

highlights the consequences of human behavior in a dryland fieldsystem that includes strong climatic gradients both between and within agricultural subdivisions. Our research shows the ecological context shifted under the feet of the early Hawaiians as the number of feet (and mouths) grew. We show how this line of inquiry can be used to complement and help interpret the archaeological and ethnographic record.

Punzo, Jose (Instituto Nacional de Antropología e Historia)

[147] *Tratamientos funerarios entre los xiximes de la Sierra Madre Occidental, en el estado de Durango, México.*

Los xiximes fueron los habitantes de la Sierra Madre Occidental en el actual estado de Durango, a la llegada de los españoles, y estos tuvieron distintas prácticas funerarias que los diferenciaron de todos sus vecinos. Estas consistían mayormente en la construcción de urnas funerarias de tierra, en las partes más escarpadas de los acantilados, donde colocaban a sus muertos y les colocaban sus ofrendas. Sin embargo en la presente ponencia exploraremos no solo esa práctica, sino cuestiones asociadas a la antropofagia ritual que estos desarrollaron, así como otras prácticas funerarias que hemos podido identificar mediante trabajos arqueológicos y etnohistóricos.

Purdue, Louise (CEPAM-CNRS, University of Nice Sophia Antipolis), Wesley D. Miles (Cultural Resource Management Program, Gila River Indian Community) Manuel R. Palacios-Fest (Terra Nostra Earth Sciences Research, LLC), Bruce G. Phillips (EcoPlan Associates Inc) and David K. Wright (Seoul National University)

[223] *Prehistoric Agrosystems of Central Arizona: A Paleoenvironmental Approach to the Study of Hohokam Irrigated Fields and Canals*

For more than a millennium, Hohokam farmers developed large-scale irrigation along the Middle Gila River in the Phoenix Basin. Excavations near Upper Santan Village recently uncovered a section of prehistoric irrigated agricultural fields. To reconstruct this agro-ecosystem, an interdisciplinary approach combining geoarchaeological, micromorphological, magnetic, chemical and paleoecological data was conducted on irrigation canals and associated fields. This study allowed us to reconstruct past human-environment interaction at a local scale, identify signatures of irrigated and managed soils and evaluate their preservation, compare paleoenvironmental signatures in irrigation canals and fields, and estimate the impact of long-term farming on soil properties.

Puseman, Kathryn (Paleo Research Institute), Eileen Johnson (Texas Tech University) and Peter Kovacik (Paleoresearch Institute, Inc.)

[66] *Charcoal, Wood, Paleoenvironment, and Radiocarbon Dating*

Identification of charcoal and wood fragments from the Yellow House System in Lubbock, Texas provides information about the paleoenvironment and selection of woods for specific uses, such as fuel and construction. Looking at microanatomy at high power allows identification of small charcoal fragments. This type of analysis also provides a critical piece of information

necessary prior to radiocarbon dating. Identifying the charcoal being dated and knowing and using the average life spans of the charred material as a guide to understanding the relationship between dates are crucial to building an accurate temporal record of environment and culture.

Pyburn, K. (Indiana University)

[254] *World Heritage: Universality or Just Globalization?*

Preservation and research are unproblematic concepts to most archaeologists and many sectors of the public. Remnants of the human past with scientific merit and often great beauty are commonly regarded not the property of a single culture or of the descendants of their creators, but as the property of all human beings and the appropriate preserve of science. But recently attempts to foster the preservation of important monuments and artifacts and research the cultures of the past across the globe have resulted in some new ideas about what archaeological preservation and research really are and why in any particular case certain people may be in favor of them while a surprisingly large number are not. Ultimately, these controversies have forced archaeologists and the public to consider exactly what is important about the past, and what archaeology has to do with answering the question.

[268] *Discussant [197] Discussant*

Pye, Jeremy (University of Florida)

[235] *Faces from the Past: History of Ceramic Memorial Portraits on Grave-Markers*

Ceramic memorial portraits capture the images of people in the past. Through their expressions, fashions, and depicted relationships, the people staring out from these images tell the viewer intimate stories, stories which are different for each passerby. The context of their placement, on grave-markers, adds yet another layer of meaning. As a form of archaeological artifact, they provide insights into individual and cultural identity. Moreover, they reflect individual and/or family attempts to construct a specific representation of the decedent. Ceramic memorial portraits capture memories and moments in time, link the past to the present, and preserve history for the future.

Pykles, Benjamin (State University of New York at Potsdam)

[82] *A New Archaeology in the New Deal: The Rise of Historical Archaeology in the 1930s*

Although there are isolated examples of what today we call historical archaeology from as early as the seventeenth century, the discipline had its formal beginnings in the 1930s with the New Deal excavations at Jamestown, Virginia – the first permanent English settlement in North America. The Jamestown excavations, led by Jean Carl Harrington, were among the first federally sponsored historical archaeology projects in North America and constitute the true institutional beginnings of the discipline. It was during these excavations that Harrington pioneered many of the fundamental methods and practices still used by historical archaeologists throughout the world today.

[158] *see Reeves, Jonathan S.*

Qin, Ling [111] *see Fuller, Dorian Q.*

Quates, Duane (U.S. Army, Fort Drum, NY) [185]
Discussant [185] First Chair

Quave, Kylie (Southern Methodist University), René Pilco Vargas (Universidad Nacional de San Antonio Abad del Cusco) and Stephanie Pierce Terry (Pontificia Universidad Católica del Perú)

[227] *Administration and production on the Inka estate within the imperial heartland (Maras, Cusco, Peru)*
In the imperial heartland, the Inka transformed local political, economic, and social life. In the Maras region, the local population was forcibly migrated and replaced with royal estate investment. At Cheqoq, an Inka staple storage and ceramic production center linked to the Cusco elite, recent excavations of a workshop and domestic contexts yield new data on socioeconomic status differentiation and the role of the estate administrator under Inka nobility. We are studying production, diet, and sumptuary practices of attached specialists and storage administrators to evaluate imperial resettlement policies and the function of economic spheres under elite and state control.
[227] *Second Chair*

Quave, Kylie [5] *see Weitkamp, Matthew R. [6]* *see Kennedy, Sarah*

Queen, Rolla (Bureau of Land Management)

[166] *Cultural Resources Management Challenges from Renewable Energy Projects in the California Desert*
The development of large scale renewable energy projects in the California Desert and American Southwest have created both challenges and opportunities for the management of cultural resources on Public Lands. The paper will explore the procedural, resource, and management issues related to renewable energy projects, focusing on case studies in the California Desert District of the Bureau of Land Management.
[112] *Discussant*

Quezada, Osiris

[224] *The Stone and their Ways of Extraction at Templo Mayor of Tenochtitlan in the Pre-Columbian period*
In the Pre-Columbian period, the stone extraction for building required an adequate knowledge and technical skills, about of the physical properties of the raw materials for their correct exploitation. This investigation examines the archaeological evidences of the transformation process of the building materials used at the Templo Mayor of Tenochtitlan, procurement, modification and use. For this study we combined petrographic and geomorphological analyses with ethnographic work in two different quarries, where currently are extracted similar materials as employed at the Huey Teocalli of Tenochtitlan.

Quinn, Colin (University of Michigan) and Ian Kuijt (University of Notre Dame)

[226] *Smoke Signals: Variability in Social Discourse, Display, and Deposition of the Dead in Prehistoric Ireland*
Like other forms of treatment of the dead, cremation is highly variable in practice, context, and social meaning. Elucidating patterns within this variability is necessary for developing nuanced social interpretations. By tracking the pathways of the body through the tempo, location, visibility, and technique of cremations, we explore

diachronic and synchronic differences in social organization, ritual beliefs, and conceptualizations of the body between the Irish Neolithic and Bronze Ages. This approach emphasizes how mortuary practices both reflect and actively modify the role of the dead, communal and individual identities, and social relationships in the contemporary societies of the living.
[226] *First Chair*

Quinn, Colin [226] *see Kuijt, Ian*

Quist, Rachel [180] *see Rhode, David*

Raab, Jessica (University of Kansas)

[235] *And You Shall Know Us By The Trail Of The Dead: Documenting Traumatic Injury in the Pericú of Baja California Sur*

A high rate of skeletal trauma is observed in burial assemblages among the Pericú, a culturally extinct Holocene group from the Cape Region of Baja California Sur. Previous studies of assemblages recovered from several large inhumations throughout the region reflect that 50% of males and 30% of females present antemortem craniofacial trauma. When coupled with ethnohistorical accounts of widespread conspecific and extragroup violence, an opportunity for an anthropological investigation into the traumatic injuries represented exists. Comparisons with other hunter-gatherer groups whom also engage in conspecific and/or extragroup violence may aid drawing a more cogent picture of Pericú lifeways.

Raab, L. Mark [67] *see Bost, Matthew A.*

Raad, Danielle [62] *see Smith, Alexander J.*

RabbySmith, Steve (Brockington and Associates), Glenn Strickland (Brockington and Associates, Inc.) and James Page (Brockington and Associates, Inc.)

[81] *Refining Site Probability Model Criteria for USACE Properties on the Upper Tenn-Tom Waterway: Section 110 Survey for the Mobile District, USACE*

As part of the American Recovery and Reinvestment Act, Brockington and Associates conducted cultural resources survey at various USACE properties across the southeastern U.S. Among those properties were approximately 3500 acres within the Tenn-Tom Wildlife Mitigation Area (WMA) identified as having a high probability for archaeological resources. Using the Tenn-Tom WMA high probability survey results, more specific environmental correlates were identified, which have allowed for a refined site probability model. The proposed conference poster is intended to illustrate contrasting probability data and how this information can be used to prioritize future archaeological research in the region.

Raczek, Teresa (University of New Hampshire)

[189] *When Possessions are Few: Mobility, Materiality, and Minimalism in Northwest India*

The practice of high mobility is strongly correlated with minimalist consumption patterns. Previous research on craft production of highly mobile groups has emphasized functional analyses that focus on the portability, utility, and flexibility of lithic tools, pottery, and other items. However, it is also important to consider the relationship between consumption, production and the construction of

identities. When the number of objects one owns is small, the inherent meaning in each object becomes magnified. This paper will examine the relationship between mobility, materiality, and minimalism in Northwest India, with a specific focus on the site of Bagor, Rajasthan.

