Antigua focuses on the difficulties and the potential for proper curation and care of unique archaeological artifacts while keeping a narrative the public is attracted to. Our project focused on rejuvenating the museum’s displays, but through this process we realized the necessity for professional archaeologists to understand how curation and narrative at a museum have lasting implications on the archaeological record. This presentation highlights the history and current state of the Dockyard Museum while addressing how the care and display of archaeological materials affects the interpretation and preservation of the archaeological record.

Pecci, Alessandra (University of Barcelona)

Discussant

Peck, Laura [223] see Munger, Tressa

Peckham, Moira (University of California, Berkeley) and Annie Danis (Department of Anthropology, University of California)

Community-Engaged Archaeology with Abiquiu, New Mexico

This poster presents how the Berkeley Abiquiu Collaborative Archaeology project integrates oral histories conducted with community members with spatial and material data to support a more robust dialogue between the contemporary and the historic that is thoroughly grounded in community perspectives. At Abiquiu, the community’s perspectives on water management as presented through the interviews and, subsequently, the material and spatial data are intimately connected to not only identity, but also historic and contemporary tensions between local and state water-managing entities.

Pederson, Joel [305] see Cannon, Molly

Pedro Black, Marielle and Connie Reid (Kaibab National Forest, USFS)

Saddle Mountain Wilderness, North Kaibab Ranger District, Kaibab National Forest

The Kaibab National Forest has a long history of completing site inventory, recordation, and research within wilderness areas with the help of assorted volunteers. Recent work on the North Kaibab Ranger District of the Kaibab National Forest in the Saddle Mountain Wilderness has been the result of the Wildcat and Fuller fires. Archaeological involvement during the fire planning process helps to proactively identify and protect heritage resources ahead of fire spread. Working with fire crews, archaeologists are able to prep, discover, and avoid/protect sites. Sites located in fire planning or burned areas are highly visible for easy recordation, and require resource damage assessments to evaluate and treat sites susceptible to erosion and other disturbances. The occurrence of fires in wilderness offer an opportunity to learn more about sites that may not otherwise be achieved except during directed research activities carried out with the help of volunteers. Exposed sites are ideal for research regarding fire effects and spatial and temporal land use studies, as well as gaining a more comprehensive view of features and artifacts within and among sites.
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Peeples, Matt (Arizona State University), Barbara Mills (University of Arizona) and Jeffery Clark (Archaeology Southwest) [83]
The Risks and Rewards of Network Position in the Chaco World
In a previous study Peeples and Haas (2013) compared brokerage (intermediate) positions in networks of ceramic similarity to measures of settlement growth and longevity for the late pre-Hispanic western U.S. Southwest (A.D. 1200–1500). Contrary to expectations from many contemporary network studies where brokerage positions are associated with long-term advantage, this work instead suggested that broker settlements tended to be small, short-lived, and that brokerage was temporary. This example suggests that the outcomes associated with network position are not strictly determined but that culturally and historically contingent factors can influence how the risks and rewards of network position play out. In this study we take this investigation further by exploring the changing outcomes associated with brokerage positions across a major cultural/historical transition in the northern Southwest. Specifically, we track the relationship between brokerage and settlement trajectories across the rise and fall of the Chaco World (A.D. 800–1250). Initial results suggest that brokerage positions may have conferred advantage that did result in settlement growth and longevity during the height of the Chaco system, but not before or after. In light of this finding, we explore the role that political organizational complexity may play in how network ties are valued.

Peeples, Matt [287] see Dungan, Katherine

Peixotto, Becca (American University) [239]
Paths of Connection in the Great Dismal Swamp: Wetland Watercourses as Indigenous and Maroon Landscape Features
Speckled with mesic islands and peat hummocks, the soggy lowlands and standing water of the Great Dismal Swamp in Virginia and North Carolina (USA) were home to thousands of African and African American Maroons ca. 1608–1863 and were a significant feature of the landscape of Indigenous Americans for many centuries prior. The Great Dismal Swamp Landscape Study and the Swampscapes project archaeologically investigate the landscape of resistance created by Maroons. The Dismal is far from a homogenous morass and surrounded by seemingly impenetrable vegetation deep in the Swamp’s interior, one may be tempted to view the small dry landforms on which Maroons, Indigenous people and others built structures, had fires, and engaged in other activities of daily life as isolated locales. Recent LiDAR studies and exploration has revealed a significant topographic similarity amongst the sites and potential sites identified to date in this varied wetlands: their proximity to a stream or watercourse. This poster examines the watercourses and what they may have meant for travel, community connections, and contact with the world beyond the Swamp.

Peláez Ballestas, Ingris [55] see Gastelum-Strozzi, Alfonso

Peláez Castellanos, Yolanda (Universidad de las Américas Puebla), Nawa Sugiyama (Department of Sociology and Anthropology, GMU) and Agustín Ortiz (Laboratorio de Prospección Arqueológica, IIA, UNAM) [293]
An Approximation towards the Function of Candeleros in the Plaza of the Columns Complex, Teotihuacan
Candeleros are ceramic artifacts that are almost exclusively found at Teotihuacan and appear in the archaeological record during the Late Tlamimilolpa, Xolalpan and Metepec phases. Their unconventional shape led scholars to propose different hypotheses regarding their specific function (i.e. “candle holders”, incense burners, lighting devices, domestic ritual paraphernalia). This paper studies 368 candeleros (fragments and complete pieces) recovered from the 2015 and 2016 excavations carried out at the Plaza of the Columns Complex, a civic-administrative complex in the ceremonial core of Teotihuacan. The spatial distribution of candeleros, as well as spot tests identifying the presence of residues within them (n=105), are utilized to understand their possible use(s). Preliminary results will be presented and compared to data from other parts of the city that exist to date.

Peliska, Charles [39] see Mann, Rob

Pellegrini, Evan [106] see Dillingham, Frederic

Pelton, Spencer (University of Wyoming) [58]
A Thermoregulatory Perspective on the Folsom Archaeological Record
Human cold intolerance unambiguously suggests that mid to high latitude prehistoric foragers used thermoregulatory technologies, such as clothing and housing, to cope with the environment, even if archaeologists rarely find them in the record. Others have recognized this, but none have developed a formal means of expressing variation in thermal technologies in the archaeological record over widespread temperature clines. I draw from observations collected during ethnoarchaeological fieldwork with the Mongolian Dukha reindeer herders to understand the material correlates for thermal technologies. I then present an analysis of 53 published Folsom archaeological assemblages to test the notion that phenomena associated with thermoregulation, such as end scrapers and houses, become more abundant in colder environments. I make the case that my results have widespread implications for understanding variation in forager archaeological sites independent of and complementary to subsistence-based interpretive frameworks.

Pelton, Spencer R. [105] see Robinson, Erick

Peña, Jose [65]
Casma Domestic Life at the El Campanario Site, Huarmey Valley—Peru
Households are the most important social unit in every society. The production and consumption of resources within the household can provide information on how resources were obtained, stored and distributed within the household or the community. Recent archaeological research had provided significant information about the Casma polity, which occupied the northern coast of Peru between 700–1400 A.D. The Casma society is viewed as a centralized polity that controlled several coastal valleys. Although certain aspects of the Casma society are still unknown, the research conducted at El Campanario was oriented towards understanding the domestic life of the Casma people. The excavations within the households at El Campanario has provided baseline information that will aid in reconstructing the domestic activities related to food preparation and consumption as well as craft production. The craft activities identified at the site include pottery manufacture, textile production, maize beer preparation, and fishing.

Peña, Jose [153] see Eche Vega, J. Eduardo

Penfil, Rachael (University of Illinois at Chicago) and Kelita Pérez Cubas [240]
Control, Visibility, and Storage at Monte Sierpe, a Late Horizon Site in the Pisco Valley, Peru
The Pisco Valley was an important node for the Inka empire’s control of what is now the southern coast of Peru, as evidenced by the presence of the large Inka administrative center of Tambo Colorado. This valley additionally would have been a strategic location for sociopolitical and economic exchanges between the Inka empire and the Chincha kingdom, whose capital is located just to the north in the Chincha Valley. This preliminary research utilizes survey data and GIS analyses to examine access routes, visibility, and storage distribution at the Monte Sierpe complex, located in the Pisco Valley, to better understand the relationship between the Chincha kingdom and the Inka empire during the Late Horizon. I argue that the
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Monte Sierpe complex—which includes the Band of Holes, located just 1km down the valley from the main site—was a Late Horizon administrative center utilized by the elites of both polities to exert control over the valley’s inhabitants. The data additionally suggest that the Inka incorporation of the site.

Chincha kingdom into the Inka empire was not as peaceful as previously thought, as evidenced by the construction of defensive walls in various areas of the site.

Penfil, Rachael [240] see Weinberg, Camille

Peniche May, Nancy (Universidad Autónoma de Yucatán—Facultad de Arquitectura) and Lilia Fernandez Souza (Universidad Autónoma de Yucatán—Facultad de Cien)

How does a building become architecture of power? How can this power be release or lost? There are many ways in which a building can be imbued with certain attributes that allow expressing and regulating unequal power relations. Along with the form and style of buildings, ritual is perhaps one of the most important means. Through ritual performance, actors imbue the building with the ch'ulel, ensouling and animating it; obliged the ch'ulel to leave the building, killing the animate construction, and make it possible for the ch'ulel to reind, favoring it to become more powerful. In the lowlands, the performance of rituals that had as purpose to animate, kill or make reborn buildings is a long-standing tradition that dates back to the Middle Preclassic period. This paper focuses on Structure 1714-Asub of Xaman Susula, a public building interpreted as architecture of power, precursor of the Classic palaces that had administrative and ritual functions but lacked domestic functions of palaces. During the archaeological explorations, we found material remains of ritual behavior that indicates that Structure 1714-Asub was alive and powerful. This building was likely manipulated by actors to wield power over other members of their community.

Penny, Dan (The University of Sydney) and Tegan Hall (The University of Sydney)

Urban-Palaeoecology of Cambodia’s ‘Middle Period’

The transition from the sprawling Angkor kingdom with its vast, low-density urban forms, to a constellation of smaller cities on the Mekong River was accompanied by profound changes to urban ecology and to landscapes—both in the failing low-density cities, and in the burgeoning trade-based centres that replaced them. Here, we present a paleo record of urban ecology that responds, in part, to changing population dynamics across Cambodia during the 15th to 19th centuries C.E. Implications for current models of ‘urban diaspora’ following profound social transformation will be discussed.

Pentney, Sandra (Atkins) and Stephen Bourne (Atkins)

Using the City Simulator Tool to Aid in Preservation during Resiliency Planning

The SAA has held sessions on how climate change is affecting cultural resources for several years now. We began with characterizing the impacts and concerns on how to preserve or mitigate. We have discussed ongoing studies, and strategies to engage the public and local government in conservation and recordation initiatives. This year, Atkins will be presenting a newly developed tool to help planning organizations visualize physical impacts to built environment, traditional cultural properties, and archaeological resources. The ‘City Simulator Tool’ will be presented as a method to understand climate change impacts at the community level, with particular emphasis on looking at impacts to all forms of cultural resources. By using this tool, we can help agencies see the effects of different resiliency plans on historic planning efforts and help agencies evaluate which plans represent the least impact to resources.

Perales, Manuel

To walk in order to remember... and to dominate: Inca Roads and Hegemonic Processes in Jauja, Central Highlands of Peru

Previous research on the Inca road system have generally developed functionalist perspectives on their associated characteristics and infrastructure, inherited in several cases from processualist approaches that focused primarily on their economic and military role. However, more recent studies on the nature of the Inca state have varied substantially, granting an outstanding importance to ideology and religion as mechanisms of domination. Based on these considerations, this paper presents an approach to the role that would have been played by the roads in the strategies of domination and hegemonic processes established by the Incas in the region of Jauja in the central highlands of Peru. Based on a set of data obtained by the Qhapaq Ñan Project in that territory, I propose that the road system was thought of as a kind of technology of power in the Foucauldian sense of the term.

Peralta, Eva (CONICET/IANIGLA-UTN FRSR, Argentina), Leandro Luna (CONICET/IMHICIHU. UBA. Buenos Aires, Argentina.), Claudia Aranda (Faculty of Odontology, University of Buenos Aires,) and Adolfo Gil (CONICET/IANIGLA-UTN FRSR, Argentina)

Human Demography and Ecosystems: Comparative Approach of Human Age-at-Death Profiles from Northpatagonia (Southern Mendoza, Argentina)

The aim of this presentation is to provide information about human age-at-death profiles in order to understand the environmental/demographic dynamics of pre-Hispanic people from Southern Mendoza. Burials from 20 archaeological sites are included in age-at-death profiles, which are compared to discern regional particularities. This is a transitional area between hunter-gatherers groups and farming populations. The presentation evaluates if the introduction of domesticated resources in the diet and the new agricultural subsistence patterns altered the hunter-gatherer demographic dynamics, and specifically if human demography declined during the Little Ice Age (LIA).