Rademaker, Kurt (University of Maine), Bruce Kaiser (Bruker Elemental), David Gibson (University of Maine) and Michael Glascock (University of Missouri Research Reactor)

[267] *New Geochemical Data from the Alca Obsidian Source Region: Implications for Understanding Prehistoric Extraction and Distribution*

From initial use by Late Pleistocene hunter-gatherers to widespread distribution by complex societies, Alca obsidian was one of the most economically important volcanic glasses throughout Central Andean prehistory. Alca is the only Peruvian obsidian known to have geographically patterned geochemical variation within an extensive source region. This characteristic allows high-resolution provenance determination of artifacts and makes the Alca source an ideal place to evaluate various extraction and distribution scenarios. We present new geochemical data obtained on obsidian artifacts from archaeological sites local and extra-local to the Alca source region and discuss potential social and economic implications.

Radovanovic, Ivana [255] *see Bonsall, Clive*

Raebel, Meghan (Ripon College)

[35] *Inka and Tiwanaku Plant use at the site of Tiwanaku, Bolivia*

The paleoethnobotanical evidence from Inka and Tiwanaku occupations will be presented, highlighting the differences in plant use, landscape utilization, and ritual. The materials are derived from A. Vranich's and J. Yeager's excavations in the ritual core of Tiwanaku. These materials will be compared to other middle Horizon sites in Peru. Collection and analysis methods will be highlighted, and the results of new and ongoing pXRF analysis will be presented.

Rafferty, Sean (University At Albany, SUNY) and Zuzana Chovanec (University at Albany, SUNY)

[19] *Recent research on alkaloid residues*

Residue analysis of intoxicants is a high-potential but underutilized area of research. The authors of this paper present recent research on the use of tobacco and opium residues in prehistory. In addition, results of the analysis of experimental data on alkaloid residue diagenesis are also presented.

Rafuse, Daniel [177] *see Gutierrez, Maria A.*

Ragsdale, Corey (University of New Mexico) and Keith Prufer (University of New Mexico)

[162] *Isla del Idolo: a survey of an endangered archaeological site in Veracruz, Mexico*

Here results are presented from an initial survey conducted on a possible pre-Hispanic Gulf Coast occupation site. The site is located on Isla del Idolo in the Tamiahua Lagoon, Veracruz, Mexico. Findings are comparable with structures and burials found in adjacent regions around Mexico. The construction of a man-made

outlet on the southern point of the lagoon in the 1950's has caused recession and erosion due to rising water levels, and consequently to the exposure of hundreds of archaeological artifacts and human remains in immediate danger of being lost. Action toward the preservation of these remains should be considered.

Railey, Jim (SWCA - Albuquerque)

[7] *Spatial Zoning and the Shift from "Formal" to "Expedient" Flaked-stone Technologies*

The temporal shift from "formal" to "expedient" flaked-stone technologies has been the subject of several competing explanations, variously emphasizing reduced mobility, intensification of farming and other methods of food production, and the advent of the bow and arrow. Another factor that may help explain this apparent shift is the marked increase in spatial zoning that occurred with the advent of sedentism. This poster presents several instances in which formal-tool production occurred in spatially restricted loci in late prehistoric sedentary settlements in North America, and focuses on a case study from a Pueblo-period site in New Mexico.

Rains Clauss, Lee [197] *Discussant [197]* *First Chair [197]* *Second Organizer*

Rakita, Gordon (University of North Florida)

[143] *The Mortuary Practices of the Casas Grandes Region: A Preliminary Database*

I present a preliminary regional database of mortuary practices for the Casas Grandes region of Chihuahua, Mexico. The reported prehistoric mortuary remains from the region are overwhelmingly drawn from the Paquime and Convento sites reported by Charles C. DiPeso and colleagues. Often overlooked, however, are several smaller samples that are reported with less detail. Given the complex nature of mortuary ritual from the region (especially in the late ceramic periods), the structure of the database and the recorded variables is equally complex. The data highlight several challenges to establishing a regional database of Southwestern mortuary practices.

[143] *Second Organizer*

Ramenofsky, Ann (University of New Mexico) [264]

Discussant [130] *Discussant*

Ramirez, Nicole (HDR/e2M and California State University Chico) and Lisa Westwood (ECORP Consulting, Inc.)

[242] *Space Exploration as a Universal Value: A Case for Nominating Tranquility Base as a World Heritage Site* UNESCO World Heritage Sites are defined as places, natural or constructed, which are of outstanding universal value. Space technologies are global technologies representing the contributions of many cultures and many countries around the world. They are the result of the cumulative interchange of scientific and world cultural values over many decades. This paper will discuss the World Heritage List Criteria and the ways in which Tranquility Base, the site of the first moon landing, satisfies the criteria.

Ramirez, Shelby [211] *see Maurer, Emily*

Ramirez-Urrea De Swartz, Susana (Universidad de

Guadalajara)

[98] *The anthropomorphic representation in the Aztatlán Tradition (850-1300 AD), Western Mexico. An approach*
The Aztatlán Tradition was widespread in Western Mexico between 850 and 1300 AD. One of its most remarkable characteristics is the introduction of new iconography in the region, which stands out because of its ritual and religious thematic and it has been related to as codex style. Of particular interest are the anthropomorphic representations, especially in some codex style pottery vessels. It has been noticed that some of these representations might correspond to different gods; figures also dressed up with attributes of some deities. This paper attempts to approach human representations and some of its meanings in the Aztatlán Tradition.

Ramon Celis, Pedro and Paulo Cesar Perez Roman (Zona Arqueológica de Monte Albán)

[95] *Entierros y ofrendas en Lambityeco: Nuevas formas de deposición encontradas en contextos tardíos.*
A principios del año 2010, se realizaron excavaciones en el sitio arqueológico de Lambityeco teniendo como objetivo la exploración de una unidad doméstica. Presentaremos los hallazgos de estas excavaciones. Uno de los más interesantes fue el entierro de dos individuos infantiles rehumados asociados al enterramiento de un neonato, estando colocados los primeros de manera intencional en un arreglo mortuorio muy peculiar. Este tipo de deposición, no registrada previamente en la zona, teniendo un contenido semántico que funciona como un libro abierto a las prácticas funerarias zapotecas así como ayuda en la comprensión de la cosmovisión prehispánica en general.

Ramos, Carmen [119] see *Lentz, David L.*

Randall, Lindsay (Robert S. Peabody Museum of Archaeology) and Christopher Toya (Department of Resource Protection - Pueblo of Jemez)

[196] *Pecos Pathways: A Model for Creating Lasting Partnerships*
Pecos Pathways is an expeditionary learning program that is an outcome of the largest repatriation in NAGPRA history to Jemez Pueblo in 1999. A Robert S. Peabody Museum of Archaeology, Pecos National Historical Park and the Pueblo of Jemez partnership, it was inspired by mutual interest in educating young people and a desire to continue the relationship. Each June students from Phillips Academy, Jemez Pueblo and Pecos, NM travel, live and learn together. The informal interactions spark deep friendships, cross-cultural sharing and meaningful lessons about the importance of place and how the past informs both the present and the future.

[196] *First Moderator*

Ranere, Anthony (Temple University) and Richard Cooke (Smithsonian Tropical Research Institute)

[120] *[Clovis and Other Fluted Point Traditions in Central and northern South America*

Clovis and Fluted Fishtail points have been recovered from a number of localities in both Central and northern South America. In this presentation we examine assemblages from quarry/workshops in Costa Rica and Panama in order to compare the lithic reduction sequence of Central American Clovis to both the North

American Clovis reduction sequence and the Fluted Fishtail reduction sequence from Panama. Because no faunal or floral remains are preserved in Clovis sites, we infer subsistence strategies from the Late Pleistocene ecological contexts in which Clovis sites and isolated points have been found.

Ranere, Anthony [213] see *Cooke, Richard G.*

Rasic, Jeff [62] see *Reid, Devon [7]* see *Tremayne, Andrew H.*

Raslich, Frank (Michigan State University)

[29] *Implications of the Stylistic Effects of Population In-migration on Mississippian and Oneota Projectile Point Assemblages*

Projectile point assemblages from two central Illinois River Valley sites, Larson (11F1109) and Morton Village (11F2) are analyzed to gain an understanding of the morphological and metric changes that occur when an in-migration of outside populations transpires. The Larson site, a primarily Mississippian site with both Mississippian and Oneota populations, provides an excellent unit of analysis for comparison to the Morton Village site. Isolation of the kind and degree of any directional stylistic or metric statistical relationships that occur contains potential to provide archaeologists with deeper insights into how intergroup interaction and migration may impact stylistic variation within lithic assemblages.

Rauh, Whitnie, John Dudgeon (Idaho State University/CAMAS), David Peterson (Idaho State University), Clayton Meredith (Idaho State University) and Nick Holmer (Idaho State University)

[63] *Comparison of Methodological Approaches for Determining Modes of Trace Metal Uptake in Archaeological Skeletal Remains*

By combining high-precision SEM-EDS with the trace element sensitivity of LA-ICP-MS, we demonstrate that it is possible to separate and account for the variable signature of biogenic metal uptake during life, versus diagenetic post-depositional alteration in archaeological bone. Middle Bronze Age human and animal bone is analyzed to determine the probability of identifying copper and bronze producers through trace metal uptake. LA-ICP-MS trace element chemistry calibrated by SEM-EDS can distinguish and quantify patterns of occupational uptake and diagenesis. We feel this combined methodology is a suitable alternative for liquid ICP-MS analysis, which suffers from the homogenizing effects of bulk sampling.

Rautman, Alison (Michigan State University)

[86] *Aggregation in the North American Puebloan Southwest*

The archaeological record of the Puebloan Southwest is characterized very generally by two widespread and obvious changes in settlement pattern: a shift from pithouse architecture to contiguous above-ground structures, and population nucleation, or coalescence, into pueblos that can include many hundreds of rooms. Although the proximate causes of population aggregation vary across the Southwest, these settlement changes express and codify in spatial terms a single social strategy for managing changes in the scale, frequency, and/or intensity of social interactions. The expression of

this social strategy in the American Southwest encompasses what archaeologists recognize as specifically Puebloan towns and villages. [53] *First Chair* [53] *Second Organizer* [53] see Solometo, Julie P.

Ravesloot, John [179] see Gabler, Brandon M.

Raviele, Maria (Indiana University), William Lovis (Michigan State University), Gerald Urquhart (Michigan State University) and John Hart (New York State Museum)

[19] *The Affects of Alkali Processing on Maize Detectability in Carbonized Food Residues*

Employing isotope analysis of carbonized residues to detect maize is increasingly employed by archaeologists in the Americas. Using a series of controlled experiments replicating carbonized food residues, we assess how alkali processing using wood ash may affect maize's detectability in $\delta^{13}C$ isotope assays. Even with high proportions of maize present, C3 producers have been demonstrated to mask the presence of maize, a C4 plant. This results in false negatives for the presence of maize. We report on experimental outcomes that help answer the question: Does alkali hominy processing of maize with ash result in low detectability in carbonized food residues?

Ready, Elspeth (Stanford University)

[2] *Prey choice and skeletal transport strategies during the Mousterian at Gatzarria Cave, southwestern France*
This paper examines Neandertal foraging behaviours at Gatzarria Cave, a Middle to Upper Palaeolithic transition site in the Atlantic Pyrenees. Prey and patch selection by Neandertals from Gatzarria suggest a focus on a single prey species from lowland habitats. Skeletal part patterns are investigated using several utility indices, which demonstrate that transport decisions aimed to maximize the delivery of high-quality marrow fat. The foraging behaviours documented at Gatzarria are considered in the context of broader subsistence patterns in Western Europe during the Middle and early Upper Palaeolithic.

Reber, Eleanora (UNC Wilmington) and Matthew Kerr (UNC Wilmington)

[19] *Diagenesis and Soil-Sherd Interactions in Experimentally Produced Black Drink Residues*
Black drink is a North American native caffeinated tea produced from the leaves of *Ilex vomitoria*. The beverage was an important part of native Southeastern culture, and the leaves of *I. vomitoria* were a potentially valuable trade good during the prehistoric period. As such, the ability to identify archaeological Black drink residues would be valuable to southeastern archaeologists. Black drink was repeatedly made in experimentally produced unglazed pottery. Residue-containing potsherds were buried in several different environmental contexts and then underwent absorbed pottery residue analysis in order to determine how diagenesis and soil-herd interactions would affect the residues.

[19] *Discussant* [19] *Second Organizer*

Reber, Nora [19] see Barker, Andrew L.

Reckin, Rachel [57] see Lee, Craig M.

Reddy, Seetha (Statistical Research, Inc), John Douglass (Statistical Research, Inc.) and Donn Grenda (Statistical Research, Inc.)

[151] *Public Feasting and Mourning during the Mission Period in the Ballona, West Los Angeles*

Feasting and mourning contexts offer unique insights into the cultural perceptions of the relationship between food, material culture and ideology. Recent excavations in the Ballona Lagoon area in west Los Angeles have provided an extraordinary opportunity to study these relationships during the Mission period. Dense deposits of fauna and floral remains, along with other material culture, are interpreted as the remnants of community feasting most likely related to the annual Gabrielino/Tongva mourning ceremony. Our findings from this research paving the path to address the elusive research themes of ritualization of foods and materials, and cultural preferences among complex hunter-gatherer populations.

[151] *Second Chair*

Reddy, Seetha [151] see Ciolek-Torrello, Richard [151] see Van Galder, Sarah J. [151] see Kremkau, Scott H.

Reed, Lori (Aztec Ruins National Monument)

[219] *From Small Site to Big Picture: Ceramics from the Tommy Site and Chacoan Period Developments in the Middle San Juan Region, Northwest New Mexico*

Located on the B-Square Ranch just south of the San Juan River in Farmington, New Mexico, the Tommy Site is a small pueblo occupied from the late AD 900s to the early decades of the 1100s. Ceramics from the site represent an assemblage that mostly predates the late Chacoan period construction at nearby Salmon and Aztec great houses. In this paper, I examine the Tommy Site ceramics in relation to Chacoan period developments in the Middle San Juan and further evaluate the Chacoan migration and emulation models recently applied to the region.

Reed, Michael (Dixon Unified School District) [268]
Discussant

Reed, Paul (Center for Desert Arch.)

[117] *Holding on as Chaco Fell: Salmon Pueblo in the Twelfth Century*

Salmon Pueblo was built at AD 1090 as the first Chacoan Outlier in the Middle San Juan region. Unlike its younger, sister community at Aztec, New Mexico, Salmon passed through its Chacoan occupation quickly, with architectural, as well as social and ritual, changes apparent in the community by AD 1130. As the remainder of the Chacoan World collapsed and readjusted, Salmon's inhabitants assumed a largely local orientation to their economy and social identities. This local adaptation presaged changes that swept across the entire San Juan Basin by AD 1175 and ushered in the rapid growth of the early thirteenth century

Reeder-Myers, Leslie (Southern Methodist University)

[105] *GIS and Radiocarbon Dating in the Service of Landscape Archaeology on Santa Rosa Island, California*
A rich record of occupation on the Northern Channel Islands provides an opportunity to explore landscape-scale approaches to environmental archaeology. I

suggest that people changed the way they settled and exploited their landscape in response to profound changes in the post-Pleistocene environment of Santa Rosa Island, including sea-level rise and consequent restructuring of marine and terrestrial ecosystems. A GIS-based model of Early Holocene environmental change is described, using geographic and paleoecological principles. Thirty new radiocarbon dates add to our understanding of human settlement decisions on the island and test hypothesized relationships between environmental changes and human settlement decisions.

Reeves, Jonathan (State University of New York at Potsdam) and Benjamin Pykles (State University of New York at Potsdam)

[158] *Illuminating Iosepa: Hawaiian Petroglyphs in Skull Valley, Utah*

From 1889 to 1917 the town of Iosepa in Utah's Skull Valley was occupied by mostly Hawaiian converts to The Church of Jesus Christ of Latter-day Saints. Iosepa represents a place of cultural synthesis where the traditional Hawaiian culture of the town's inhabitants and their new Mormon belief system were negotiated in unique and complex ways. One manifestation of this cultural negotiation is the petroglyphs engraved by the people of Iosepa on a large boulder overlooking the town site. The analysis of these petroglyphs is helping archaeologists interpret and understand the cultural dynamics of the site and its inhabitants.

Regnier, Amanda (University of Oklahoma)

[210] *The Intact Dalton Occupation at the Ramos Creek Site in Southeast Oklahoma*

During summer 2010, the University of Oklahoma conducted a Field School in Archaeology at the Ramos Creek site (34Mc1030) in McCurtain County, Oklahoma. While the major goal of the project was to recover materials associated with a 15th century Caddo occupation, excavations revealed an intact Dalton occupation, including a large burned rock feature, making this one of the only excavated components of this age in the southern Ouachita Mountains of southeast Oklahoma. Results of the excavation and the place of Ramos Creek in the regional cultural sequence will be presented.

Reid, Devon (UAF), Jeff Rasic (National Park Service) and Loukas Barton (National Park Service)

[62] *Compositional Variability of Volcanics from Southwest Alaska using PXRF*

Due to the complex archaeological record in southwest Alaska, gaining a better understanding of the ways people used materials in the region is important to reconstruct past cultural dynamics. To examine this, we use XRF technology to provide a direct evaluation of compositional variation of basalt and other low silica volcanic rocks from stratified or radiocarbon dated archaeological sites in the upper Alaska Peninsula and Kodiak Island during the Holocene. Artifacts from selected museum collections and geological source samples are analyzed using a portable XRF (PXRF) machine. Establishing compositional variation of the artifacts provides a foundation to evaluate cultural processes.

Reid, J (University of Arizona)

[99] *Preshistoric Time and Behavior: Jeffrey S. Dean's Critical Role in Grasshopper Research*

Research by the University of Arizona Archaeological Field School in the Grasshopper region of east-central Arizona owes much to the theory, methods, good advice, and experienced fieldwork of Jeffrey S. Dean. This illustrated presentation discusses the specific concepts and individual research projects that he influenced, their impact on interpretations of Grasshopper Pueblo and other sites, and his contributions to the development of Behavioral Archaeology.

Reid, J. Jefferson [18] see *Snead, James E.*

Reid, Kenneth (Idaho State Historical Society) and Matthew Root (Rain Shadow Research, Inc.)

[120] *Clovis in Idaho: Chronology and Technology*

Clovis points litter Idaho's Snake River Plain and adjoining highlands. However, their distinctive manufacturing technology and patterns of re-use have often been submerged and blurred in broader discussions of a regional fluted tradition that includes Folsom and other proximally thinned lanceolates. Furthermore, the temporal priority of a Western Stemmed tradition is sometimes asserted from the absence of an established Clovis chronology in Idaho. We review evidence for a discernible Clovis horizon in Idaho that exploited at least four regional obsidians and several cherts (but no andesites) and that fits within a time frame of 11,200 - 10,800 rcybp.

Reindel, Markus (German Archaeological Institute, Bonn, Germany) and Thomas Stoellner

[267] *Mining Archaeology in the Nasca and Palpa region, south coast of Peru*

While research about mining archaeology in the Andes has focussed mainly on the north coast of Peru, the south coast has been widely neglected despite of some pioneering studies which pointed to the importance of the region. In the interdisciplinary Nasca-Palpa project we documented mining activities in the vicinity of prehispanic settlements. We identified mines and quarries, as well as working places with stone tools. Mineral samples were tested in the laboratory. The preliminary results demonstrate the importance of the region for the production of gold, copper, semi-precious stones and obsidian especially in the Paracas, Nasca and Late Intermediate period.

Reinhart, Katrinka (Stanford University)

[228] *Politics of food at the Chinese Bronze Age site of Yanshi Shangcheng*

Social inequality and ancestor worship are rooted in the Neolithic in China. During this time, ancestor worship was practiced throughout all segments of society but by the early Shang dynasty (c. 1600 BC), characterized by marked social stratification, ancestor worship has become a productive elite institution supported by craft industries and specialized activities. This research examines pottery from elite and non-elite contexts at the site of Yanshi Shangcheng in order to elucidate the role of food and feasting—integral components of ancestor worship and sacrificial ritual in ancient China—in the production of power and maintenance of an elite class.

Reitze, William (University of Arizona)**[231]** *A Geoarchaeological Interpretation of Lake Estancia, New Mexico*

This study presents a model of human land use as it is influenced by environmental change at the Pleistocene-Holocene transition in the Estancia Basin, New Mexico. The Estancia Basin contained the eastern most pluvial lake in the Southwest, presenting a unique opportunity for Paleoindian foraging groups during the Pleistocene-Holocene transition. The suite of resources available in the basin likely differed from those encountered elsewhere on the Southern Plains. A reinterpretation of lake levels, ages, and potential subsistence resources, drawn from geoarchaeological analysis, is compared to archaeological records of land use developed from reanalysis of large surface collections from the basin.