Peraza Lope, Carlos [302] see Parrot, Nathan

Perdikaris, Sophia (Human Ecodynamics Research Center CUNY)

Discussant

Peres, Gregory [43] see Manin, Aurelie

Peres, Tanya (Florida State University)

Shell Heaps as Indicators of Resource Management

The Neolithic Revolution of the 9th millennium BC marks the period when forager groups independently experimented with the management and, in some instances, the domestication of terrestrial plants and animals. However, global evidence for human consumption and management of gastropods predates the Neolithic Revolution, indicating that terrestrial and aquatic snails were an important resource for human societies during the Holocene. Abundant deposits of aquatic snails are reported from archaeological sites in Mesoamerica, Japan, and China, while the consumption of land snails is well-documented in the Iberian Peninsula, the circum-Mediterranean area, Africa, and North and South America. These studies show the temporal depth and spatial breadth of human’s knowledge of, and interaction with, gastropods. Along the interior waterways of the American Southeast, accumulations of freshwater gastropods appear in archaeological sites during the pan-regional culture phase of the Shell Mound Archaic, from approximately 7000 to 1000 cal BC. Using data from zooarchaeology, geoarchaeology, invertebrate zoology, and taphonomy, we show that the
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anthropogenically induced freshwater gastropod deposits along the Cumberland River in the American Southeast comprise the oldest documented occurrence of freshwater aquaculture in the Americas, ca. 5300 cal BC. [102] Chair

Peres, Tanya [102] see Brady, Ashley

Peresolak, Katherine (McCormick Taylor) [334] Partnerships for Heritage Stewardship

The objective of my Master’s thesis was to formulate a study of the Carroll Cabin and farm, a historic log house located in Fayette County, Pennsylvania on Department of Conservation and Natural Resources (DCNR) land. My research focused on how archaeological and historical records could be used to answer questions about the farm’s extant home and the property’s history. In Pennsylvania and other states (and at the federal level) multi-use public land managers are responsible for similar structures and the associated archaeological sites. These resources are often located in remote areas with little or no associated primary records, which means there is no construction date available to assist with resource management and a significance assessment. Dendrochronology, or tree-ring dating, is an affordable and effective methodology that has the potential to date log buildings or structures whether primary records exist or not. Partnership research using such technology is not only beneficial to the story of Pennsylvania and the region, it is also important for promoting heritage stewardship on public land.

Pérez, Daniel and Karen Harry (University of Nevada, Las Vegas) [164] House 47: A Case Study of Abandonment and Trade in the Lowland Virgin Branch Puebloan Region

Considerations of chronology, chronometry, and systemic contexts of archaeological sites in the American Southwest have primarily focused among the larger prehistoric cultural centers (e.g., Hohokam) throughout the history of archaeological research in this region. Research pursuits beyond the southern and eastern regions of the American Southwest—particularly within the Virgin Branch Puebloan cultural region—have not been pursued accordingly for various reasons. Seminal work by Margaret Lyneis (University of Nevada, Las Vegas) in the lowland Virgin Branch Puebloan (VBP) region, among other scholars, provide the context for the present study in which a fuller understanding of the prehistory of the VBP region is sought. House 47, an archaeological site in the lowland VBP dating to the early Pueblo III period, likely represents one of the final occupations prior to abandonment of the lowland region. This paper considers both the unusually large size of House 47 (comprising more than 100 houses) and what recent excavations at the site suggest regarding abandonment of the region and related impacts on trade networks during the Pueblo III period.

Pérez, Erina, Thomas Banghart (University of Santa Cruz), Hope Loiselle (University of Maryland) and Kevin Gibbons (University of Maryland) [195] At the Intersection of Academia and Activism: Using the Historical Ecology Framework toward the Conservation and Restoration of Natural and Cultural Heritage

Historical ecology has become one of the most relevant research paradigms in understanding the long-term relationships between humans and their environments. Its multidisciplinary approach dissolves the boundaries between the social and natural sciences to bring together disciplines such as archaeology, ecology, biology, anthropology, ethnohistory, and geography toward the conservation and restoration of natural and cultural heritage. This paper specifically explores archaeology’s unique position within the framework of historical ecology and raises questions regarding its role in contemporary public policy discussions. Archaeological data are invaluable assets in addressing current environmental issues, establishing baselines for natural resource management strategies, and providing insight into long-term human-environment interactions. Concurrently, scholars and academics, traditionally avowedly apolitical, are increasingly redefining the intersection of being an academic and an activist. We bring attention to the community of scholars who engage with historical ecology and present the case for a historical ecology interest group within the Society for American Archaeology. To do this, we present case studies that explore how the historical ecology framework is being used in various contexts to inform and influence management of both natural and cultural heritage.

Pérez, Jan (University of Puerto Rico, Río Piedras Campus) and Paola Schiappacasse (University of Puerto Rico, Río Piedras Campus) [57] Recreating the Late 19th Century Urban Landscape of Puerta de Tierra, San Juan, Puerto Rico

Throughout the 19th century, the Spanish colonial capital of Puerto Rico, San Juan, underwent an expansion outside its city walls. Puerta de Tierra, a neighborhood located east of the walls, registered a steady growth between the 1870s and 1890s. Through the use of primary documents such as maps, construction permit requests, blue prints, and historical photographs it is possible to reconstruct part of this urban landscape. This information in combination with census records can also help to identify the characteristics of this working class sector of the city of San Juan, as well as the material culture that could be found in the event of archaeological excavations were to be conducted in these houses.

Pérez Antonio, Mariela [293] see Fash, William

Pérez Calderón, Ismael (Universidad Nacional de San Cristóbal de Huamanga) [300] Lluvias que ocurrieron en el pasado prehistórico del valle de Huamanga en Ayacucho, Perú

El registro arqueológico muestra que durante el pasado prehistórico en el valle de Ayacucho, ocurrieron diferentes lluvias que no solo inundaron y sepultaron aldeas, templos y otros monumentos, sino que testimonian los cambios drásticos sucedidos en el desarrollo de las culturas. Como en el caso de la Costa, se vieron afectadas por el fenómeno “El Niño” o ENSO, y lluvias torrenciales que produjeron huaycos y sequias en la región interandina y en otras partes del mundo. Desde los lo menos el precerámico tardío, con mayor énfasis en entre los 1500 a.C. a 1200 d.C, tal como indican la sedimentación y restos culturales asociados a pisos y rellenos en la estratigrafía de los sitios arqueológicos de Waychaupampa, La Compañía, Conchopata, Muyo Orpo y la misma ciudad de Huari como parte del factor natural que debió influir en la remodelación y modificaciones de algunos edificios, y posible abandono de asentamientos en la cuenca del río Huarpua, Sierra sur de los Andes centrales.

Pérez Calderón, Ismael [300] see Isbell, William

Pérez Cubas, Kelita [46] see Osborn, Jo

Pérez Cubas, Kelita [240] see Penfil, Rachael

Pérez Robles, Edwin [163] see Doyle, James
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Perez Rodriguez, Veronica (University at Albany, SUNY) and Corina Kellner (Northern Arizona University)

[25]  *Infancy and Breastfeeding at Cerro Jazmín: Isotopic Data from a Late-Terminal Formative Population in the Mixteca Alta, Oaxaca*

We present isotopic results from 25 adults and children from Cerro Jazmín. Bone collagen (n=17) and bone and enamel apatite (n=21) isotopic data provide C, N, and O values describing diet and breastfeeding patterns. Carbon values suggest a narrow diet heavily based on maize and little animal protein. Individuals between 0–3 years of age had significantly higher nitrogen and oxygen values than adults, suggesting that these infants may have still been breast feeding at the time of death. Weaning likely occurred between 3–6 years of age when C3 foods, perhaps squash, were introduced in the weaning diet. By 6 years of age isotopic values matched those of adults. Alternatively, since the subadults in the sample are those who did not survive into adulthood, their elevated nitrogen and more negative carbon values may be attributed to severe stress prior to death. Therefore, we also consider the proportion of adults versus subadults recovered from different periods of occupation at Cerro Jazmín as well as pathological and traumatic lesions to discuss broader patterns of infant health and mortality.

Perez Zambrano, Enrique [230] see Halperin, Christina

Perez-Juez, Amalia (Boston University), Ricardo Elia (Boston University) and Meredith Langlitz (Archaeological Institute of America and Boston Uni)

[222]  *Students Discover Heritage: Lessons from the Field Boston University Field School in Archaeological Heritage Management (Menorca-Spain)*

Boston University’s field school in Menorca, Spain, started 17 years ago as a traditional field school experience. Over the years, we incorporated the study of archaeological heritage management—both theoretical and practical—as an integral part of the curriculum. In the last decade, the increasing number of students interested in cultural heritage management inspired us to move to a heritage management-only field school. This poster will present the results of our first season. Menorca is a UNESCO biosphere reserve and candidate for World Heritage status. Menorca preserves archaeological and cultural sites from every period of its history, ranging from megalithic Bronze/Iron Age settlements to the remains of the Spanish Civil War. The island’s rich cultural legacy, together with its impressive and diverse natural settings, makes it an outstanding laboratory for studying heritage management. During the field school we introduced students to the principles and practice of archaeological stewardship: preservation, interpretation, management, and public outreach. There is nothing more eye-opening than learning this in situ: at sites, museums, and throughout the landscape. A student project researched links between the US and Menorca. From Admiral Farragut to the Second World War, students discovered a fascinating common past worth safeguarding for the future.

Perkins, Leslie and Travis Stanton (University of California Riverside)

[238]  *Light Detection and Ranging (LiDAR) of San Gervasio, Isla Cozumel, Quintana Roo, Mexico*

The use of Light Detection and Ranging (LiDAR) in Mesoamerican archaeological research been steadily increasing. Building on this knowledge, LiDAR was conducted during the summer of 2017 over a 6km² area of the prehispanic site of San Gervasio, Isla Cozumel, Quintana Roo, Yucatan, Mexico. This was part of a larger survey and mapping project conducted by the Proyecto de Interacción Política del Centro de Yucatán (PIPCY) spearheaded by Dr. Travis Stanton.

The proposed poster will discuss LiDAR imagery of San Gervasio, Cozumel along with overlays of excavations done during the Spring of 2017, which focused primarily on ossuary structures located just outside of the site center. Here I will be presenting preliminary findings of the mapping project at San Gervasio and discussing how the newly acquired LiDAR matches with what has been ground truthed through traditional survey methods, and what future research is on the horizon with the aid of this new data.

Perkins, Stephen M. [268] see Trabert, Sarah

Perla-Barrera, Divina [80] see Hiquet, Julien

Peros, Matthew (Bishop’s University)

[171]  *Hurricanes as Agents of Cultural Change: Integrating Paleotempestology and the Archaeological Record*

Hurricanes are major climatological events with significant impacts in tropical and extra-tropical regions worldwide. Despite this, little research has been undertaken on the effects of hurricanes and other intense storms on prehistoric societies. New evidence from the field of paleotempestology—the study of past hurricane activity using geological proxy techniques, such as lagoon sediments and speleothems—is shedding light on how hurricanes varied and evaluate the ways that human responses to hurricane activity can be identified in the archaeological record at different spatial and temporal scales, including house and dwelling architecture, to the planning of settlements in protected areas, to regional-scale migration and demographic change.

Perreault, Charles [227] see Paige, Jonathan

Perrelli, Douglas [22] see Snyder, Daniel

Perri, Angela (Max Planck Institute for Evolutionary Anthropology)

[212]  *New Evidence of the Earliest Domestic Dogs in the Americas*

While the arrival of domesticated dogs with an initial human migration has been the most reasonable explanation for their presence in the Americas, evidence for Paleoindian dogs has proven elusive. Here, we present the identification and direct radiocarbon dating of an isolated dog burial from Stilwell II, an Early Archaic site in the Lower Illinois River Valley. We also present new direct radiocarbon dates for two dogs from the nearby Archaic Koster site. These dates confirm that the Stilwell II and Koster dogs represent the earliest directly-dated evidence for domesticated dogs in the Americas and the oldest intentional burials of individual dogs known in the worldwide archaeological record. The appearance of the earliest domesticated dogs in the Midwest around 10,000 years ago presents a conundrum both temporally and spatially. If dogs arrived with the first migrating human groups, the earliest dog remains should appear in northern and western North America during the Paleoindian period.

[212]  *Chair*

Perri, Angela [212] see Larson, Greger

Perrone, Alexandra [179] see Milligan, Colleen
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Perrotti, Angelina (Texas A&M University)

[290] Non-pollen Palynomorphs Reveal Environmental Fluctuations in the Terminal Pleistocene Southeastern United States

Paleobotanists and palynologists must be able to identify various types of plant remains from archaeological sites. Because of the difficulty of becoming familiar with the vast array of microfossils found in a typical pollen sample, non-pollen palynomorphs (such as fungal spores) are often overlooked in traditional palynological analyses. However, they can be indicators of various environmental changes, such as fluctuations in plant and animal communities, erosion and fire events. This paper demonstrates the utility of fungal spores as paleoenvironmental proxies at two submerged sites in the Southeastern United States: Page-Ladson, Florida and White Pond, South Carolina. Non-pollen palynomorph assemblages at these sites provide evidence of considerable disturbances to vegetation, including fires, grazing and browsing regimes, and periods of erosion. Of particular interest are the coprophilous fungal spores, which indicate a decline in megaherbivores at both sites by ~12,600 cal BP. The information provided by non-pollen palynomorphs can enhance other paleoenvironmental data to further contextualize cultural adaptations of Terminal Pleistocene peoples.