Reitzel Rivera, Hannah (Arizona State University)**[58]** *Exploring "Aztatlán" Social Boundaries through Ethnographic Analogy*

The Postclassic Aztatlán material culture complex, exemplified by a range of highly decorated pottery wares, is found in the modern states of Nayarit, Sinaloa, Jalisco, Colima, Michoacan and Durango--archaeologically speaking, West Mexico. The later, symbol-laden pottery is particularly interesting because of the drastic regional shift it represents from the earlier, minimally decorated red-on-brown and plain wares. Employing an ethnographic analogy to modern and historically documented Huichol gourd bowls, I propose two archaeologically examinable hypotheses about the nature of social interactions within and outside the Aztatlán region that could have lead to this major change in material culture.

Rendu, William (CNRS- TRACES), Sandrine Costamagno (CNRS – TRACES) and Liliane Meignen (CNRS - CEPAM)**[17]** *Neanderthal Hunting Strategies in Southwestern Europe, Variation and Adaptation*

The evolution of behaviors during the transition from the Middle to Upper Paleolithic is an area of major research. While the hypothesis has been proposed that specialized economies appeared during the Early Upper Paleolithic, few studies have focused on this topic in Mousterian context. We address the question of Neanderthal specialized hunting through an overview of different Mousterian assemblages from Southwestern France in the MIS 4/3. These examples suggest that multiple different subsistence strategies were developed by Mousterian populations and specialized economies may have been used in response to specific climatic constraints.

Reseburg, Nicholas [80] *see Leckman, Phillip O.***Reti, Jay (Rutgers University)****[74]** *Darwinian archaeology and its application to Oldowan lithic analytical studies in East Africa*

Lithic analysis has traditionally used typologies to infer patterns of technology, culture, or function. These typologies are often rooted in qualitative methodology that provides an unstable foundation for systematic behavioral interpretation. Recent theoretical approaches to lithic analysis include Darwinian Archaeology, which

considers nonsomatic, human-produced objects as products of selection. Though selection theory, as an archaeological tool, has gained momentum in America, evolutionary approaches to lithic analysis lack in African archaeology. This paper examines 1) the utility of applying Darwinian approaches of lithic analysis to Oldowan technologies and 2) what effects a quantitative analytical system will have on potential archaeological conclusions.

Reuther, Joshua [179] *see Gelvin-Reymiller, Carol P.***Reynolds, Cerisa (University of Iowa)****[135]** *Dinner at the Darkmold Site: Faunal Remains from a Basketmaker II Site in Southwestern Colorado*

The Darkmold site is a Basketmaker II site located near the modern town of Durango in southwestern Colorado. This poster will present the preliminary results of an ongoing analysis of the more than 13,000 non-modified faunal specimens recovered from Darkmold between 1998 and 2008. The poster will focus on species representation, processing patterns, and the taphonomic state of the assemblage, while also exploring what the fauna from Darkmold can tell us about dietary choices at the origins of agriculture in southwestern Colorado.

Reynolds, Georgeanne (US Army Corps of Engineers)**[173]** *Storage Practices of the Protohistoric Inupiat: a Window Into Cultural Behavior*

During 1981-83, archaeologists from SUNY Binghamton, under the direction of Albert A. Dekin Jr., excavated several house mounds at the Utqiagvik site in Barrow, Alaska. Houses, some abandoned about 500 years ago, were completely excavated, yielding completely new data sets on household activities and spatial organization. One mound in particular yielded the remains of five partially intact bodies that had been killed while they slept—massive and thick sheets of sea ice overtopped the bluff and crushed the house, leaving all artifacts in their last used position. New data were discovered on house structure and storage patterns, topics typically overlooked in the ethnographic record which tended to focus on whaling and other subsistence activities. This paper examines storage in the small, enclosed space that was the Inupiat iglu, suggesting that patterns of what is absent and what is present in the house represents a glimpse at the cultural organization of a prehistoric household.

Rhode, David (Desert Research Institute), David Schmitt (Desert Research Institute), David Page (Desert Research Institute), Rachel Quist (US Army Dugway Proving Ground) and James Feathers (University of Washington)**[180]** *Starch Grains, Bunny Bones and Luminescence Dates from Fcr Features at the One-Eyed Rabbit Site, Dugway Proving Ground, Utah*

The One-Eyed Rabbit Site (42To567) is a large open multi-component resource procurement locality east of the Great Salt Lake Desert, Utah. Our investigations center on extracting subsistence information and chronology from the numerous fire-cracked rock (FCR) features present. Chronological proxies (14C, obsidian hydration, and luminescence) indicate sporadic occupation spanning the Holocene since at least ~8600

cal BP. Faunal and starch analysis indicate use of lagomorphs and several plant taxa. This case study highlights the potential of the humble FCR feature as a chronometric diagnostic and a repository of microfossil-based subsistence data.

Rice, Erin (University of Illinois at Chicago)

[63] *An Analysis of Obsidian from the Pre-Pottery Neolithic of the Near East using XRF and GIS*
Understanding how trade and exchange may have occurred within and between groups is one of the primary aims in archaeology. This study uses XRF analysis to determine the sources of obsidian found at sites in the South-Central Levantine PPN in combination with GIS software to map potential trade routes using cost distance and least-cost path models. The analysis examines how obsidian, and potentially other materials, may have moved between sites as well as the possible implications for reconstructing social exchange and organization through its distribution.

Rice, Glen (Rio Salado Archaeology) and Christopher Watkins (Arizona State University)

[52] *A Critical Assessment of Late Prehistoric Kayenta In-Migration in Central Arizona*
Proponents of the Coalescence Model use multiple lines of evidence to make convincing arguments that Kayenta populations moved into Eastern Tonto Basin and the San Pedro en masse, establishing new settlements with distinctively Kayenta material culture. A similar claim for Kayenta in-migration into the Phoenix Basin and proposed Verde Confederacy is significantly weaker, and not supported by multiple lines of evidence. Migration would tend to follow established exchange/social relationships, and we discuss alternate cases (using ceramic, architectural and mortuary data) in which migrations into the Phoenix Basin occurred along well-documented connections to the Middle Verde and Lower Gila.

Rice, Glen [158] see *Higgins, Howard C.*

Rich, William

[239] *North Coast Digital Heritage Project*
The Cultural Resources Facility at Humboldt State University is currently working in cooperation with north coast agencies and tribes to develop the North Coast Digital Heritage Project (NCDHP). The NCDHP is open to all parties that are interested in the region. The NCDHP's goal is to acquire, manage, and make available geographic and historic information within the Humboldt Base Meridian using Geographic Information Systems and web-based databases. This digital library will assist in the identification, management and preservation of the region's heritage. To this end, the NCDHP is accumulating maps, records, photographs and any documents which support this.

Richard, Hervé [192] see *Rius, Damien*

Richards, John (University of Wisconsin - Milwaukee)

[104] *The Archaeology of Sub-Roadbed Deposits and the Developmental Horizon Oneota Occupation of the Schlage Site*

The inadvertent disturbance of human remains in Calumetville, Wisconsin in July 2009 occasioned

archaeological investigations that led to the identification of the Schlage site and excavation of 78 pit features. Pit fill included a variety of domestic debris as well as an additional set of human remains. What is remarkable about the Schlage site materials is that the archaeological deposits were preserved beneath the roadbed of a United States highway. The presence of well-preserved archaeological deposits beneath a modern U.S. highway suggests that archaeological monitoring may be prudent during reconstruction of existing roadways when the route traverses archaeologically sensitive areas.

[104] *First Chair*

Richards, John D. [104] see *Schneider, Seth A.*

Richards, Julian (University of York Archaeology Data Service) [144] *Discussant*

Richards, Michael (University of British Columbia), Alejandra Diaz (University of British Columbia), Suzanne Villeneuve (Simon Fraser University) and Brian Hayden (Simon Fraser University)

[176] *Dietary isotope analysis of canids and other fauna from the Keatley Creek site*

We report on carbon and nitrogen dietary isotope analysis of dogs and other fauna from the Keatley Creek site. This study was undertaken to explore the nature of canid diets at this site through time, and especially to focus on the relative importance of salmon in their diets. Although dogs are not a direct proxy for humans in dietary isotope studies, their diets are influenced by human dietary practices, and therefore indicative of human subsistence strategies and activities. The isotope results are compared to results from humans and canids from other sites in British Columbia.

Richards, Michael [255] see *Oelze, Vicky M.*

Richards, Patricia (Univ of Wisconsin-Milwaukee) and Ashley Dunford (University of Wisconsin-Milwaukee)

[104] *Formal Burial or Disposal? Human remains recovered from an Oneota site in Calumetville, Wisconsin.*

In August of 2009, human remains were inadvertently disturbed during construction work associated with USH 151 in Calumetville, Wisconsin. One adult was present in partially disturbed contexts beneath the existing pavement of USH 151. An additional burial was encountered during subsequent archaeological monitoring. Data suggest the two burials are located within or near the domestic portion of what was a substantial village. This paper presents the analysis of both burials and compares the context from which each burial was recovered. It is argued that two very different disposal practices are represented at this Developmental Horizon Oneota component ca. A.D. 1200-1300.

[104] *Second Organizer*

Richardson, James (University of Pittsburgh and Carnegie Museum) and James Adovasio (Mercyhurst College)

[196] *The Robert S. Peabody Museum and the Peopling of the Americas: the Sites, Issues and Debates*

The question of the timing and routes of entry into the

Western Hemisphere is a major research question in American archaeology. The debate has swung back and forth between a late entry versus an early presence in the Americas. The Robert S. Peabody Museum of Archaeology has, at times, been at the center of this controversy. The research and collections made by Moorehead, Byers, Johnson, Bullen, MacNeish and Bradley will be discussed in the context of the history of the debate emphasizing how their research helped shape the current theories on the peopling of the Americas.

[196] *Second Organizer*

Richards-Rissetto, Heather (HUMlab, Umeå University) and Jennifer von Schwerin (University of New Mexico)

[128] *Visualizing Copan: 3D Perspectives from an Ancient City*

This paper explores recent contributions of 3D Modeling, Geographic Information Systems, and other geospatial technologies in providing new methods, tools, and perspectives to study ancient social dynamics at Copán, Honduras. Our work focuses on developing a new platform for an online, searchable database that brings together GIS maps and highly-accurate 3D models in a VR environment on Copán's ancient architecture. In particular, we will present a prototype of a 3D simulated landscape of Copán and discuss the potential roles that this 3D landscape can play in teaching and research in Honduras.