[290] Chair

Perry, Laureen (U.S. Bureau of Reclamation)

[164] Margaret Weide Lyneis—Archaeologist, Professor, Mentor, Student, and Friend

Dr. Margaret Lyneis had a long career as an archaeological researcher, preservationist, and scholar, starting with field research in the 1960s when few women were in the field and as a professor at the University of Nevada, Las Vegas. Early research was in the Warner Valley of Oregon, in California, and in the Great Basin. As she focused her research on Far Western Puebloans, Dr. Lyneis became the expert on their early occupation of southern Nevada and the Virgin Region. Her influence on the world of archaeology extends far beyond that research as her students and colleagues continue applying her approaches, professionalism, and passion to other archaeological topics, careers, and advocacy. This symposium barely touches the extent of Margaret Lyneis’ influence on archaeology.

Person, Dylan (University of Nevada, Las Vegas)

[186] Rocky Refuse or Useful Utensil?

What is the value of an expedient lithic tool? By what standard is its performance judged? Analysis of lithicdebitage has long focused on morphological characteristics of flakes to determine fracture mechanics and other technological aspects of the flintknapping process. As such, most lithic flake termination types are seen as the result of misdirected force as opposed to techniques producing a mechanistically ideal flake type. What does this mean for past humans who did not follow the analytical approach employed by contemporary archaeologists? Could these flakes have been useful for past activities.

Persons, A. Brooke [63] see Gordon, Falcia

Pestle, William [323] see Laffoon, Jason

Peter, Damgaard [143] see Lynnerup, Niels

Peters, Ann (University of Pennsylvania Museum)


Improving documentation of artifact assemblages in the funerary contexts of the Necropolis of Wari Kayan (Paracas site, south coast of the Central Andes) leads to identification of multiple contemporary textile styles as well as their transformation over the period of cemetery use (c. 250 BCE to 250 CE). While artifact variability in the region has largely been organized in hypothetical phases, expanded data on garment design and production details, as well as imagery, is most usefully organized and correlated using a formal typology. While social diversity may account for a larger percentage of formal varieties than has been considered under the phase model, hypothetical temporal sequences among garment styles imply processes of adoption and syncretism. While to date we cannot document the geographic loci of garment production, correlations between characteristics of plant and animal fibers, natural and dyed colors and particular style groups suggest a vertical organization of production and exchange that ranged from agricultural selection and herd management practices to the contribution of a finished textile to a particular mortuary rite. Artifact forms and component materials support a model of sociopolitical relationships linking diverse communities of practice, whose presence, prominence and self-definitions change over time.

[141] Chair

Peters, Mallory (California State University, Chico), Jessica Curry (California State University, Chico) and Eric Bartelink (California State University, Chico)

[179] Analysis of Anatomical Dissection at Point San Jose Hospital, Fort Mason, San Francisco

During a 2010 National Park Service project to remove lead contaminated soils from behind a historic hospital at Point San Jose (now Fort Mason), San Francisco, a medical waste pit containing commingled human and faunal remains was discovered. From 1864–1903, several military surgeons were posted at the Point San Jose Hospital to treat military personnel.

Analysis of the human remains revealed evidence of anatomical dissection indicated by numerous incised cut marks, saw cut marks, and other postmortem modifications. The incised cut marks and saw cut marks have significant implications for interpreting the purpose of the Point San Jose skeletal material. The presence of saw marks through many skeletal elements signified that the remains were likely used for a variety of purposes. Possible indicators that the skeletons were used for autopsies include saw marks through the skull and sternum. The presence of both incised cut marks and saw marks on other elements suggested removal of soft tissue and were indications of dissection or prospection performed during anatomical teaching, training, or research.

Peterson, John (University of Guam)


Nan Madol monument in Pohnpei in the Federated States of Micronesia was inscribed on the World Heritage list in July 2016. The same day it was listed on the Endangered List for World Heritage sites by the Committee. The designation was meant to insist on the seriousness of conservation and
management planning and it has had a profound impact. A Conservation Plan has been launched, supported in part by UNESCO, and fine-grained monitoring with geocounters, 3-D mapping, UAV structure-in-motion models, Synthetic Aperture Radar imaging, and detailed descriptions and monitoring for each islet have been initiated. Governance policy in the FSM, Pohnpei, and the Nahnmul of Madiolinhm is being reviewed for sustainable preservation and management. Monitoring for site impacts also supports observations of sea level rise, storm surge, erosion and siltation, and subsidence around the site. Nan Madol’s conservation management is a watch on the effects of climate change as well as ongoing environmental observations for the site.

Peterson, Polly [134] see Nation, Humberto

Petraglia, Michael [329] Acheulean Hominins and Out of Africa Dispersals: Challenges and Advances
The dispersal of Acheulean hominins outside of Africa is one of the most important research areas in human evolutionary studies, having been the topic of paleoanthropologists and archaeologists for many decades. Yet, precise knowledge about the timing and geographic movement of archaic hominins across Eurasia is still in its infancy. The aim of this presentation is to discuss what we currently know about the distribution of Acheulean hominins, and to report on new field work findings in southern Asia, particularly in the Indian subcontinent and the Arabian peninsula. We examine technological trends and present new information on the dating of archaeological sites. We examine the role that climate change plays in the demographic history of Acheulean hominins and whether there is temporal overlap of archaic species and advancing groups of Homo sapiens populations. We address long-standing questions about whether Acheulean tool-making hominins moved into Eastern Asia, and the implications of this information with respect to our evolutionary history.

Petraglia, Michael [310] see Nayak, Ayushi

Petrie, Cameron (University of Cambridge), Adam Green (University of Cambridge), Hector Orengo (University of Cambridge) and Ravindra Singh (Banaras Hindu University) [121] Hidden in Plain Sight: Reconstructing Landscapes of Urbanism in Northwest India
Archaeologists cannot understand the urban process based on investigations at urban centers alone. In the Beas River Landscape and Settlement Survey, Wright contributed greatly to understanding of landscapes in South Asia’s Indus civilization (2600–1900 B.C.), revealing necessity and value of integrating settlement data into broader analyses of urbanism. Research on the Indus civilization’s settlement distributions highlights the presence of an array of archaeological sites spread across a diverse range of environments. This is particularly true in northwest India, a dense locus of settlement before Indus cities emerged and after they declined. It is not clear, however, whether our current knowledge is representative of past settlement distributions or an artifact the early methods and previous assumptions. Fieldwork that combines the analysis of historic maps with remote sensing site monitoring with geocontrols, 3-D mapping, UAV structure-in-motion models, Synthetic Aperture Radar imaging, and detailed descriptions and monitoring for each islet have been initiated. Governance policy in the FSM, Pohnpei, and the Nahnmwarki of Madolenihmw is being reviewed for sustainable preservation and management. Monitoring for site impacts also supports observations of sea level rise, storm surge, erosion and siltation, and subsidence around the site. Nan Madol’s conservation management is a watch on the effects of climate change as well as ongoing environmental observations for the site.

Petraglia, Michael [310] see Nayak, Ayushi

Petropzzo, Michael (The University of Texas at San Antonio), Jason Yaeger (The University of Texas at San Antonio), M. Kathryn Brown (The University of Texas at San Antonio), Kit Nelson (New Orleans Center for Creative Arts) and Rachel Horowitz (Tulane University) [147] De Facto Refuse, Termination Deposits, and Abandonment Processes: Contextualizing the “Problematical”
Archaeologists working in the Maya area frequently find dense deposits of artifacts that are classified ‘terminal deposits,’ ‘final deposits,’ or ‘problematical deposits’. These classifications may accurately reflect a deposit’s stratigraphic placement, but ultimately mask or even misrepresent the diverse social behaviors which led to the creation of such deposits. Excavations in the courtyard in front of Structure B-6 at Xunantunich, Belize, exposed a dense deposit of artifacts. Through detailed analysis and recovery of the artifacts and ecofacts and an emphasis on both recording and analyzing the microstratigraphy, we argue that this deposit was de facto refuse left by people who occupied the group after a period of abandonment. Our analysis more broadly underlines the importance of careful excavation and contextual analysis of these deposits in order to understand the behaviors associated with each one. Such analyses form the basis for the creation of behaviorally distinct categories of final deposits.

Pettitt, Alisa (George Mason University and Fairfax County Park Authority) and Sven Fuhrmann (George Mason University) [331] Educational AR and VR Applications for the Interpretation of Archaeological Sites in Northern Virginia
Virtual reality (VR) and augmented reality (AR) applications can influence the user’s perception of the world. In regards to archaeological sites these technologies can be used as educational tools to recreate past environments and offer interpretive perspectives on history. This research examines several archaeological sites in the Northern Virginia region and investigates how educational VR and AR applications developed through accessible, user-friendly platforms can aid in reconstructing and interpreting cultural resources.

Pettitt, Paul (Durham University, UK) [136] Neanderthal Activities in Caves: Was There a Ritual Dimension?
We know that Neanderthals used the mouths of caves for habitation, and on occasion buried their dead in such contexts. The behavioural repertoire was recently extended to include the assembly of a circle of stones deep in a cave in France. But can any evidence be taken to imply specifically ‘ritual’ behaviour? I build here on ongoing collaborative research on the emergence of art, and on wider Neanderthal activities in caves and their environs to address the question as to whether ‘ritual’ use of caves was specific to Homo sapiens, or shared with our closest sister clade.

Peuramaki-Brown, Meaghan (Athabasca University) and Shawn Morton (Northern Arizona University) [37] Maya Monumental ‘Boom’: Spatial Development, Rank Ordering, and Planning Considerations at Alabama, East-Central Belize
In the 1980s, archaeological investigations by the Point Placencia Archaeological Project (PPAP) noted the rapid, single-phase development of monumental construction at the Maya site of Alabama in the Stann Creek District. Though never fully investigated by PPAP, this rapid, ‘boom-like’ development during the late facet of the Late Classic to Terminal Classic periods is being pursued in current investigations by the Stann Creek Regional Archaeology Project (SCRAP). This presentation, by directors of the SCRAP project, discusses ongoing research at Alabama, particularly the spatial, rank order, and planning analyses being considered as part of epicentre investigations, which we hope will shed additional light on the interesting development processes we believe are occurring in this understudied material culture sub-region of the eastern Maya lowlands known as East-Central Belize.

Peuramaki-Brown, Meaghan [82] see Morton, Shawn

Pevny, Charlotte [81] see Jones, Katherine
Pezzarossi, Guido (Syracuse University) and Kelton Sheridan (UMass-Boston)

[176] Overlapping and Shifting Networks: Comales, Spouses and Other Social/Material Interactions between/within Highands and Coast in Colonial Guatemala

Ceramic assemblages of Postclassic and Colonial Maya sites in highland and coastal Guatemala are dominated by comales: griddle-like cooking vessels indicative of a maize tortilla diet. Given that some archaeologists have interpreted the appearance of the nixtamal/tortilla/comal complex in Guatemala as evidence of the “Mexicanization” of the Maya region, the Pacific coastal region of Guatemala -and its Central Mexican diasporic populations- is seen as the likely source of comales. As a result, comales are useful for tracking the degree/nature of entanglements between coastal and highland populations. Whatever the origin of comales, by the Colonial period, their presence is ubiquitous, despite the fact that documentary sources speak to strained interactions and severed social and economic networks between coastal Pipil and highland Kaqchikel communities. This paper explores coastal and highland interactions prior to and after colonization through the comparative Instrumental Neutron Activation Analysis (INAA) of comales at the Pacific piedmont Kaqchikel Maya site of San Pedro Agucatepeque and Guatemalan coastal sites. We also draw on Colonial censuses, other archival sources and ethnoarchaeological research as additional lines of evidence that help reconstruct the dynamic, varied and overlapping social and material networks between and within coast and highlands in Postclassic and Colonial Guatemala.

Pfau, Justin (University of Montana), Scott Gajewski (GAI Consultants-Assistant Field Director), Matt Nelson (University of Montana-Field Director), Cathy Jo Beecher (University of Montana-Crew Chief) and Douglas MacDonald (University of Montana-Professor/Primary Investigator)

[334] Archaeology at Warren Grove Gunnery Range, Pine Barrens, Burlington County, New Jersey

In the winter of 2015–2016 and the spring of 2017, the University of Montana-Center for Integrated Research on the Environment and GAI Consultants (UM-GAI) conducted an archaeological survey and evaluation project at the New Jersey Air National Guard’s Warren Grove Gunnery Range. The project was funded by the Air National Guard through a cooperative agreement with the United States Army Corps of Engineers (Omaha District) and the UM. UM-GAI completed archaeological survey of ca. 9,911 acres of the range. The survey identified and evaluated nine historic/modern sites and one of three previously-reported prehistoric sites. Two sites are recommended NRHP eligible as part of a historic charcoal production complex: UMWG-1 is a probable late 19th century collier’s hut with ceramics and associated charcoal production features, and UMWG-9 is a nearby set of at least eight charcoal kilns and possible associated transportation features. UM-GAI is participating in public outreach programs including schools and conferences as well as updating the GIS archaeological predictive models for the range and region.

Pfeiffer, John [217] see Sharpe, Ashley

Phelps, Danielle (University of Arizona)

[40] Escaping from the Tomb: A Spatial Analysis of Possible Escape Routes in the Valley of the Kings, Egypt

Howard Carter discovered the relatively intact tomb of Tutankhamun (KV 62), one of the last kings of the Eighteenth Dynasty of Egypt, in the Valley of the Kings in 1922. Prior to the discovery, Carter discovered several small artifacts in the cliffs above the valley’s floor, which he proclaimed were indicators of a possible escape route of the ancient tomb raiders from the Valley of the Kings. During the excavation of the tomb, Carter also claimed to have identified two distinct robberies that most likely occurred with a few years of the initial interment. Other scholars have debated this assertion. A spatial analysis of the Valley the Kings will provide insight into this debate. This paper will investigate the possible routes ancient robbers may have taken while escaping from the tomb of Tutankhamun through the utilization of Geographical Information System (GIS) analyses including viewshed and least cost pathways. The most efficient route out of the valley will determine if Carter’s initial claim of finding dropped artifacts from the tomb was in correct or not.

Phillips, Emily (University of Cincinnati), Jonathan Reeves (George Washington University), Matthew Douglass (University of Nebraska-Lincoln) and David Braun (George Washington University)

[99] Taphonomic Comparisons of Stone Tool Transport: Surface vs. Excavated Collections

It has been argued that surface assemblages may provide insights into questions regarding large scale patterns of human behavior such as mobility and stone tool transport. However, excavated material is often preferred over surface assemblages due to concerns of potential biases introduced by the process of exposure. Here, we examine this claim by comparing measures of stone tool transport between surface and excavated assemblages. Surface and excavated lithic assemblages were collected from the similar locations in East Turkana, Kenya. Size distributions of each assemblage were compared to determine differences that may be introduced by taphonomic bias. Measures of cortex, volume, and stone tool reduction were then applied to each assemblage to determine influence of lateral placement on proxies of stone tool transport. Preliminary results suggest that, despite gross differences in size distributions between the two assemblages, signatures of stone tool transport preserved in excavated assemblages are also reflected in surface assemblages. This is dependent on the measures of transport that are investigated. A discussion of the preliminary results and the efficacy of various measures of stone tool transport is reviewed.

Phillips, Laura

[253] Repository Reflections: Where’s the Humanity?

As the neutral repository appointed by the court, the Burke Museum has played a unique and often frustrating role as temporary caretaker of the Ancient One/Kennewick Man. Decisions on overall curation, research and access resided with the US Army Corps of Engineers, yet the Burke provided the environment, security, and safety. Museum standards of access and care are not straightforward, and staff tried to balance ideas of neutrality and bioethics with real people and their needs. The Ancient One lived thousands of years in the past, yet he is now deeply rooted in the present. His journey has highlighted some key bioethical issues of our time—in particular, how we understand what constitutes a human being, and how that understanding shapes the tracking of research and analysis.

Phillips, Lori (Washington State University), Erin Thornton (Washington State University) and Eleanor Harrison-Buck (University of New Hampshire)

[7] Understanding Animal Use at the Wetland Maya Site of Chulub

Reconstructions of ancient Maya animal use often emphasize the importance of terrestrial species, such as deer, to the overall diet. While these species played an important role, much less attention has been paid to the use of aquatic resources despite the presence of resource rich perennial wetlands in the Maya lowlands. To further understand this crucial area of the Maya-environment relationship, we investigated the site of Chulub located in the Western Lagoon Wetlands of Belize. This site dates to the Classic-Postclassic transition (ca. AD 800–1200) and contains only one formal plaza, but it includes numerous outlying structures associated with a series of artificial pond and canal features. During the 2017 season, we tested one of these structures and performed a series of test pits targeting midden deposits in the main plaza. The preliminary zooarchaeological results presented here suggest terrestrial and aquatic species, particularly freshwater turtles, were important components in the overall subsistence of Chulub inhabitants. The presence of ceramic net weights further corroborates the importance of aquatic species, possibly raised and farmed in the nearby ponds. These preliminary results highlight the importance of aquatic resources within Maya subsistence and support the need for further research within this understudied area.
Phon, Kaseka [175] see Hendrickson, Mitch
Phyo Kyaw, Pyiet [56] see Iannone, Gyles
Picard, Taylor (Humboldt State University) and Evan Giomi (Archaeology Southwest) [91] Analysis of Settlement Patterns near the Big Burro Mountains
This poster presents the results of an archaeological survey of Pitchfork Ranch, located near the Big Burro Mountains in southeastern New Mexico. The survey was conducted by staff and students of the Archaeology Southwest Upper Gila Preservation Archaeology (UGPA) field school from 2015 to 2017. There is evidence on the ranch of human activity ranging from possible Paleolithic and early Archaic sites up to 20th century sites. Using GIS and geospatial data collected during this survey it is possible to examine the extent of human occupation on the ranch and analyze changes over time in settlement patterns and land use in the region. The Pitchfork Ranch is the location of the Burro Creek Cienaga, and the data from this survey is useful for understanding human use of this rare environment and hydrological resource. Additionally, the survey data could help develop a better understanding of Mimbres-culture sites outside the Mimbres Valley and Upper Gila.

Picciuolo, Jon [214] see Ryan, Christopher
Pickett, Jordan (FSU Classics) [171] Earthquakes as Nonhuman Agents in the Roman—Late Antique Mediterranean
Recent studies of the sociology of contemporary earthquakes have emphasized the generative physical spaces of potentiality created by these disasters: the destruction of earthquakes, while traumatic for survivors, also clears the way for large-scale infrastructural and architectural development programs that can re-shape aged urban environments to better reflect changing societal values and priorities. This paper offers a survey of earthquakes as non-human change agents in the Roman and Late Antique Mediterranean, with especial focus on the cities of Ephesus, Antioch, and Phrygian Hierapolis. While contemporary Roman sources tend not to describe urban rebuilding after earthquakes in a symbolic manner with a generic picture of cities “rebuilt” (ἀνοικοδομίσθαι) or “restored” (ἀνενέοθι) with state-directed support in coin or labor, these literary images rarely correspond with the archaeological evidence. Rather, earthquake events in Roman cities provided opportunities for adaptation and the implementation of new planning schemes.

Pierce, Daniel (University of Missouri Research Reactor), Patti Wright (University of Missouri—St. Louis) and Rachel S. Popelka-Filcoff (Flinders University) [9] Seeing Red: An Analysis of Archaeological Ochre in East Central Missouri
The Truman Road Site (23SC924), St. Charles County, Missouri, features a diversity of material remains and a long periods of occupation mostly occurring during the Late Archaic (3000—2500 BC) and Middle Woodland (100 BC—AD 500). For this region of prehistoric Missouri, ceramics and chert constitute the main evidence for understanding trade and cultural dynamics. Despite its relative ubiquity among sites, ochre has rarely been considered in such studies. Recognizing that this material is a valuable component of material culture, we used NAA to analyze a collection of ochre from the Truman Road site (n=31) and seven specimens total from four other nearby sites. Results indicate no significant temporal or spatial patterning of ochre usage or acquisition in the total sample. Similarly, no correlation exists between the chemistry and artifact type. Finally, the assemblage is compositionally distinct from previously analyzed samples from elsewhere in region. Precise provenance has yet to be conclusively determined due to the dearth of comparative data in Missouri. Although these artifacts could not be linked to a single acquisition locale, the results remain an important addition to our understanding of the characterization and diversity of ochre and its usage in prehistoric Missouri.

Pierce, Daniel [31] see Xiuhetcultli, Nezahualcoyotl
Pierce, Karen (Pacbitun Regional Archaeological Project) and Mike Lawrence (Pacbitun Regional Archaeological Project) [256] Recent Building Excavations in the Triple-Courtyard “Palace” Group at the Ancient Maya Site of Pacbitun, Belize
Adjacent to Plaza B at Pacbitun is a Classic Period “palace” complex consisting of three conjoined courtyards each ringed by elevated range structures, likely serving elite-residential and administrative functions. Previous excavations indicated initial construction in the Early Classic period with numerous indications made in the Late Classic, and preliminary evidence of occupation in the Terminal Classic period. The Pacbitun Regional Archaeological Project has begun to explore this palace complex to gain a better understanding of its architectural chronology and function in order to broaden our knowledge regarding the sociopolitical and economic changes taking place at Pacbitun during the Late to Terminal Classic period. At Structure 23 (Courtyard 2), 2017 excavations built upon earlier work to further explore a slate workshop/storage area and modifications restricting courtyard access. At Structures 22 and 33 preliminary excavations exposed portions of two Late Classic buildings enclosing a small courtyard atop a platform situated above Courtyard 3. Here we discuss the results of our excavations within the broader framework of Late to Terminal Classic changes in the Maya Lowlands and touch upon numerous questions generated regarding chronology, workshops, production control, building function, access restriction, and the roles of the three different courtyard groups.

Pietrusewsky, Michael [20] see Ikehara-Quebral, Rona
Pigott, Michelle (Tulane University) [255] It’s Not in the Ceramics: 18th Century Apalachee Cultural and Ethnic Identity
Archaeologists have always made use of ever-abundant ceramic materials as markers for cultural and ethnic identity of past peoples. This works distinctly on the assumption that these identities and their linked ceramic traditions are stable and unchanging; ceramics that do not fit into the expected pattern are often explained away as trade items or the arrival of new ethnic groups. This paper instead argues that ceramics reflect the sequence of ceramic manufacture generated by individual potters whose behaviors reinforce a community of practice, open to change over time through innovation and interaction. A series of detailed ceramic analysis methods were developed to interpret data from four related 17th and 18th century sites, tracking the diaspora and culture change of the Apalachee, a Native American group originally from Northern Florida. In the case of examining the ceramics of post-diaspora Apalachee, these assemblages allow an in-depth study of ceramic practice with the unique advantage of also having substantial historic documents identifying the potters’ ethnic identity. With this knowledge, this paper attempts to divorce the unchallenged connection between ceramics and ethnicity and instead encourage interpreting ceramics as a vehicle for culture change.

Pigott, Michelle [275] see Rodning, Christopher
Pike, Scott (Willamette University) [298] Sourcing Building Stones in the Ancient Mediterranean: A Review of 25 Years of Provenance Research at the Wiener Laboratory
From its very inception, the Wiener Laboratory at the American School of Classical Studies in Athens has fostered and supported the integration of geological techniques and methodologies into archaeological research programs in the eastern Mediterranean Basin. One such area of focus includes...
provenance studies of rocks used in architectural and sculptural programs spanning from the prehistoric to Late Antiquity. By tracing the source
quarries of ancient artifacts and features, archaeologists gain insights into the economics of trade of a valuable resource; changing aesthetic values;
and the identification of modern forgeries, ancient copies and disassociated fragments. This summary paper will review just some of the archaeological
contributions of rock provenance research sponsored by the Wiener Lab including a study of calcarenite quarries exploited in the Late Bronze Age of
Minoan Crete, a study of olitic limestone quarries within the archaeological complex of ancient Corinth, and a study that identifies the source quarries
used to extract marble for the Parthenon and other monuments atop the Athenian acropolis.

Pillies, Peter [48] see Neff, Linda

Pillsbury, Joanne (The Metropolitan Museum of Art)

With the return of peace after the dislocations of the US Civil War, The Metropolitan Museum of Art was founded in 1870 by businessmen, civic
leaders, and artists in New York. Unlike its European counterparts, the institution had no royal collections on which to build. Its ancient American
holdings grew through gifts and purchases from diplomats, philanthropists, and collectors. By 1900, with the acquisition of the Petich Collection of
some 1500 “Aztec,” and “Toltec” works, The American Archaeologist hailed the Met’s holdings as second only to Mexico City. Yet by 1914, the
Museum had turned away from American antiquities, redefining not only itself but also what was considered the appropriate aesthetic purview of an
art museum for decades. This paper considers the civic, national, and scholarly currents affecting the collection of ancient American art in the Gilded Age.

Pimentel, Roberto [211] see Makowski, Krzysztof

Pinta, Elie (PhD Candidate—Université Paris 1 Panthéon-Sorbonne / UMR 8096)

[277] Moderator

Pintar, Elizabeth (Austin Comm. College) and Maria Fernanda Rodriguez (CONICET-INAPL)

[174] 12,500 Years of Altitude
The earliest occupations in the Salt Puna—a high elevation desert in the Andes Mountains—date to the Pleistocene-Holocene boundary and are
relevant to the discussion of the timing of the first exploration and colonization of South American elevations above 3500m, as well as the relationship
between mountain environments and other ecological areas. The wooden shafts used in the extractive technologies of the earliest hunter-gatherers
originated outside the Puna, in the eastern lowlands. However, the sources of obsidian used for manufacturing projectile points were located at high
altitudes in the Puna, between 4000m and 4500m, revealing the existence of adaptations to very high elevations a few millennia after the initial
peopling of South America. The implications of these data are broad, as they suggest that early hunter-gatherer groups inhabiting these very high
elevations were using resources from far afield and had a good knowledge of the local and regional landscape that extended into adjacent ecological
zones located several hundred kilometers away—a familiarity that would have taken several hundred to a few thousand years to develop and possibly
enabled them to associate with and rely on neighbors in times of need.