Richerson, Peter (UC Davis), Charles Efferson (University of Zurich) and Robert Bettinger (UC Davis)

[43] *Lotka Volterra models of hunting and gathering with techno-social evolution*

The Lotka-Volterra equations are used to represent species interactions in community ecology including the interactions of predators, prey and competitors. They are a natural way to model human interactions in ecological communities. The main peculiarity of humans in that cultural evolution leads to rapid changes in human social organization and toolkits compared to the slower genetic changes in our prey and competitors. Simulations suggest that humans readily evolve into superpredators that over-exploit prey and collapse. On the other hand, hunter-gatherers that shift from mainly animal to mainly plant resources may have more stable "donor controlled" population dynamics.

Richman, Jennifer (US Army Corps of Engineers, Northwestern Division) [184] *Discussant*

Rick, John [233] see Koontz, Cassandra S.

Rick, Torben [105] see Jagani, Sheel A. [263] see Bond, Kristina J [105] see Hofman, Courtney [123] see Braje, Todd J.

Riel-Salvatore, Julien (University of Colorado Denver), Roberto Maggi (Direzione regionale per i beni culturali e paesaggistici della Liguria), Gabriele Martino (Direzione regionale per i beni culturali e paesaggistici della Liguria) and Stefano Rossi (Direzione regionale per i beni culturali e paesaggistici della Liguria)

[218] *(Re)Establishing the age of the "Young Prince" of*

the Arene Candide

The 'Young Prince' of the Arene Candide (Italy) is one of the most lavish Upper Paleolithic burials known. Since its discovery in 1942, the typology of the associated assemblage and radiocarbon dates have led to his being attributed variously to the Aurignaco-Gravettian, the Gravettian, and even the early Epigravettian. A direct date of ca. 23.4kya on the Young prince himself did little to settle the issue. Renewed field and archival research since 2008 has allowed us to clarify the Prince's stratigraphic position and establish definitively his Gravettian age, with implications for the site's Upper Paleolithic sequence as a whole.

Riffe, Jed (Producer/Director Ishi, the Last Yahi), Jack Kohler (United Auburn Indian Community), Kyle Hecht (Jed Riffe Films + Electronic Media), Zumilra Gamito (Jed Riffe Films + Electronic Media) and Orin Starn (Duke University)

[77] *Ishi's Brain*

ISHI'S BRAIN links the fight for the repatriation of Ishi's brain with inquiry into the morality of science and the legacy of the last Yahi, showing how different people, Native and non-Indian, have competed to appropriate his body, image, and memory for different purposes. Exclusive footage from the repatriation campaign of 1999 culminating in Ishi's memorial makes this only film able to tell this story. The film supplements Jed Riffe's past award-winning documentaries ISHI, THE LAST YAH! and WHO OWNS THE PAST?, which documents the American Indian struggle for control of their ancestral remains, updating both for new audiences through an integrated approach to history.

Riggs, John (Natural Resources Conservation Service, Arkansas), Diana Angelo (Natural Resources Conservation Service) and Juliet Morrow (Arkansas Archeological Survey)

[87] *Arkansas NRCS and Section 106: Process versus Preservation*

In July 2008, the SHPO recommended a survey in advance of a wetland restoration project. Upon arrival in August 2008, I found that all earthmoving had been prematurely completed thus creating several small impoundments along the first terrace of Cache River in east Arkansas. One shell-filled Mississippian trash pit was subsequently exposed. In danger of being destroyed, this unique feature was completely recovered without mandated SHPO coordination. The feature was saved but NRCS was accused of foreclosure. The limitations of the 106 process could have resulted in the loss of the resource.

Riley, Timothy (Paleoethnobotany and Palynology Labs, TAMU) and Phillip Johnson (Kentucky Heritage Council)

[35] *A Microbotanical Analysis of an Umu Feature from Fatumafuti, Tutuila, American Samoa*

This poster presents preliminary data from a microbotanical analysis of an Umu (oven) feature at the site of Fatumafuti on the island of Tutuila, American Samoa. This site was a permanent residential site from 1000 BP through contact. The umu feature had incredible organic preservation for the region due to the calcareous nature of the sediments at the site and was selected for further analysis. A column sample of the feature fill was

collected for starch and phytolith analysis. The recovered microfossils were identified with reference to the major cultivated food resources of the Polynesian diaspora.

Rinck, Brandy [124] *see Shantry, Kate A.*

Rios, Jorge (Zona Arqueologica de Monte Alban)

[95] *Un Juego de Pelota en Lambityeco:*

Consideraciones Preliminares

La Zona Arqueológica de Lambityeco, en Tlacolula de Matamoros, Oaxaca, comprende un área donde pueden observarse restos arqueológicos de dos apogeos. El primero y menos estudiado, Brawbehl-Yeguih, uno de los primeros asentamientos urbanos del Valle. El segundo momento, Lambityeco, posee una riqueza extraordinaria para comprender la reintegración de la región, después de los tiempos de Monte Albán como centro rector. En este trabajo se presentarán los resultados de la presencia de un elemento mesoamericano como el juego de pelota en un área escasamente estudiado para la época, así como las implicaciones preliminares, espaciales y temporales, que derivan de este hecho.

[95] *First Chair [237]* *see Bauer-Clapp, Heidi J.*

Ríos, Dante García [182] *see Stoll, Marijke M.*

Ripy, John [64] *see Mink, Philip B.*

Rissolo, Dominique [221] *see Glover, Jeffrey B.*

Ritchey, Douglas (Indiana University of Pennsylvania)

[168] *The Ahtna Fish Weir Site: Weir are the Fish?*

Recent investigations at the Ahtna Fish Weir Site (49-GUL-380), located along the Gulkana River in Gulkana, Alaska, provided a new basis for addressing Gulkana-Gakona Ahtna site use, subsistence, and seasonal movements. Results of test excavations including radiocarbon dating and faunal analysis are surprising due to the apparent lack of fish remains. These findings are compared to data from more fully excavated sites in the area including the Paxson Lake Point, Knoll, and Ringling Material Source sites, providing a better understanding of historic and prehistoric Ahtna land use strategies while suggesting a direction for future research.

Rius, Damien (Université de Franche-Comté), Didier Galop (Laboratoire GEODE, Université Toulouse II-le Mirail), Boris Vannière (Laboratoire Chrono-Environnement, Université de Franche-Comté) and Hervé Richard (Laboratoire Chrono-Environnement, Université de Franche-Comté)

[192] *Holocene Anthropogenic Fire Regimes as Documented by Sedimentary Charcoal and Pollen Analyses in the Pyrenees Mountains, France*

The onset of the Neolithic in Europe and the transition from hunting and gathering to agriculture as the main mode of subsistence promoted fire as a major tool for landscape opening and management. Natural fire regimes were then impacted by human activities depending on the ecosystem fire sensitivity. Intemperate mountain zones such as the Pyrenees, fire is a common tool for modern pasture management but we still lack a long-time overview of past fire use. This paper deals with human impacts on natural fire regimes by discussing the context of Holocene climatic and vegetation changes.

Rizvi, Uzma (Pratt Institute)

[189] *Crafting Resonance: Third Millennium BC Copper Arrowheads from Ganeshwar, Rajasthan.*

Crafting copper objects is often understood through technological ingenuity and metallurgical analysis. Using the corpus of copper arrowheads from Ganeshwar, Rajasthan as a case study, this paper investigates the simultaneous constructions of social and economic environments that reflect subjectivities within populations in which these objects were made, used, and circulated, through the concept of resonance. The notion of resonance is theorized as a form of power that the object has beyond its formal boundaries within larger planes of perception creating dynamic relationships between the object and the viewer/user/maker, illustrating cultural decisions based on forms of the object as vibrant matter.

Rizzo, Florencia [60] *see Scheinsohn, Vivian G.*

Robb, John (Cambridge University), Christopher Knüsel (University of Exeter) and Maryanne Tafuri (Cambridge University)

[237] *From bone to stone: processing the dead at Scaloria Cave, Italy*

Burial ritual in much of Neolithic Europe is often stereotyped as single burial in villages, but the reality was much more diverse and interesting. This paper discusses burial ritual at the Early-Middle Neolithic burial and "cult of water" site of Scaloria Cave, Italy. In contrast to rites practiced in nearby villages, the dead at Scaloria Cave were subject to a prolonged procedure of defleshing with stone tools and secondary deposition; detailed taphonomic study reveals different patterns for juveniles and adults, and through isotopic analysis we also investigate the relation between how the dead were treated and where they came from. This death ritual is put into the context of the well-known Neolithic way of life in southeastern Italy and the unique ritual meanings attached to Scaloria Cave.

Roberts, Christopher (Arizona State University) and Sean M. Bergin (Arizona State University)

[42] *Complex objects, entangled lives: using Germanic animal art as a record of culture contact in early medieval England.*

Individuals make choices on how to act based on their past experiences. When people from different cultural backgrounds meet, their personal experiences become entangled with new customs introduced by foreigners. Artistic systems preserve the way individuals entangled their past experiences as a series of references to other aspects of reality embedded in representational objects. By tracing how objects of art were fashioned to make references, and what these references emphasize or ignore, I hope to better understand the acculturation process of early medieval English people in the 5th and 6th centuries AD.

Roberts, Harry [265] *see McKillop, Heather*

Roberts, Heidi and Nikki Borchardt

[18] *When the Elders Speak, Just Listen*

Great Basin archaeologists, who focus on prehistory, spend the lion's share of their careers studying past Native American cultures. Their research typically explores spatial and temporal patterns of material

culture—artifacts and ecofacts—with the goal of reconstructing the past and understanding cultural change. This paper examines the unique ways that Native Americans and archaeologists view the past, and it explores the myth that traditional cultural knowledge was lost during the dark days of Euroamerican colonization. The paper also provides examples of how improved communication and cooperation can be mutually beneficial to Tribal groups and to the archaeological community.

[215] *Discussant*

Roberts, Theodore (PaleoWest)

[136] *Payson Tradition Fieldhouses*

PaleoWest conducted surveys for the USFS of nearly 7,000 acres near Payson, Arizona. Among the 143 newly discovered sites documented during these projects, we recorded 47 circular masonry structures. These fieldhouses date to the Payson Tradition (A.D. 1100-1250) which arose from the Central Arizona Tradition during the Star Valley Phase (A.D. 1000-1150). Despite numerous similarities, these fieldhouses display considerable variability, raising questions of function, chronology, and affiliation. This poster presents the results of a pilot study comparing the locations, morphology, and assemblages of these structures. The patterns observed suggest three fieldhouse types were occupied during this period.

Robinson, Brian (University of Maine)

[196] *The R.S. Peabody Museum: Foundations of Northeast North American Archaeology*

The Robert S. Peabody Museum was a major center for sustained and organized research on Northeastern archaeology throughout much of the 20th century, alongside extensive research projects across the Americas. Recent theoretical developments demonstrate the cumulative and critical nature of the Peabody's early research, including regional surveys, pioneering multidisciplinary research and the excavation of irreplaceable cultural resources. The legacy of maintaining copious documentation and collections is a service to Native American cultural studies, as it is a responsibility and financial challenge with changing missions of the museum. Highlights of Northeastern studies and recent research are presented.

[265] *see Surprenant, Ann K.*

Robinson, David (University of Central Lancashire)

[48] *A Land of Boundaries*

At the western boundary of North America and the Pacific, California is a land defined as a boundary. California provides an interface between coast and interior, maritime and desert, sea to Sierran peak. Within this physical bounded space, the rich tapestry of Indigenous California provides a complex mosaic of linguistic boundaries; in historical times, boundaries existed between indigenous and European ethnic groups. In this contribution, while discussing these physical and cultural boundaries, I traverse theoretical boundaries defining our research to see if blurring the line might be better than towing it. After all, boundaries are meant to be crossed.

Robinson, Eugenia and Gregory Borgstede (U.S. State Department)

[67] *Complexity and Regionalization in the Late Classic Maya Highlands*

The Late Classic period in the Maya highlands has been overshadowed by significant and long-standing research on the Preclassic and Postclassic periods. Recent investigations in two different highland areas, however, have underscored the regional complexity of the archaeological record during the Late Classic. In this paper the authors question highland homogeneity during this period by examining categories of material culture across the region. They hypothesize that the region displays great sub-regional heterogeneity rather than an overarching sociocultural uniformity as often implied by external perspectives.

Robles Castellanos, Fernando (Centro INAH Yucatán)

[14] *Discussant*

Robles Garcia, Nelly (Instituto Nacional de Antropología e Historia)

[95] *Atzompa en la definición urbanística y espacial de la antigua ciudad de Monte Albán*

El proyecto arqueológico Conjunto Monumental de Atzompa, en cuatro años ha recuperado datos de los diferentes aspectos de este componente de Monte Albán. Representante de la tradicional arqueología mexicana, este proyecto explora al sitio, lo interpreta, y lo restaura para ponerlo en valor. Constituye un ejemplo de la relación entre arqueología y desarrollo comunitario moderno. Los hallazgos ofrecen respuestas a preguntas que ya no había sido posible hacerle a la arquitectura anteriormente restaurada de Monte Albán. Estudios de la cerámica nos muestran diseños y elementos propios de este sitio, que en ocasiones contrastan con hallazgos realizados durante el proyecto original.

[95] *Second Organizer*

Rocek, Thomas (University of Delaware)

[53] *Housing on the Periphery: Pithouse Change and Variation in Late Prehistoric Southeastern New Mexico*

When John Speth decided to pursue research in the United States Southwest, he settled himself squarely on its geographic and environmental fringes in Southeastern New Mexico. There, he has documented striking, rapidly changing economic diversity. Having followed him into the wilderness, I explore one aspect of this diversity: the range and rapid shifts in architecture in the area. I examine the distribution and variation of pithouses across space, time and environment, considering the implication of these patterns for contrasting and shifting ecological and social adaptations, as well as for variation within these systems.

Rochette, Erick (Penn State University)

[116] *Out of control?: Rethinking assumptions about wealth goods production and the Classic Maya*

Objects crafted from jade played a prominent role in prehispanic Mesoamerica from at least the Middle Formative period (ca. 1000-400 B.C.). Based primarily on the consumption of jade artifacts by ancient Maya elites, scholars have argued that their production was under the direct control of elite members of society. Recent research in the Middle Motagua Valley and elsewhere suggest that the production of wealth goods varied much more widely than previously assumed. This paper brings together this recent evidence and cross-cultural

ethnographic data to propose new ways of conceptualizing the role of elite in Classic Maya wealth goods production.

Rock, Carolyn [81] see *Prilliman, Keith L.*

Rockman, Marcy (US EPA-NHSRC & AAAS/UCLA), Paul Pettitt (University of Sheffield) and Simon Chenery (British Geological Survey)

[142] *The Cretaceous and the Creswellian: New LA-ICP-MS Analysis of the Use and Movement of Flint during the Early Occupation of Late Glacial Britain*

Research is underway to reconstruct flint transport patterns and related landscape learning processes for hunter-gatherer groups who resettled Britain 14-15,000 years ago. A 2003 ICP-MS pilot study of Cretaceous Chalk flint suggested that flint exposures can be characterized into regions and that flint artifacts from five widely distributed late glacial sites appear to have been made from material most similar to flint from southwestern England. Results presented here include reanalysis of pilot study samples along with source material from 14 new exposures, artifacts from 13 late glacial sites, including recently excavated artifacts from sites at Creswell Crags.

Rodd, Ben [154] see *Glidden, Catherine L.*

Roddick, Andrew [267] see *Klarich, Elizabeth A.*

Rodman, Julie-anna

[195] *Boom and bust in White Pine County, Nevada*

In 1868 "Going to White Pine" became the rallying cry of miners throughout the west. Within two years the White Pine district grew to become the second largest population center in Nevada. The mining boom was short lived and by the early 1870s most settlements were abandoned as miners left for the next bonanza. The district died a quiet death when the last town was abandoned in 1885. The White Pine experience is an example of the dramatic rise and fall of mining communities and illustrates the rapid changes wrought by mining in the west.

Rodrigues, Teresa (Gila River Indian Community), Hoski Schaafsma and Alan Sinclair (Bureau of Indian Affairs, Pima Agency)

[192] *Landscape Ecology and Anthropogenic Fire in the Sonoran Desert: Hohokam and O'odham Management Strategies*

The Sonoran Desert offers an opportunity to study anthropogenic fire as a landscape management tool. Evidence for anthropogenic fire in the prehistoric Hohokam archaeological record has been documented and ethnographic data from the O'odham people informs us that there is a history of landscape management employing fire. The Gila River Indian Community Fire Archaeology Program, as part of ongoing research, combines ecological, archaeological, and ethnographic data to help construct an understanding of fire management in Central and Southern Arizona over the past several millennia.

Rodriguez, David (Pontificia Universidad Católica del Perú - PUCP), Reynaldo Bustinza Bustinza (Instituto Nacional de Cultura), Fredy Zegarra Zegarra

(Instituto Nacional de Cultura), Lucio De la Rosa (Instituto Nacional de Cultura) and Norfelinda Cornejo Cornejo (Instituto Nacional de Cultura)
[269] *Rediscovering Saqsaywaman: The Qochapata Sector*

Although located in the heart of Saqsaywaman Archaeological Park, the very existence of Qochapata remained unknown until very recently. Excavations since 2005 have revealed classical Inca-style buildings directly associated with a huaca situated alongside the Inca trail that leads to the Contisuyo. To understand the role and importance of the site, the Proyecto de Restauración y Puesta en Valor, Sector Qochapata had focused on spatial analysis relating the site's findings and architecture to the other sectors of Saqsaywaman Park. The first results of this research are shown in this contribution.

Rodriguez, Erin (University of California, Berkeley) and Kathryn G. Barca (George Washington University)

[55] *Haudenosaunee Women and Power in the Domestic Context: an archaeological case study*

Power systems and everyday household routines are not independent parts of societies but are highly interconnected. For the Haudenosaunee of eastern North America women, as well as households, were central to the regulation of power. In this study, ceramic and lithic attribute analyses are employed to show how activity areas can be used to study power systems by revealing patterns of household organization. The use of these analyses shows the importance of considering all available artifactual data, not only diagnostic pieces. This paper uses such information to propose how Haudenosaunee households maintained egalitarianism by dividing power among women.

Rodriguez, Monica (Centro Inah Yucatan)

[14] *"Identifying early movement population Among the Preclassic Maya"*

The excavations in the Preclassic period site of Caucel, Yucatan, have led to the recent discovery of 11 individuals from middle preclassic and late preclassic. Using stable isotopes we evaluate evidence with the purpose of determine the place of origin of these individuals. This paper analyzes the biographical and associated ceramics data of the findings. We discuss if there was an ethnic shift between middle and late Preclassic times in the osteological sample gathered at Caucel in terms of the relevance of this population movement as indicator of early trade or contacts between mesoamerican population.

Rodríguez López, Miguel [204] see *Pestle, William J.*

Rodríguez Ramos, Reniel [204] see *Pestle, William J.*

Rogers, Alan R. [126] see *Broughton, Jack M.*

Rogers, Alexander (Maturango Museum) and Anna Steffen (Valles Caldera Trust)

[97] *How in the world does obsidian hydration work?*

Despite early reports of the demise of traditional optical obsidian hydration dating (OHD), today there are signs of rejuvenation. This paper takes a sober look at the current state of OHD methodology because the success of this

chronometer for nuanced questioning about prehistoric societies depends on soundness of method. We assess obstacles facing the technique by examining several sources of uncertainty and error—ranging broadly from measurement accuracy to modeling of the hydration process. Factors that need to be better understood include intrinsic variability (obsidian elemental composition and water content), environmental factors, and taphonomy (burial history: duration, disturbances, and depth).

Rogers, J. (Smithsonian Institution)

[54] *Settlements and Community in the Dynamics of Inner Asian Empires*

By 200 B.C. Inner Asia saw the development of expansive and complex political systems. At the heart of these polities was a concept of community that cross-cut important dimensions of residence, kinship, ethnicity, and political affiliation. For Inner Asia, community was linked to issues of mobility, scale, extra-local interactions, non-fixed property, dispersed control hierarchies, and the economics of multi-resource pastoralism. Based on a sample of 15 polities several patterns emerge that highlight how political processes altered and incorporated community and place in the building of fortified settlements, palaces, monasteries, and other constructions on the landscape.

[229] *Discussant*

Rogers, Julie [146] *see Warden, Robert B.*

Rogers, Michael (Ithaca College), Perri Gerard-Little (Cornell University), Kurt Jordan (Cornell University) and Kevin Hurley (Ithaca College)

[55] *Understanding the Built Environment at the Seneca Iroquois White Springs Site using Large-scale, Multi-instrument Archaeogeophysical Surveys.*

A landscape-scale conception of the Seneca at the White Springs site is important for understanding their built environment during a period of residential upheaval. During such periods, expedience in construction and interactions with multiple cultural traditions can lead to changes in settlement patterning and architecture. This paper reports on approximately five hectares of high-resolution, multi-instrument archaeogeophysical surveys. We will discuss the benefits of our mixed method approach (excavation, surface survey, historic research, and archaeogeophysics) and how the resulting expanded access to the site allowed engagement with layered, temporal contexts and the gathering of otherwise inaccessible information.