Piperno, Dolores (Smithsonian National Museum of Natural History)

[137] The Past (and Future?) of Our Crop Plants in Changing Global Environments
The development of agricultural societies, one of the most transformative events in human and ecological history, began independently in a number of
world regions including the American tropics during a period of profound environmental change at the Pleistocene-Holocene transition. Plant
domestication is at its core an evolutionary process involving both natural and human selection for traits favorable for harvesting and consumption.
Scientists from a number of disciplines have long sought to understand the process of crop plant evolution, but still must rely on imperfect
morphological and genetic data based on characteristics of living representatives of crops and wild progenitors in the modern climate, and limited
archaeobotanical evidence. Experimental research on living crops and their wild ancestors together with recently developed molecular applications are
providing new understandings of, and mechanisms for, domestication and early agriculture. They include phenotypic (developmental) plasticity, a
subject of rising importance in evolutionary biology and an oft-neglected concept in domestication research. This talk will discuss multi-year
investigations of phenotypic, productivity, and gene expression changes in teosinte and maize when grown under atmoospheric CO2 and temperature
conditions that characterized the Late Pleistocene and early Holocene periods, when teosinte was first collected, cultivated, and transformed into
maize.

[290] Discussant

Piscitelli, Matthew (The Field Museum)

[64] The Extraordinary Case of the Late Preceramic Norte Chico
The Late Preceramic Period was a time of dramatic cultural transformations in the Central Andes. At the beginning of the 3rd millennium B.C., at least
30 large, sedentary agricultural settlements with monumental architecture appeared between the Huaura and Fortaleza river valleys in a region known
locally as the “Norte Chico” (“Little North”). Since the publication of Moseley’s The Foundations of Maritime Civilizations (1975), the north central coast
of Peru has been viewed as an exceptional case in global prehistory. Although this precocious development has been a subject of study since that
time, research has focused almost exclusively at the site-level. Such a narrow focus has obscured the analytical value of the Norte Chico region as a
regional phenomenon. By adopting a broader perspective, I will demonstrate what the Late Preceramic cultural landscape of the Norte Chico region
can tell us about social interaction, power relations, and cultural complexity.

[283] Chair

Piscitelli, Matthew [100] see Bauer, Brian

Pitblado, Bonnie (University of Oklahoma)

[79] Dr. Dennis J. Stanford: A Legacy of Research in Colorado Paleoindian Archaeology
I began my graduate studies in 1990, knowing I wanted to learn about the earliest human use of the Colorado Rocky Mountains. It became immediately
clear that two decades of work by Dennis Stanford, much conducted with his research- and life-partner Pegi Jodry, contributed myriad bricks to the
platform upon which I would construct my own body of work. Stanford’s research at early sites in Colorado spanned the chronological spectrum, from
potentially pre-Clovis (Lamb Spring, Dutton and Selby), to Clovis (the Drake Cache), to Folsom (in the San Luis Valley), to Hell Gap (Jones-Miller), and a study that identifies the source quarries used to extract marble for the Parthenon and other monuments atop the Athenian acropolis.

[174] Discussant
Pittman, Holly (University of Pennsylvania)

[121] **Textile Production in the Uruk Period: New Insights from Glyptic Imagery**

Production of textiles rose to an industrial level in the late Uruk period of southern Mesopotamia. Iconographic sources found in glyptic art provide a detailed visual description of aspects of this industry. Gender differentiation is clearly institutionalized, with women preparing the thread and skeins while males are engaged in the actual weaving. This paper presents a close analysis of a single motif in the glyptic iconography, offering an explanation of what has previously been identified as a “spider” motif. Rather than an abstract reference to the production of thread in nature, it is argued that the image is rather a device, a “machine” that was employed to store thread before it was deployed into skeins.

Plunkett, Patricia [262] see Uruñuela, Gabriela

Podrug, Emil [310] see McClure, Sarah

Pohl, John M. D. [264] see Zborover, Danny

Plunkhahn, Thomas (University South Florida), Kendal Jackson (University of South Florida) and C. Trevor Duke (University of Florida)

[84] **In Small Organisms Forgotten: Micro-fauna from Shell Middens at Crystal River (8CI1) and Roberts Island (8CI41) as Potential Proxies for Paleo-climate**

Crystal River (8CI1) and Roberts Island (8CI41) are neighboring mound and village complexes on the central Gulf Coast of Florida, occupied mainly sequentially across the first millennium AD. Stratigraphic excavations, coupled with extensive radiocarbon dating, permit relatively fine-grained observations regarding the prevalence of fauna over time. Oyster dominates faunal remains from all periods, but higher relative frequencies of small gastropods are evident in Midden Phases 2 and 4. Sponge spicules document a similar pattern. We associate these trends with intervals of warmer and wetter climate, specifically the Roman and Medieval Warm Periods, respectively, as revealed by local pollen samples as well as regional and global climate models. Habitats for small gastropods probably expanded during these intervals, leading to natural increases in species abundance in areas around human habitations, but we suspect the trend may also reflect increased targeting of particular local estuarine resources.

Plunkhahn, Thomas [94] see Gatenbee, Amy

Plumer, Hannah [302] see Justinvil, Delande

Pohl, John M. D. [264] see Zborover, Danny
Poister, Nicholas (University of California, Merced), Lilly Buckley Vargas and Holley Moyes  
[134] Fragmentary Ceramic Assemblages as a Record of Ritual Practice at Las Cuevas, Belize

The most common artifacts found in Maya caves are unslipped and monochrome slipped ceramic sherds. The smashing of ceramic vessels as an element of ritual practice is recorded ethnographically among some twentieth-century Maya groups. Other Maya groups have been documented collecting sherds from domestic middens and depositing them at sacred sites. If caves were venues for the former type of behavior in antiquity, one would expect to find a high percentage of refitting sherds in their assemblages. A lack of consensus exists among scholars as to the prevalence of refitting sherds because these data are rarely provided in reports. The lack of refitting is most acute with unslipped ceramics because, while analysts might spend considerable time attempting to reconstruct a polychrome vessel, few would spend time working with unslipped material. This study seeks new pathways to the decipherment of the cultural processes which led to the formation of ceramic assemblages in Maya caves and is based upon the results of both qualitative and spatial analyses of recently collected data from the Las Cuevas region.

Politis, Gustavo (INCUAPA-CONICET, Argentina), Cristian Favier Dubois (INCUAPA-CONICET, Argentina) and Pablo Messineo (INCUAPA-CONICET, Argentina)  

While most of the South American archaeological sites with extinct megamammals have produced Late Pleistocene ages (12,000 to 10,000 14C years BP), a few locations in the Pampas region have been dated well into the Early Holocene. Among these, Campo Laborde and La Moderna, two kill/scavenging and processing sites in the border of ancient swamps have provided 11 taxon dates (Megatherium americanum and Doedicurus clavicaudatus) which range between 9730 and 6550 14C years BP. Recent excavations in the Campo Laborde site, as well as data from geoarchaeological studies and newly obtained amino acid radiocarbon dates, challenge the hypothesis of the Pleistocene megamammals’ late survival in this region. In this presentation we will discuss new data considering the site formation processes of creek floodplains in the Pampas, in which the Holocene deposits are biased and the pedogenesis was intense. The studies in both locations suggest that the percolation of organic matter form upper layers would contaminate and rejuvenate the dates obtained from bone collagen.

Polk, Michael (Aspen Ridge Consultants)  
[133] Reflections of a Michigan State Graduate’s Career in the American West

I am primarily an eastern archaeologist and studied under Dr. William Lovis as a graduate student from 1976 to 1979. That was early in Bill’s career. I had many mentors in my formative years as an undergraduate and graduate student, as well as early in my archaeological career. Bill was my last academic mentor and the most influential. My training at Michigan State University has influenced my approach to archaeological projects, analysis of site data, and conclusions about such projects. In this paper I describe several projects and experiences in my subsequent work in the Intermountain West as a professional archaeologist where my MSU training and influence was evident and, sometimes, key to decisions and conclusions made.

Pollack, David (Kentucky Archaeological Survey) and A. Gwynn Henderson (Kentucky Archaeological Survey)  
[26] The Middle Ohio Valley Fort Ancient Transformation as Viewed from Fox Farm

Throughout the middle Ohio Valley, archaeologists have documented ca. A.D. 1400 region-wide changes in material culture and settlement patterns that they have characterized as the Madisonville Horizon. Established ca. A.D. 1300, the three hundred year continuous occupation of Fox Farm, located in northern Kentucky, spans the Fort Ancient transformation (A.D. 1375–1425). As the site grew in size during the fourteenth century, the settlement shifted from a circular to clustered arrangement of structures, to accommodate a larger population. This was accompanied by the development of a distinctive ceramic decorative tradition (deeply incised lines and punctations), coarsely serrated triangular points, chipped limestone discs, and decorated sandstone discoids. By the late fourteenth century house size had increased, shifting from single- to multi-family dwellings. Fox Farm’s growth and its establishment as a central place within the Fort Ancient region represents a local response to the volatile cultural landscape of the late fourteenth/early fifteenth century. In this paper, we highlight changes in Fort Ancient material culture and settlement patterns that immediately predate the Madisonville Horizon and consider Fox Farm’s role in the development of an emerging regional Fort Ancient social identity.

Pollard, Helen (Michigan State University)  
[169] Discussant

Pompeani, Katherine (University of Pittsburgh)  
[25] Reevaluating Early Bronze Age Masculinities: Skeletal and Mortuary Analysis of Transgenderism at Ostojićevo, Serbia

The Early Bronze Age (EBA) is often characterized as a period of emerging social hierarchies dominated by high status warrior-males. Analysis of human skeletal remains in their mortuary context has the potential to challenge this assumption and inform more nuanced understandings of gender and social status. Individuals (n=285) at the EBA Maros cemetery at Ostojićevo, Serbia (ca. 1900–1500 B.C.E.) exhibit a strong correlation between biological sex and funerary treatment, specifically body orientation. Among the subset of adult (>18 years-at-death) biological males buried in a “female” orientation, several stand out for either their unique physical characteristics (e.g., tall stature, robusticity), or association with “female” prestige offerings (e.g., copper pins, beaded sashes). The relationship between “masculinity” and social status is further complicated by gendered differences in the social perception and embodiment of physical trauma. While there is an association between trauma, male orientation, and weaponry, most individuals with skeletal evidence of antemortem or perimortem trauma did not receive special funerary treatment. Through the examination of multiple lines of evidence, including grave goods, orientation, and evidence of trauma, this paper argues that transgenderism seems to have been as highly regarded as other elements of traditional “masculine” identities at Ostojićevo.

Ponce, Jocelyne (Tulane University), Erin Patterson (Tulane University) and Clarissa Cagnato (Université Paris 1 Panthéon-Sorbonne)  
[337] From Ritual to Domestic in a Shifting Political Landscape: Excavations in the Coronitas Group at La Corona, Guatemala

Archaeological and epigraphic evidence from the Coronitas Group at La Corona, Guatemala provides an opportunity to examine responses to changing sociopolitical conditions among the Classic Maya (AD 250–900). Architectural and material evidence suggests that the Coronitas Group was a locus of ritual and ceremonial activities by the royal court throughout the Classic period. Burials of important individuals and other ceremonial activities imply that it was a place of significant ancestral ties. At the end of the Classic period, however, material culture and paleoethnobotanical data indicate that this same area became used for subsistence activities for the first time. During this final phase of occupation, inhabitants of this group commemorated a historical narrative as a response to drastic sociopolitical changes.

Poniros, Sarah  
[185] The Bioarchaeology of Diversity: A Case Study in the Roman Empire

This poster presents a new project to explore migration—the geographic movement of people—and diversity—the intersection of different types of people—in imperial Rome. In Bioanthropology, migration is often perceived in oversimplified terms. Researchers seek to determine if an individual or
INDIVIDUAL ABSTRACTS OF THE SAA 83RD ANNUAL MEETING

INDIVIDUAL ABSTRACTS OF THE SAA 83RD ANNUAL MEETING

group migrated, and when in their lifetime this occurred. Furthermore, many scholars treat diversity in equally simplified terms. Traditionally, individuals are assigned to an ancestral population of “best fit,” despite claims that this practice is unreliable. Migration and diversity are complex, intertwined elements of the human experience and must be approached in tandem using multidisciplinary methods.

This poster outlines the methods available to examine past migration and identifies ways to incorporate them with evidence of diversity. Scientific approaches, i.e. biodistance and isotopic analyses, will be combined with cultural approaches, i.e. the study of material goods and funerary accounts of diversity, and literary approaches, which document native Roman and migrant opinions. These methods will be applied to case studies from imperial Rome, which was characterized by diverse communities as a result of frequent conquest and large-scale population movements. The outcome will establish if this integrated approach allows for greater insight into the experiences of migrating and host communities.

Pontbriand, Kate [84] see Blackwood, Emily

Pool, Christopher (University of Kentucky) [262] Formative Communities of Practice and Disjunctures in Southern Gulf Lowland Interaction with Central Mexico

Recently Stoner and Pool called for an “Archaeology of Disjunction” to refocus attention on variation in intra- and interregional interaction, illustrating the approach with the case of the Classic period of the Tuxtla Mountains in southern Veracruz. In this paper I extend application of the disjunctive approach into the Formative Period of the southern Gulf lowlands, focusing primarily on interactions with Central Mexico, and incorporating a Communities of Practice perspective on the formation and disruption of attendant horizon styles. Prominent models of Formative highland-lowland interaction grounded in paradigms of Culture History and World Systems Theory tend to treat the Southern Gulf Lowlands as a unitary entity represented at any point in time by a single pre-eminent Olmec or Epi-Olmec site. Although temporal disruptions in regional settlement systems are widely recognized, economic, political, and stylistic or symbolic interactions are often modeled as a tightly bundled whole. Here I review evidence for significant variation among communities and institutions in the Southern Gulf lowlands with respect to their external relations as a step toward a refined model of interregional interaction in the Formative period.

[192] Discussant

Pool, Michael (Austin Community College) [267] Is There an Early Agricultural Period in the Uplands Mogollon?: Implications of the Chronology at the HO-Bar Site

Obsidian Hydration and conventional radiocarbon dates at the HO-Bar Site range from 900 B.C. to A.D. 750, partially overlapping dates from nearby Mogollon Village. Perhaps more importantly, these dates are comparable to the Early Agricultural and Early Pithouse Period sites from Southwestern New Mexico. An Early Agricultural occupation has not been established in the Upland Mogollon area in the middle Mimbres River and San Francisco Rivers. The HO-Bar Site dates suggest that there is an Early Agricultural Period occupation in this area, comparable to documented dates in the Lowland Mogollon of southern New Mexico and southern Arizona and the Mountain Mogollon of west-central New Mexico and east-central Arizona. They also have implications for the diffusion of maize agriculture during this time period. Was the diffusion of maize agriculture through contact diffusion from Mesoamerica along a mountain corridor, was it contact diffusion from southern Arizona, or was there a migration of agricultural people from southern Arizona?

Pope, Carly [254] see Dedrick, Maia

Popelka-Filcoff, Rachel S. [9] see Pierce, Daniel

Popovici, Catherine (University of Texas at Austin) [33] Bricks and Mortar: The Concealed Politicization of Fired Clay Adobe at Comalcalco, Tabasco

Comalcalco displays a radical departure from traditional Maya building materials in its brick and seashell mortar construction instead of the paradigmatic Maya limestone. Incised animal, architecture, hieroglyph, and human forms adorn the brick slabs of principal buildings of Comalcalco’s ceremonial core. However, their inward-facing, or concealed, orientation rendered these markings invisible. Because monumental architecture benefited from the labor of non-elites, the purposeful placement of the incised designs strongly suggests a system of messaging in their invisibility. While Comalcalco occupied a strategic location near the Grijalva River, on the edge of Maya territory, its architectural vaulting resembles that of Palenque, indicating a close relationship between the two sites. In ancient Mesoamerica the invisible or concealed wields great power and consequence; at Comalcalco this lack of visibility may be inextricably tied to its peripheral placement within Palenque’s socio-political orbit as well as the greater Maya region. This paper explores several possibilities, none mutually exclusive. Are the incised and concealed bricks of Comalcalco tangible evidence of resistance from those who formed them? From more dominant centers who may have had a role in guiding construction at Comalcalco? Or are they emblematic of a body politic, writ large, which was active within the site?

Porter, Benjamin (University of California, Berkeley), Christopher Hoffman (University of California, Berkeley) and Kea Johnston (University of California, Berkeley) [172] Object Photogrammetry at the Phoebe Hearst Museum of Anthropology: Opportunities and Challenges

The growth in object photogrammetry standards and techniques offers new opportunities for university museums concerned with collections care, research, education, and public engagement. The Phoebe Hearst Museum’s global collection of 3.8 million objects spanning two million years and six continents presents an ideal context in which to explore such opportunities and work through interesting challenges. This paper describes how UC Berkeley faculty, staff, and students are collaborating on projects to document key objects in the Hearst’s collection. One case-study explores how several Egyptian sarcophagi were documented using structure-from-motion techniques. This work not only created much-needed digital images of these objects for the Museum’s accession records, but also facilitated a careful scholarly study of the epigraphic evidence found on each object. These models are also available for use in Berkeley classes. These models as well as others built from the collection’s African, South American, and North American collections can be experienced in the Museum’s public gallery through the recently installed 3D CAVEkiosk. The paper will describe visitor feedback on the use of the CAVEkiosk and their impressions of the different object models. The paper concludes with a discussion of the opportunities and challenges of conducting photogrammetry work in complex museum collections.

Porter-Lupu, Jennifer (Northwestern University) [251] Performing a Queer Aesthetic in Early 20th Century Washington: Preliminary Findings from the Halcyon House Site

Located in the Georgetown area of Washington, DC, the Halcyon House is one of the only archaeological sites with a documented queer inhabitant. Albert Adsit Clemens, who was purportedly a relation of Mark Twain, lived on the property with a male carpenter, and together the two filled the house with oddities and antiques. In this paper, I will analyze the way that Clemens performed a queer aesthetic through his household décor and personal adornments. Although the site was excavated in 1985, the project lost funding and was never completed. This paper will discuss preliminary findings from two feature deposits related to Clemens, as well as documentary sources. These data and my analysis will expand upon the limited corpus of knowledge about early 20th century queer life in Washington and, more generally, about the way that non-normative sexualities are performed through consumptive choices.
Porth, Erik (Tennessee Valley Archaeological Research)

[81] A Re-evaluation of Moundville’s Collapse

The disruption of social traditions in ancient societies is often described as the collapse of complexity, but persisting or resilient practices are often ignored, limiting archaeological interpretations of social continuity and change. This paper addresses these historical processes during the terminal occupation of Moundville, a multiple mound Mississippian civic-ceremonial complex occupied from A.D. 1200–1550 and located in west-central Alabama. The collapse of ancient complex societies has been proposed as a process of rapid disintegration of established practices and the loss of vital resources or sociopolitical institutions that maintained social complexity. Sudden shifts in materiality and monumentality during the fifteenth century at Moundville have been proposed as evidence for the collapse of the political order. This paper reevaluates the timing of these changes through Bayesian modeling of radiocarbon dates from stratigraphic mound midden deposits and revisits changes the production and consumption of symbolic art and monumental architecture. This paper demonstrates that while some ritual practices at Moundville changed, others were emphasized, supporting a reorganization of the social and political order around highly visible symbols and ritual objects. This newly observed persistence of materiality and monumentality has implications for shifts in the social reproduction observed in other late prehistoric Southeastern societies.

Portman, Katherine, Donna Glowacki (University of Notre Dame) and Kyle Bocinsky (Desert Research Institute)

[226] Water Management on the Mesa: The Horseshoe Ridge Reservoir Community and the Occupation of Park Mesa, Colorado

Water management is a critical concern in the arid landscape of southwestern Colorado, particularly for farmers. As such, significant developments in water supply systems—like the construction of reservoirs—reflect the social, political, and economic climates in a community. Three reservoirs are located on Park Mesa in Mesa Verde National Park. These were originally documented during surveys in the 1970s and revisited after the Chapin 5 fire in 1996, but none have been analyzed beyond basic description. In July 2017, two of the largest villages on Park Mesa were re-mapped as a part of the Community Center Reassessment Project, including one apparently centered around the Horseshoe Ridge Reservoir (HRR; 5MV03629). We examine the social and ecological contexts of the HRR community to understand more fully the development and organization of occupation on Park Mesa. We calculate least cost paths and viewsheds in order to help define the extent of the Horseshoe Ridge community and situate it within the broader social landscape. We also evaluate ecological setting, including potential sediment and surface hydrology, to assess the agricultural potential provided by this supposed water catchment feature. We compare the HRR community to other reservoir communities on the Mesa Verde cuesta.

Posadas, Lylliam (Autry Museum of the American West)

[191] Discussant

Pothier Bouchard, Genevieve (Université de Montréal), Fabio Negrino (Università degli Studi di Genova), Julien Riel-Salvatore (Université de Montréal) and Pascale Tremblay (Université de Montréal)

[219] Zooarchaeological Insights into Modern Human Mobility at Riparo Bombrini

Human-environmental interactions can be discussed on different scales, and from diverse perspectives and specializations in archaeology. We propose to examine human mobility on the local scale of Riparo Bombrini, a key site in Northwest Italy to understand Anatomically Modern Human dispersals along the Mediterranean coast during the early Upper Paleolithic. Previous studies including spatial, lithic, and raw material data revealed distinct mobility signatures from the site’s two Protoaurignacian levels, A1 being warmer and associated with residential mobility when the earliest level A2, directly preceding Heinrich event 4, is colder and associated with logistical mobility showed by a more expedient approach to lithic technology. From this portrait, we suggest that those signatures should be reflected in the faunal data by revealing distinct subsistence, animal acquisition, and carcass processing strategies from both stratigraphic levels. To assess this hypothesis, we present results from taphonomic and archeozoological analyses of faunal assemblages from both Protoaurignacian levels excavated at Riparo Bombrini between 2015 and 2017.

Potter, Ben (University of Alaska Fairbanks)

[127] Human Land Use Strategies and Responses to Risk during the Pleistocene–Holocene Transition in Eastern Beringia

Recent investigations in central Alaska at multiple scales (macro-regional, watershed, site cluster, intrasite) have revealed robust patterning among technological, faunal, and feature datasets. These responses are explored in the context of both regional environmental change associated with climatic oscillations between the Bolling-Allerød, Younger Dryas, and early Holocene chronozones as well as systemic change incorporating more logistical organization, shifts in diet breadth, and changes in seasonal mobility and habitat use. I track system-wide changes in the development of communal hunting, increased storage dependence, and increased social interaction in the Holocene. However, resilience in the earlier system allowed for relatively minor changes to accommodate major climate shifts (and resulting resource variability).

Potter, Ben [182] see Reuther, Joshua

Pottier, Christophe (Ecole française d’Extrême-Orient (EFEO))


For a quarter of a century, the concepts of an open city and a low density urban megalopolis have largely broadened our understanding of Angkor (Cambodia), which was based on the morpho-chronological vision of a succession of perfectly geometric walled cities. As the researches progressed, the identification of the elements that make up the archaeological landscape of the Great Angkor has been developed, mixing temples, palaces, settlements, reservoirs, road networks, hydraulic systems and agricultural parcels. The texture of the urban fabric now appears in its complexity, and underlines the omnipresence of geometry and, in particular, of the grid as a vector of spatial planning and a tool of a centralized state power. The presentation will focus on exploring this theme based on the region of the western baray in Angkor where recent research revealed the remains of the first Angkorian capital in one of the last unexplored areas of Angkor.

Potts, Andrew [247] see Rockman, Marcy

Pouley, Cheryl [331] see Edwards, Briece

Poulos, Anastasia

[251] In the Face of the Flood: A County’s Efforts to Mitigate the Potential for a Massive Loss of Cultural Resources

Coastal erosion is impacting Anne Arundel County, Maryland in a way that is extreme and remarkable with a rate of sea level rise nearly twice the global average. Historic properties and archaeological sites are at risk of inundation on the County’s shorelines. Anne Arundel County Trust for Preservation has received a cultural resources hazard mitigation grant through the National Park Service’s Hurricane Sandy Disaster Relief Fund (administered by the Maryland Historical Trust) and is partnering with Anne Arundel County’s Cultural Resources Division to identify, evaluate, and document imminently threatened archaeological and historic sites in the County that are in the high-risk flood zones in Pasadena, Jessup/Laurel/Maryland City, and Shady Side. This paper discusses the field and research methodology employed for assessing a massive number of historic resources and archaeological sites at high risk of inundation. This project demonstrates the value of a united team effort in facing the challenge of undertaking a large survey area, the benefits of developing a collaboration across disciplines, the use of a GIS database to prioritize cultural
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resources and the importance of both assessing and inventorying coastal sites endangered from natural hazards in order to mitigate the potential loss of these sites.

Powers, Robert [269] see Van Vlack, Hannah

Powis, Terry (Kennesaw State University), George J. Micheletti (University of Central Florida), Kaitlin Crow (New York University), Sheldon Skaggs (Bronx Community College, CUNY) and Peter Cherico (Bronx Community College, CUNY) [256] Buildings from the Ground Up: Early Maya Architectural and Settlement Practices at the Belize Valley Site of Pacbitun, Belize Archaeological research in the Upper Belize River Valley has recently produced information that dramatically improves our knowledge of the earliest Maya. Investigations, particularly at the site of Pacbitun, has revealed evidence of radiometrically and ceramically dated cultural stratigraphic deposits for the early and late Middle Preclassic subperiods (900–300 BC). Excavations were undertaken in the site core, principally Plazas A and B, to determine the nature and extent of these communities as well as to gather data on their spatial organization and population size. By combining settlement data with excavated architectural remains and ceramic assemblages, this paper will examine the timing and structure of initial occupation through increased social complexity by the 4th millennium BC. The excavation of several residential buildings, craft production areas, and a large ceremonial platform has provided significant new insights into the increasing diversification, complexity, and ceremonial/ritual importance of the buildings utilized by the residents of Pacbitun. A comparison of results with other valley sites and elsewhere in the central Maya lowlands will also be provided.

Powis, Terry [147] see Stanchly, Norbert

Poyet, Mathilde [126] see Sistiaga, Ainara

Pozorski, Shelia [17] see Pozorski, Thomas

Pozorski, Thomas (University of Texas-Rio Grande Valley), Shelia Pozorski (University of Texas-Rio Grande Valley) and Rosa Marin Jave (Marchan S.A.C., Paseo de la Republica No. 4527, LI) [17] Initial Period Friezes and Architecture at Tawkachi-Konkan, Casma Valley, Peru Recent excavations at a number of intermediate-sized mounds of the Initial Period (2100–1000 B.C.) site of Tawkachi-Konkan in the Casma Valley of Peru have uncovered surprising new evidence of clay friezes and architectural forms previously unknown for the Initial Period along the coast of Peru. One U-shaped mound complex has an associated sunken rectangular plaza that contains distinct friezes on all four of its sides. The content of the friezes includes two sea lions, a large feline and two possible avian beings that most likely reflect the cosmology of the builders of the site. The mound itself has an asymmetrical access pattern that is unique among Initial Period mounds that normally have symmetrical layouts and direct access routes. Architecture on the north wing structure housed ritual activities as well as living quarters for personnel who maintained the ritual mound complex.