Rogers, Richard (USDA-NRCS) and Bruce Rothschild (Biodiversity Research Institute, University of Kansas Museum of Natural History)

[87] *Bejel on the West Coast of North America: Evidence for Pre-Columbian Trans-Pacific Asian Contact*

The spread of the disease, bejel, is blocked by cold winter regions. Its Pre-Columbian presence on the West Coast of North America (by 2000 to 4000 B.P.) indicates that it entered the New World by a route other than through the Bering Strait region. The "North Pacific Drift Hypothesis" proposes that bejel reached the New World via Asian vessels caught in the current of the North Pacific Drift. Evidence for this includes the strong geographic correlation between the ancient distribution of

bejel in the New World, the coastal region of North America brushed by the North Pacific Drift, and the distribution of wrecked junks documented by early European contact.

Rogoff, David (University of Pennsylvania)

[31] *Social Capital Exchange in the Classic Period El Paraiso Valley, Honduras*

Commodities are more than merely objects of economic transfer. Goods often carry value that stems from the context of their production or exchange. In instances when these other types of value are visible archaeologically we may be granted a window into how societies stratify not merely in vertical, but also horizontal ways. Following Bourdieu's concepts of social and cultural capital, voluntary group affiliations are examined at the Late Classic sites El Paraiso and El Cafetal, Honduras with the aim of determining how certain identities lead individuals to differentially value certain types of goods and specific exchange partners.

Rojas, Juan Martín [147] *see Porcayo, Antonio*

Rojas, Martin [224] *see Eckhardt, William*

Rojas Vega, Carol [241] *see VanValkenburgh, Nathaniel P.*

Roland, Jennifer (University of Pittsburgh) and Randi Gladwell (Vanderbilt University)

[70] *Domestic Use of Camelids in the 7.C9 Structure of Khonkho Wankane*

This paper will examine the camelid remains of an individual residential structure (Structure 7.C9) at the site of Khonkho Wankane, a Formative Period (1-400 AD) archaeological site located in the Southern Lake Titicaca Basin. This close up of a residential component of the broader Khonkho Wankane cultural center reflects the non-ritual utilization of large mammals. Domestic consumption patterns of this socio-politically incorporated structure can offer insight into the daily integration and interaction of households within the community.

Romano, Francisco (University of Pittsburgh) and Carlos Sanchez (Universidad Nacional de Colombia)

[93] *Kinship, Land, and Food Production. Socio-economic interactions in pre-Hispanic Alto Magdalena (Colombia) and Oaxaca (Mexico)*

The study of kinship has been a seminal element for the explanation of economic relations of production distribution and transmission of goods and services, of political integration of even larger communities, and ideological definitions. The study of kinship social relations is a fact of singular importance to understand the emergence and subsequent development of political economies, the institutionalization of leadership, and the establishment of social inequalities. This article explores the relationship among kinship, access to land, and food production as variables that influenced social interactions and transformations in the ancient societies of the Alto Magdalena (Colombia) and Oaxaca (Mexico).

Romano-Pacheco, Arturo [237] *see Tiesler, Vera G.*

Rondeau, Michael (Rondeau Archeological)

[120] *Fluted Point Studies in the Far West*

The study of fluted points in the Far West has been largely discouraged by the lack of Paleoindian sites with primary context, associated Pleistocene fauna and materials suitable for radiocarbon dating. As a result, the recognition of non-Clovis fluted point types in the Far West has lagged behind some other regions of North America. The CalFLUTED research project has studied 523 bifaces of which 458 are fluted. These specimens are mainly from California, Oregon and Nevada. Preliminary findings and lessons learned from these on-going studies are presented.

Roney, John [199] *see Hard, Robert J.*

Roney, John R. [244] *see MacWilliams, Arthur C.*

Roos, Christopher (Southern Methodist University) [192] *Discussant*

Roos, Christopher [199] *see Sullivan, Alan P.*

Root, Matthew [120] *see Reid, Kenneth C.*

Rorabaugh, Adam (Washington State University) [232] *Exploring Variation in Sociocultural Transmission Between Blade and Hafting Elements of Chipped Stone and Ground Slate Points in the Salish Sea, Northwest North America.*

On the Northwest Coast, archaeologists have documented clear shifts in social organization occurring over the past 3,000 years. The implications of this transition for social learning have been less explored. Cultural transmission models suggest that factors such as the growing importance of prestige may be reflected in material culture (biased transmission). Formed lithics from the Salish Sea were examined to determine whether learning followed models of neutral evolution (increasing variation) or directed change (promoting consistency), suggesting an increasing importance of prestige. These data suggest neutral evolution pointing towards a mosaic of factors contributing to the lithic technologies of the region.

Rosales Tham, Teresa [156] *see Gaither, Catherine*

Roscoe, James [239] *Discussant*

Rosen, Arlene (Institute of Archaeology (University College London)) [133] *Geoarchaeological Research in the Lands of Qufu*
Geoarchaeological research was undertaken around the historic center of Qufu in Shandong Province, China during the first field season of the "Landscape of Confucius" Project. This project seeks to understand the spiritual, historic, economic and political significance of this region surrounding the birthplace of Confucius. Geoarchaeological sections and cores show a number of Holocene geomorphological episodes. These were related to both environmental and human-induced landscape changes in the region. Preliminary results suggest one of the most significant landscape impacts was caused by major deforestation during the later Zhou or the Early Han period (first millennium BCE).
[133] *First Chair*

Rosen, Steven (Ben-Gurion University), Aaron

Shugar (Buffalo State College) and Jacob Vardi (Ben-Gurion University)

[22] *Wear, Attributes, and Types in Sickle Segment Analysis: Odellian Perspectives*

Analyses of glossy blades from Tell Jemmeh in southwestern Israel (5th through 2nd millennium BC) using techniques covering a range of scales and approaches confirms their primary function as sickle segments, and offers insights into such issues as relative use-life, value, and specialization. In particular, increased use-life is reflected both in heavier gloss, clearly a function of abrasion. There is a significant correlation between heavier gloss and increased edge retouch. These probably reflect increased value; both are correlated with greater production specialization. Use-life, value, and specialization all increase in time, reflecting a trajectory increasing economic complexity.

Rosenfeld, Silvana (Stanford University)

[70] *Foodways and Socio-politics in the Wari Empire: examples from the core and the province (Ayacucho and Cuzco, Peru AD 600-900).*

In Andean archaeology, the social meanings of food have been mainly examined through the analysis of culinary equipment- ceramic types and styles. However, our current understanding of Andean foodways can be improved by the addition of a zooarchaeological perspective. Examination of actual food refuse can reveal the factors that produce variation in the use of animals in daily and ritual consumption. In this paper I examine the ritual and quotidian animal use through the faunal analysis of three archaeological sites (Conchopata, Cotocotuyoc, and Chokepukio) to generate new information about how the Wari presence impacted the local communities in the province

Rosenstein, Dana (University of Arizona), Robert T. Downs (University of Arizona) and Pamela Vandiver (University of Arizona)

[5] *Structure and function: mineralogical analyses of tempers in Late Iron Age ceramics from southern Africa using optical petrography, x-ray diffraction and raman spectrometry*

Mineralogical analyses of ceramics from the Late Iron Age of southern Africa show that lustrous, platy and fibrous mineral tempers were commonly added to clay by the late 18th century CE. One indigenous response to colonialism was large-scale centralization. Settlement aggregation had significant effects on the scale of production at these new centers. Craft standardization is one solution for providing for the needs of a large population. These mineral inclusions changed not only the aesthetic properties of the pot, but also the mechanical and thermodynamic properties of the clay, decreasing crack propagation and thus potentially increasing vessel yield.

Rosenstock, Eva [26] *see Biehl, Peter F.*

Rosenthal, Jeffrey [256] *see Meyer, Jack A.*

Rossi, Stefano [218] *see Riel-Salvatore, Julien*

Rossillon, Mitzi [83] *see Huang, Jennifer K.*

Rost, Stephanie (Stony Brook University), David

Wright (Gila River Indian Community Cultural Resource Management Program) and M.K. Woodson (Gila River Indian Community Cultural Resource Management Program)

[115] *Application of Remote Sensing Technologies for Understanding Buried Canals on the Gila River Indian Community, Arizona*

This paper summarizes pilot research on the potential of remote sensing methods and data in detecting prehistoric canals in the Middle Gila River Valley, Arizona. Different types of widely available remote sensing imagery were researched for their efficacy as a methods-based solution to resolving broader themes of prehistoric settlement.

The results suggest that the resolution of the imagery is the most important factor in detecting prehistoric canals, but modern ground disturbances and ages of canals were also significant considerations. This study shows that the regional view provided by remote sensing enhances the chances of detecting buried prehistoric irrigation features.

Roth, Barbara (UNLV)

[94] *Foragers, Farmers, and In Between: Variability in the Late Archaic of Southern Arizona*

Recent decades have witnessed substantial changes in our interpretations of the Late Archaic of southern Arizona, as large-scale excavations of deeply buried sites have exposed settlements with unforeseen levels of agricultural production. Debate continues over whether these groups were foragers who farmed, dedicated irrigation agriculturalists, or something in between. Here I explore the data base from across southern Arizona, including both floodplain and upland settings, to illustrate that variability existed over time and space during the Late Archaic. The level of flexibility observed in these groups indicates that they were sometimes foragers, sometimes farmers, and sometimes both.

Rothenberg, Kara (University of South Florida)

[165] *Multi-elemental Chemical Analysis of Anthropogenic Soils from the North Plaza, Palmarejo, Honduras*

Plazas were important spaces for expressing power and social identity in prehispanic Mesoamerica. However, plazas can be analytically problematic, because they were often kept clean of material debris. Previous geoarchaeological studies of anthropogenic soils and sediments have shown that specific activities leave characteristic chemical signatures on prepared earthen surfaces. The research presented here uses soil chemical residue analysis and excavation data to examine use patterns in the North Plaza of Palmarejo, Honduras during the Late Classic period. The results indicate that activities in the northern half of the plaza were distinct from those that occurred in the southern half.

Rothschild, Bruce [87] *see Rogers, Richard Anson*

Rousseau, Mike (Antiquus Archaeological Consultants Ltd.)