Praet, Estelle (Estelle Praet ULB-MEARAP) [190] Early Monumental Architecture in Peru: Sunken Circular Plazas from the Late Archaic (5000–2600 B.C.) to the Final Formative (400–200 B.C.)

We hereby focus on a feature of monumental architecture in north and central Peru from the Late Archaic (5000–2600 B.C.) to the Final Formative (400–200 B.C.) respectively illustrated by the sites of Sechin Bajo and Pallka both located in the Casma Valley. This specific feature is the sunken circular plaza (SCP), a public-oriented sunken space whose circular shape runs from 1,5 m to 80 m, as the most extreme examples. Through the record and description of 64 sites–some of them contained several SCP-, we intended to understand the characteristics of SCP. Indeed, those structures vary in terms of building materials, capacity, centrality and space syntax. Besides, sites patterns presenting SCP are very diverse, which led to the establishment of a typology. This record enabled us to approach SCP diffusion through time and space. While focusing on the most documented sites, we also attempted to pinpoint specific functions associated to processions, gatherings and ritual activities.

Pratt, Jordan (Texas A&M University) and Ted Goebel (Texas A&M University) [155] Exploring the Age of Western Stemmed Points at the Nials Site, Haney Basin, Oregon

First American archaeologists are increasingly interested in the relationship between Western stemmed point technology (WST) and other Paleoindian lithic technologies, including Clovis. While there is some evidence of WST dating as early as 14,000 14C years before present, most sites lack reliable geoarchaeological and geochronological evidence. In the late 1990s and early 2000s the University of Nevada Reno excavated several stratified open-air WST sites in Oregon along the southern shoreline of Haney Lake, including the Weed Lake Ditch, Biting Fly, and Nials sites. The research presented here focuses on Nials (35HA2828), from which over 33,000 debitage pieces and 76 stone tools, including two crescents and five stemmed points, were recovered in situ. Initial attempts to radiocarbon date the cultural layer failed, therefore the Center for the Study of the First Americans returned to the site in 2017 with the goal of establishing its age, as well as describing and interpreting the geuaarchaeological and lithic materials. This recent excavation recovered further lithic and faunal samples, as well as materials for both AMS Radiocarbon and optically stimulated luminescence dating. Additionally, lithic technological attributes and ArcGIS 3D Analyst were utilized in analysis, allowing us to more clearly understand WST in Oregon.

Pratt, Lauren [13] see Napolitano, Matthew

Pratt, William (Texas State University) [324] From the Ashes: Volcanic Construction Materials in Pre-Columbian Ecuador

In many ways, volcanic eruptions define the pre-Columbian history of highland Ecuador: the shaping of the landscape, migration patterns, mythology, and ideology. Ecuador is one of the most volcanically active countries on earth, and it’s impossible to examine the archaeology without considering both the direct and indirect impacts of volcanic eruptions. Through millennia, the imposing presence of the volcanos on the northern Ecuadorian landscape inspired fear and veneration, with the ever-present threat of disaster the price of life-giving sources of water. With a paucity of other hard stone, volcanic materials found in the region, ranging from fine powdery ignimbritic ash from Quilotoa volcano to dense cangahua, a consolidated volcanic ash, have been utilized for a variety of purposes in pre-Columbian cultures all over northern highland Ecuador. This paper examines some of the functional and ritual uses of volcanic materials at pre-Columbian sites from different periods across the northern highlands in order to better understand how ancient people conceptualized these destructive but life-giving forces of nature.

[324] Chair

Preucel, Robert (Haffenreffer Museum, Brown University)  
[327] The New Pragmatism: Archaeological Encounters and Entanglements
In 2010, Steve Mrozowski and I proposed a “new pragmatism” as a way for archaeology to cut the Gordian knot of endless theory debates. We argued that this movement or spirit does not refer to the dominance of any one approach or theory, but rather to the more explicit integration of archeology and its social contact in ways that serve contemporary human needs. In my contribution, I example the relevance of some of the insights of Richard Rorty and Jurgen Habermas in developing a pragmatic archaeology.

Prevedorou, Eleanna (Wiener Laboratory ASCSA & Arizona State University)  
[298] Unwritten Histories: The People of the Phaleron Cemetery
Ancient Athens is cited as the contentious caldron from which the western political tradition emerged. During the formative Archaic period (ca. 700–480 BC), Athenian history was marked by major political developments (e.g., early law codification, citizenship formalization), social stratification (e.g., classes), and conflict (e.g., tyrants). To date, such processes are known to us through texts, artistic representations, and elite-centered mortuary grounds. The collaborative Phaleron Bioarchaeological Project integrates a wide range of biological, mortuary, and historical data with scientific methodologies to elucidate the ancient lives of the commoners that remain unexplored or silenced. This project focuses upon the extensive necropolis excavated at the ancient Attic port of Phaleron (ca. 8th-4th centuries BC) by the Ephorate of Antiquities of Western Attica, Piraeus, and the Islands. The size, date, state-of-the-art excavation techniques, preservation, and mortuary variation of the cemetery including, among others, what appears to be non-elite strata, as well as mass graves and shackled individuals offer us with a previously undocumented view of the ancient Athenian past. Here, we discuss preliminary bioarchaeological results and we present a contextualized and synthesized approach to reconstruct life and death in Archaic Athens.

[298] Chair
Prevosti, Francisco Juan [7] see Martin, Fabiana Maria

Price, Max (Massachusetts Institute of Technology)  
[103] Tracking Morphological Changes in the Domestication of Sheep and Pigs: A Comparison
How do animal morphologies change during domestication? How do different parts of the skeleton adapt to human management? In this poster, I take a quantitative approach to domestication by comparing biometrical data from two species of mammals that were domesticated in the Middle East around the same time (ca. 8000 BC): pigs (Sus scrofa) and sheep (Ovis aries). Both pigs and sheep were domesticated by Pre-Pottery Neolithic B communities in northern Syria/southern Anatolia, but these species likely followed different pathways to domestication as a result of their divergent behavioral and physiological properties. Using modern comparative biometrical data to guide the comparison, this poster tracks changes in cranial and postcranial measurements over time, covering the periods before and after domestication. By quantifying biometrical change across the skeletons of these two different species, this poster ultimately looks at mammal domestication as a process of unique adaptation to human cultural control.

[103] Chair
Price, Max [103] see Rapes, John

Price, Michael (Santa Fe Institute)  
[74] Bayesian Reconstruction of Past Demography
I describe a novel, age-structured, Bayesian framework for reconstructing past demography. The framework is quite flexible and can incorporate and synthesize a wide range of data. I demonstrate its use with human burial data, where each observation can include an AMS radiocarbon measurement, an estimate of age-at-death, or both. Conceptually, the framework is useful because it addresses in a statistically principled way two vexing sources of equifinality in archaeological data: (1) the radiocarbon calibration curve and (2) the fact that even if demographic rates such as age-specific mortality, fertility, and migration are stable an infinite set of demographic histories can yield the same predicted growth rate and stable age distribution. Fortunately, not all demographic histories are equally likely and some are even impossible. I utilize theoretical and empirical knowledge from evolutionary demography and life history theory to parameterize and specify prior probabilities for alternative demographic histories. The radiocarbon and age-at-death data update these prior probabilities to give posterior probabilities, yielding a (hopefully) sensible and accurate reconstruction of past demography.

Price, Robyn (University of California, Los Angeles)  
[309] The Invisibility of Experience: Accessing Ancient Sensory Frameworks
While archaeological analyses that focus on the experiential and sensorial past are becoming more common, scholars continue to discuss and dispute what knowledge of the past is accessible. Without moving beyond the material remains and into the realm of the self-reflexive researcher (Hamilakis 2013: 119), this paper will demonstrate that archaeologists do not need to stray too far from their traditional methods to uncover rich evidence of past sensory lives. By drawing from the field of art history and linguistics, the elaborate depictions of tomb scenes from Eighteenth dynasty Egypt might truly come to life as evidence for an ancient sensory framework. In addition, these tomb scenes were not designed for the dead, but also engaged with by the living. Though these scenes were augmented by their inclusion of deceased people and other such occurrences not commonly visible to the living, the activities depicted such as banqueting or hunting were those experienced by ancient Egyptians every day. How might the visible representations of invisible sensory experiences in these scenes be reconciled with the daily life of the ancient Egyptians? This paper seeks to understand this relationship with special emphasis on the visibility of the senses and the invisibility of experience.

[309] Chair
Price, Seth (University of Arkansas)  
[71] Abu Shusha: Integrating and Correlating Surface Features with Magnetic Susceptibility
This research looks at Tel Abu Shusha in the Jezreel Valley of Israel, an understudied site in a strategically important Levantine area with potential evidence of Roman, Byzantine, and Ottoman settlements. Surface survey was completed in nine square kilometers around the Tel, resulting in ceramic density data as well as over 2,500 mapped surface features in GIS, such as quarries, wine presses, and architecture. Additionally, four magnetic susceptibility grids were taken in this area, each measuring approximately 100 by 100 meters. These grids were intentionally completely in varying

Premer, Luke [227] see Tostevin, Gilbert
Prendergast, Mary [310] see Janzen, Anneke
Prentiss, Anna [97] see Super, Clare

Price, Karen [306] see Marquardt, William

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topography that often creates difficulty for geophysical survey: on top of a Tel, on a Tel slope, in a hilly forested area, and in a flatter forested area. This project, a Master’s Thesis at the University of Arkansas, looks at settlement patterns and site formation processes through the integration of these two data sets and exploration of visual versus quantitative methods of display, as well as the relevance of maps derived from elevation. Global and local correlation as well as other spatial statistics were used to compare these data sets, particularly looking at how well certain feature types align with susceptibility values and what we can generalize from this.

Price Steinbrecher, Barry (Anthropological Research, LLC), Stewart B. Koyiymptewa (Hopi Cultural Preservation Office) and Maren Hopkins (Anthropological Research, LLC)

[72] Research Protocols for Documenting Hopi Traditional Properties

Over millennia, Hopi people have established a rich landscape of significant places throughout the American Southwest and beyond. The significance of many of these places is rooted in Hopi traditional beliefs and practices and they are vital components to the cultural identity of the tribe. The Hopi Cultural Preservation Office (HCPO) and their research partners have established protocols for documenting Hopi traditional cultural places and incorporating this information into the regulatory framework of the National Historic Preservation Act. To this end, established protocols include: identifying appropriate research participants to help identify traditional cultural properties and their contexts of significance; completing place-based research to identify all contributing elements of the property; following best practices in documentation, review, and confidentiality of cultural information. Recent research conducted by the HCPO and Anthropological Research, LLC, identified Hopi traditional cultural properties within the Navajo Generating Station and Kayenta Mine Complex, centered on Black Mesa in northeastern Arizona. This research helped to refine established protocols and illuminate continued challenges associated with documenting Hopi traditional cultural properties.

Prieto, Gabriel [165] Continuities and Discontinuities in a Thousand Year Old Fishing Village on Huanchaco Bay, North Coast of Peru: The Pampa la Cruz Case Traditionally, Andean archaeologists label residential settlements as “Salinar” or “Moche” and automatically assumed they “belong” to a particular society/culture. Since 2010, I have been excavating multiple sites around Huanchaco bay, located in the littoral of the Moche Valley, North Coast of Peru. One particularity of this coastline is that there is still an active group of fishermen exploiting the sea resources using traditional technology. The continuity between the earliest occupation identified in this area (B.C. 1500–1200) and the present day fishermen is giving us a new perspective for exploring the social, economic and ideological trajectories of the Huanchaco community. In short, instead of framing archaeological occupations as Salinar or Moche, I propose a “Huanchaco identity” created over time by their economic and ideological relationship with the ocean. To explore this possibility, I present the case of Pampa la Cruz, first occupied around B.C. 350/300 and abandoned roughly at 650/700 A.D. This occupation lasted for more than one thousand years in which this domestic settlement experienced several changes but also continuities in spatial organization and material culture. This paper presents the history of a fishing community and their co-existence with major social, political and ideological movements through time.

Prieto, Gabriel [165] see Parker, Bradley

Prignano, Luce [146] see Lozano, Sergi

Prijatelj, Agni (Durham University, United Kingdom)

[136] The Vital Force of Underground Places and Ritual Production in Caves and Rockshelters

Caves are regularly portrayed as a blank stage upon which the social—including ritual activity—is enacted. This paper, however, takes the opposite approach: in discussing a number of selected Antique and Medieval ritual cave sites in Slovenia that are associated with Roman, Christian and Slavic religious systems, it demonstrates the vibrant, hybrid, participant and continuously-changing nature of underground places in which multiple symmetric and fluid connections exist between people, animals, plants, materials, things, places and landscapes. Most notably, these throbbing networks of various human and non-human agencies cooperate or are in conflict, and enhance or confound each other; yet, at the same time, also act as a whole with a vital force that is distinct from the sum of each materiality considered alone, and which can thus be understood not only as a distinct place-power, but also as the core essence of any ritual performance.

Primeau, Kristy (NYS DEC)

[148] Discussant

Primeau, Kristy [40] see Goodwin, Graham

Prince-Buitenhuys, Julia [179] see Hall, Sarah

Prociuk, Nadya (University of Texas at Austin)


The Iberian Peninsula has been a rich source of metallic ores for millennia, and the quest for control of those resources has profoundly impacted the history of the Peninsula. Iberia has followed a unique trajectory in the development of metallurgy, with a case for the independent invention of copper smelting in the southwest, and small-scale production of bronze and other metals across the Peninsula until Roman occupation. The advent of Roman imperial control of labour and mines constituted a sea change in the scale and intensity of metal exploitation in Iberia with the introduction of large-scale mining, smelting, and production operations. What did this change look like within communities? How did local people adapt, adopt, or reject these new technologies and practices? Among the last to be conquered, the people of the Castro Culture of northwest Iberia produced some of the most technologically complex and visually stunning examples of Iberian metalwork. However little is known about the nature of metallurgy practiced at Castro sites. The Cividade de Bagunte, at the height of its occupation during the Roman period, can provide valuable insight into the social and technological strategies used by Castro people to cope with this transition.

Prociuk, Nadya [21] see Bussiere, Lauren

Procopio, Noemi (The University of Manchester), Anna Williams (University of Huddersfield), Andrew Chamberlain (The University of Manchester) and Michael Buckley (The University of Manchester)

[88] Post-mortem Interval and Age-at-Death Estimation through Forensic Proteomics

The estimation of the post-mortem interval (PMI) and the age-at-death (AAD) are both important aspects of forensic anthropology for which numerous methods have been developed, each with different limitations. As proteins represent biomolecules that carry out a wide range of functions, many of which structural to the tissues undergoing decomposition, and the collection of these (i.e., the proteome) is dynamic not only throughout life, but also post-mortem, proteomic methods have great potential in forensic
Here we present the innovative use of proteomics to investigate AAD from pig bones of different biological ages collected from an experimental forensic scenario. Furthermore, we explored the proteome variability of bones extracted from pigs that have been buried for different PMIs, to better understand the degrading phenomena associated with taphonomic events as well as the decay of proteins post-mortem. Our results showed relationships between the abundance of particular serum proteins with AAD, and glutamine deamidation with PMI, revealing the suitability of proteomics to forensic contexts.

**Proebsting, Eric (Thomas Jefferson's Poplar Forest) and Daniel Druckenbrod (Rider University)**

This paper highlights ecological discoveries made during a survey of natural and cultural resources along a new 2.2 mile parkway at Thomas Jefferson's Poplar Forest. Poplar Forest was Jefferson's former retreat home and plantation located in Bedford County, Virginia. In addition to locating archaeological sites and mapping aboveground features, 10 forest plots were established within stands of increasing age adjacent to the proposed path of the parkway. By measuring tree diameter, identifying tree species, and using dendrochronology to sample trees from three different positions in the forest canopy, these plots are providing interpretations about how the present day landscape relates to past agricultural activities, landscape design, and processes of succession that have taken place over the past 250 years. Additional insights are gained by examining these plots in light of historic documents and maps as well as archaeological remains, including charcoal fragments recovered from the plantation's slave quarters and pollen profiles associated with the creation of both agricultural fields and Jefferson's retreat. Samples taken from plantation-era building timbers and tulip poplar trees associated with the ornamental landscape are also being used to extend our knowledge of significant climatic events and forest dynamics back to the decades before colonial settlement.

**Prout, Michael (CSULA Anthropology Master of Arts)**

Two chambers in Midnight Terror Cave, Belize show undeniable evidence of Maya child sacrifice. Operation V and Operation VIII are the deepest darkest chambers of the cave where some of the most important of ancient Maya rites were performed including human sacrifice. In 2009 Ann Scott proposed that sacrifices occurred in Operation VIII and, during ritual cleaning of this public space in preparation for a new ceremony, the bones were taken from their primary deposition site and moved to Operation V. This paper analyzes the presence of small hand and foot bones in each chamber to determine primary or secondary deposition. The data agree with Scott’s secondary deposition model.

**Pruf, Andrew [223] see Graesch, Anthony**

The second half of the first millennium A.D. witnessed some significant changes in gender roles and traditions in the Andes. The discovery of the first undisturbed burial context of fifty-eight noblemen with hundreds of precious artifacts found at Castillo de Huarmey provides important evidence about women and their roles played in ancient society in the Wari Empire. The amount and richness of the luxury and prestige items, which comprise hundreds of objects of the most diversified types, provide important data regarding the identity of elite women and their social and economic role during the Middle Horizon. Many of these ancient traditions have persisted in the early colonial period. That refers especially to the elite women’s personal attire, as well as jewelry, ritual accessories and other objects of prestige collected during their lifetime. Early colonial documentation, particularly the wills of indigenous elite women, compared with archaeological evidence, confirms that both female attire and personal grave goods imitated the symbolic image of the queens and princesses of antiquity, just like those from the mausoleum of Castillo de Huarmey. The information collected up to date allows also to analyze different goods of indigenous origin through their strategic and economic value over time.

**Przadka-Giersz, Patrycja (University of Warsaw)**

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**Prystupia, Paulina (University of New Mexico)**

As we move towards increasing open access to archaeological knowledge, textbooks are an integral part of that transition. Unfortunately, open access textbooks are not a well-established form of knowledge dissemination amongst archaeologists and currently do not hold as much credibility as traditionally published works such as peer reviewed journals or printed textbooks. In hopes of contributing a chapter to an open access textbook, what are the keys to making such a background chapter successful? What elements are necessary to prove that such a chapter has validity in the eyes of archaeologists but also leverages the benefits of an open source textbook? What traditional textbook themes are required and what others should be left aside to improve the way that textbooks can be used to pass on background knowledge to new students? This paper aims to discuss some of those specifics to create a solid foundation for co-authoring a chapter for an open source textbook. It will examine the necessities as well as discuss innovative ideas for working on a large collaborative project.

**Puckett, Neil (Texas A&M CSFA)**

Over the last 15,000 years, Walker Lake, NV has ranged in size from the southernmost branch of Pleistocene Lake Lahontan to a small alkali wetland. These conditions have provided valuable, but varied resources for local populations throughout human occupation. Sites identified during summer 2015 and 2016 illustrate the preservation of archaeological sites in environments where both submersion and drying have occurred. Investigations during summer 2017 revealed the presence of numerous landforms under the modern lake. Sub-Bottom survey showed preserved features including shorelines,
buried channels, and possible rivulets. Underwater test excavations on these features demonstrated their preservation under more than 2 meters of sediment. Marker horizons and preserved organics provide valuable guides for future research such as depositional chronology, potential for preserved perishable materials, and ideal locations for extensive excavations. When combined with the new archaeological sites found north of Walker Lake, the results clearly demonstrate the value of underwater archaeological research in the Walker Lake Basin.

Pugh, Timothy [252] see Shiratori, Yuko

Pugh, Timothy [Queens College and The Graduate Center] (252) New Data on City Planning at Nixtun-Ch’ich’, Petén, Guatemala

The site of Nixtun-Ch’ich’ in Petén, Guatemala is the only known lowland Maya site with an urban grid. Such grids are composed of perpendicular streets forming quadrilateral city blocks. They are common elements of city planning as they increase the legibility of city space and the interconnectedness of occupants. The urban grid at Nixtun-Ch’ich’ is the earliest known in the Americas (ca. 800–500 BCE) and was built when social complexity was emerging in the Maya region. Like many Preclassic period Maya sites, the planning at Nixtun-Ch’ich’ also includes an east to west line of ceremonial buildings and reservoirs forming an axis urbis. Our latest survey has revealed that the axis urbis extends much further to the east and west than previously thought. Recent excavations and radiocarbon assays have refined the chronology of the grid construction as well as the axis urbis. The work has also illuminated Middle Preclassic period construction techniques.

Pulisifer, Peter [195] see Strawhacker, Colleen

Pugliese, Francisco (MAE/USP BRAZIL), Roberto Ventura Santos (Laboratory for Geochronology—Brasilia University), Carlos Zimpe (Archaeology Department—Rondônia Federal Universi) and Eduardo Neves (Museum for Archaeology and Ethnology—USP) (69) Monte Castelo Shellmound and Early Ceramic Technologies in Amazon: A Perspective on Long-Term Landscape Management and the Origins of Pottery in the Americas

Recent research has confirmed that the some of the oldest ceramics of the Americas are associated with Amazonian shellmounds. Excavations at Monte Castelo site produced a representative assemblage of these early technologies, and has also demonstrated a long history of ceramic production and use, with significant changes during the Middle Holocene that accompany the intensification of landscape management and the emergence of several other cultural innovations in that period. In this presentation, we will bring the results of geochemical analyzes carried out on pottery remains and sediments from different strata of the site as well as from off-site areas, correlating its chronology with the paleoenvironmental scenario of southwestern Amazonia. In an attempt to contribute to the discussions about the characteristics of the emergence and the adoption of ceramic technology, some indications of its relation with the early process of landscape management that are marked in the history of occupation of the region will be further presented.

Pulseman, Kathy [48] see Lee, Craig

Pustovoytov, Konstantin [283] see McCrorriston, Joy

Putsavage, Kathryn [287] Complicating the Religious/Secular Dichotomy through Object Biographies: An Investigation of Mesa Verde Style Mugs

Scholars acknowledge that religious and secular rituals are difficult to distinguish. This is especially true in the archaeological record, where human beliefs and worldviews must be understood through material correlates. In order to make categories simpler to use, Western scholars have tended to dichotomize religious and secular. Exploring the role of Mesa Verde style mugs in the Ancestral Puebloan world, this paper takes an object biography approach and acknowledges that boundaries between religious and secular practices are not always clear cut. Researchers tend to consider Mesa Verde style mugs an object used primarily in religious ritual contexts. However, our investigations have assumed an unnecessary dichotomy between domestic/secular and religious/ceremonial uses. By using an object biography approach, I work to collapse the boundaries between religious and secular practices and show that mugs had multiple roles in the lives of Ancestral Puebloan people.
INDIVIDUAL ABSTRACTS OF THE SAA 83RD ANNUAL MEETING

Pye, Jeremy (Cultural Resource Analysts, Inc.)

[221] Assessing Malaria Risk in 19th Century Tucson, Arizona

Malaria is thought to have been brought to the Americas by early Spanish explorers. By the late 19th century, malaria had spread through human populations throughout tropical and temperate areas of the Americas, including the American Southwest. Historical documents, maps, and modern GIS data layers (e.g., DEM, soils, vegetation, land use, streams) from the area around Tucson, Arizona, were consulted and entered into ArcGIS (v. 10) in order to produce a map of potential vector breeding locations based on a flood water accumulation model. The ArcGIS model and subsequent statistical analyses revealed that nearly the entire Tucson Basin would have been at high risk for malaria transmission, but historical records suggest that malaria differentially targeted certain demographics. Why? This research attempts to tell the story of how cultural and social practices interact with environmental patterns of climate and vector distribution to determine risk of malaria transmission in Tucson.

Pye, Mary E. [136] see Gutiérrez, Gerardo

Qi, Haiping [88] see France, Christine

Qian, Wei [137] see Liu, Siran

Quave, Kylie (Beloit College) and R. Alan Covey (The University of Texas at Austin)

[207] Camelid Herding and Enduring Community Identities among the Ayamacas (Cuzco, Peru)

Indiscriminate invocation of the term ayllu constrains archaeological reconstructions of community organization in the pre-contact Andean highlands. Legacies of earlier generations of anthropological scholarship encourage researchers to assume particular traits of sociopolitical organization. Archaeological and ethnohistoric evidence from the Cuzco region of Peru demonstrates how such assumptions can be an obstacle to developing accurate representations of social organization. As Inca elites extended power in the Cuzco region (AD 1200–1400), they interacted with diverse societies that did not all resemble the monolithic Andean ayllu. One compelling case for reconsidering ayllu organization is Yunkaray, seat of the powerful Ayarmacas polity, located near Maras, 35 km northwest of Cuzco.

Quave, Kylie [100] see Aland, Amanda

Quilter, Jeffrey (Peabody Museum, Harvard University)

[64] Discussant

Quinn, Colin (Hamilton College)

[40] A New Method for Monitoring Socio-economic Changes through Settlement Placement

There is a recursive relationship between socio-economic institutions and the environment. Decisions about where to place settlements in a landscape were informed by existing economic institutions, but placement of sites in turn effected how social and economic institutions were organized. In this paper, I present a new GIS-based method for quantifying socio-economic organization and change in prehistoric societies. Catchment analyses, as employed in this study, define the availability of economic resources for individual settlements. This approach then quantifies cultural preferences across settlement systems. As a case study, I monitor settlement systems throughout the Early and Middle Bronze Age in southwest Transylvania. Southwest Transylvania is a major metal producing region that underwent significant socio-economic changes as metal became commodified throughout the European Bronze Age. Using catchment analysis, I demonstrate that communities in metal-rich landscapes increasingly prioritized access to agricultural land and access to interregional trade routes over metal ore sources. This result challenges existing narratives for how increasingly complex societies emerged in late prehistoric Europe. The method presented in this paper is easily transferable to other regional contexts and can be an additional tool for archaeologists exploring socio-economic organization and change in the past.