[160] *Primary and Secondary Toolstone Sources and Pre-Contact Period Quarrying Behaviour in the Thompson River Drainage of South-Central British Columbia*

Several "primary" and numerous "secondary" tool stone quarries with fair to excellent quality silicates were exploited by First Nations people for the last 7000 years in the Thompson River drainage of south-central British Columbia. Many sources have stone with distinctive "signature" colours and textures that allow easy visual identification in archaeological assemblages. Descriptions of these sources, and the physical nature of stone type(s) found at them, are presented for future comparative and reference purposes. Models for local post-quarrying behaviour and inter-regional cultural dispersal of various distinctive lithic raw material types are also presented and discussed.

Rowan, Yorke [254] *see Kersel, Morag M.*

Rowe, Robert (Picketwire Research)

[201] *The Pit Cremation to Palette Ratios along Hohokam Canal 7 System*

During the summer of 2005, excavations within a portion of the Hohokam village of Las Canopas resulted in the recovery of 278 pit cremations. Associated with some of the cremations were palettes and the question was raised of why some and not all? During analysis, a ratio was determined between the number of pit cremations and the palettes. This same type of numerical analysis was conducted at other village sites along the same canal system resulting in basically the same ratio. Research suggests that the resulting ratio was based on status and clan associations of the individuals.

Rowe, Sarah (University of Illinois)

[73] *Excavations at Buen Suceso: Community and Tradition in Valdivia Society.*

The Valdivia phase of Formative Period coastal Ecuador consists of a remarkable suite of characteristics that persist over a broad span of time and space. This paper presents the results of excavations at Buen Suceso, a Middle to Late Valdivia (2400- 1600 B.C.) site in Manglaralto River valley, which provides new information on small village life during this time. Through comparison of materials recovered at Buen Suceso and other Valdivia sites in the area, I present an outline for understanding the dynamic maintenance of tradition within Valdivia society.

Roy, Natasha (Centre d'études nordiques, Université Laval), Najat Bhiry (Centre d'études nordiques, Université Laval) and James Woollett (Centre d'études nordiques, Université Laval)

[25] *Environmental changes along the northern Labrador coast*

In order to document the human/environment relationship along the northern Labrador coast (Canada), dendro-chronological investigations of archaeological wood and fossil wood were undertaken at the Oakes Bay 1 site. The site consists of seven semi-subterranean sod houses located on the north shore of Oakes Bay at Dog Island that were occupied by Thule and Inuit. The principal goal of this study is to document the impact of human land use on the environment during the last centuries. The hypothesis is that Thule and Inuit activity and the Little Ice Age triggered the opening of the forest in the area.

Rozo, Jennifer (University of Chicago)

[124] *Transforming Landscapes, Transforming Lives: A Political Ecology of Plants, People, and Pueblos in Spanish Colonial New Mexico*

When Spanish colonists arrived in New Mexico, they brought more than men and colonial ambitions; they carried with them a host of weeds, seeds, diseases, and animals that dramatically impacted the social and physical worlds of the Pueblo peoples they encountered. Relying on political ecology and landscape theory more broadly, this paper explores the theoretical foundations necessary for interpreting the role of ecology in human affairs in a dynamic and meaningful way, while still privileging human agency. The argument is illustrated using specific examples from pollen samples collected from seventeenth-century field contexts associated with the Pueblo village of Paako.

Rubin, Julio Cezar [68] *see Silva, Rosicler T.*

Rubin de la Borbolla, Sol (Sol Rubin de la Borbolla)

[21] *El árbol de las maravillas en la cultura otomí*
El aprovechamiento del maguey forma parte del conjunto de saberes provenientes de la tradición mesoamericana. A pesar de la pérdida de plantas y de sus muchos usos en la vida familiar y laboral, aún persisten localidades, en diferentes estados de la República, especialmente los ocupados por otomíes, en los que todavía se producen objetos artesanales y alimenticios para consumo interno y venta en el mercado. Los procesos y técnicas de explotación de la materia prima y de la elaboración de estos productos implican una larga tradición de conocimientos y saberes que es importante documentar como parte del patrimonio cultural.

Ruiz, Joaquin [135] *see Thibodeau, Alyson M.*

Runggaldier, Astrid (Boston University)

[165] *The domestic landscape of San Bartolo, Guatemala: Social memory Mechanisms in Contexts of Abandonment and Resettlement*
Culturally shared links to the past create social cohesion and a sense of community that shapes group identity. These concepts are materialized in public monumental landscapes, but the domestic sphere is no less instrumental in forging people's identity through daily practice. Extant evidence suggests that San Bartolo was abandoned in the Late Preclassic and resettled after four centuries of abandonment. Life histories of locales, particularly of the gradual changes in households on either side of the temporal spectrum, pre- and post-abandonment, embody the relationships of people with each other and with the memory of the inhabitants of the ancient settlement.

[165] *First Chair*

Runnells, Sarah [178] *see Flanigan, Kelli B.*

Rush, Laurie (US Army, Fort Drum)

[154] *Heritage Forward Lessons Learned*
Author will discuss military lessons learned in Iraq and Afghanistan with emphasis on current efforts in education for military personnel and support for heritage planning during global operations.

[185] *Discussant*

Russell, Ian (Brown University)

[254] *The ethics of oblivion and forgetting: Against archaeology's hypermodern heritage*

At the core of modern archaeology is a commitment to document and preserve evidence of the past, struggling against the tidal wave of modern progress. However, blind faith in the inherent good of generating social-scientific data simultaneously perpetuates the progress paradigm, constraining human understanding within linear, progress-based rationales inevitably leading to exclusion and oppression. Do all pasts need to be known or preserved? Should some pasts be forgotten? What are the pasts and heritages of archaeology itself that have been conveniently forgotten, and what insight do they bring to the behaviors, motives and implications of archaeological practice?

Russell, Matthew (University of California, Berkeley)

[153] *An Archaeological History of Historical Archaeology: Using Real-Time Kinematic GPS for Site Mapping to Locate Previous Excavations*

This paper highlights use of real-time kinematic GPS survey for archaeological site mapping to locate units excavated in the 1940s-1960s. It focuses on a current project at Point Reyes National Seashore in Marin County, California, which is exploring sixteenth-century intercultural engagements between California Indians and European explorers, to demonstrate how "old" archaeological projects can be reconstructed in a Geographic Information System (GIS) to evaluate earlier results and address new questions. The first step in digitally reconstructing prior excavations is to accurately position the previous units, and a detailed topographic map of a site may reveal their presence.

[48] *see Schneider, Tsim D*

Russell, Will (Arizona State University)

[36] *The Terminal Hohokam Classic Period as a Revitalization Movement*

Traditional inquiries into Hohokam societal "collapse" focus on environmental transformation and human inabilities to respond. Reconsidering social actors as active participants rather than unwitting victims may shed light on the Terminal Classic period and whether this was necessarily tragic for all those involved. I examine historic revitalization movements in small scale societies and develop a cross-cultural template that can assist in identifying similar phenomena in the archaeological record. By integrating this template with indigenous histories, I argue that the Hohokam "collapse" may be better thought of as "reorganization" initiated by a single man and supported by a disadvantaged subaltern.

[36] *First Chair [36] Second Organizer*

Ruska, Alex (Northern Michigan University)

[60] *Intersubjectivity and the Act of Re-Membering Ancestral Drawings in Owens Valley, California*

Among the Numic peoples of the Great Basin and Colorado Plateau, animism has always served as an ontological foundation and organizing principal of people and places. This paper investigates how methodological processes rooted in Cartesian dualism potentially shape the epistemological frameworks through which scientific modes of inquiry commence. Exploring rock art sites from Owens Valley utilized in the 1890s Ghost Dance, I demonstrate natural mimetic acts of authorship employed by producers of rock art alongside analytical modes of

methodological alterity that potentially distance scholars from these originating acts.

Ruzicka, Denise (University of Nevada, Las Vegas)

[201] *Architecture and the Cosmos in the Mimbres Valley*

This study of a Late Pithouse Period Mimbres-Mogollon site in the American Southwest, the Harris Site in the upper Mimbres Valley in southwestern New Mexico, evaluates whether Mimbres pithouse groups observed astronomical phenomena and used such phenomena to guide the construction of their structures. The methods used in this investigation include evaluating whether the orientation and alignment of structures/houses as well as the presence of cultural features on surrounding ridge tops are related to the direction of celestial events. The results found an association between architecture and astronomy, as well as the landscape, at the Harris Site.

Ryan, Beth

[55] *An Archaeological Analysis of Haudenosaunee Responses to Settler Colonialism in Post-Revolutionary New York State, ca 1784-1826.*

A comparison of the material remains and spatial organization of Tonawanda, Canawaugus and Ohadi reveals a variety of subsistence practices, craft production and interaction with surrounding markets, while still indicating connections between these Haudenosaunee communities across reservation boundaries. Coupled with a reevaluation of the rates of Euro-American settlement around each community and technologies of colonization deployed by local settlers, the comparison of the material record constructs a picture of locally contingent responses to various degrees and types of settler colonialism, a picture vastly more complex than the "slums in the wilderness" often described in the secondary historic and ethnohistoric literature.

Ryan, Kevin (Missoula Fire Sciences Lab, RMRS, USFS)

[192] *Effects of fire in an archaeological context*

Fire, man's first tool, was used to improve hunting, gathering, and grazing forage; clear, sites for agriculture; provide community-protection buffers, and for cooking, heating, tool-making and a variety of other cultural purposes. Fire affects vegetation dynamics at the site and landscape levels and has feedbacks to the climate system. Fire also affects cultural materials, a number of artifact/site dating techniques, and site formation and degradation processes. Thus, dynamic interactions between fire, vegetation, climate, and archaeology/anthropology are complex. This paper provides an overview of vegetation-fire dynamics, the effects of fire on archaeological materials and methods, and potential for confounded interpretation.

Ryan, Kimberley (EcoPlan Associates, Inc. / Northern Arizona Univ) and Reese Cook (EcoPlan Associates, Inc./Northern Arizona University)

[135] *The Shortest Distance: New Evidence Suggesting Prehistoric Line-of-Sight Relationships among the Phoenix Basin Hohokam*

Ongoing research of the Hohokam "northern periphery" presents the opportunity to explore several long-standing questions regarding ground stone exchange. This poster depicts recent survey findings where a series of

prehistoric features denote a northwest-southeast trail alignment. Various routes may have been followed south to the Salt River Valley, however, this alignment presents an intriguing possibility: by further projecting the trail to the southeast, it leads directly to the Classic Period site of Pueblo Grande. Perhaps a fanciful notion, but the idea that "northern periphery" inhabitants included ground stone manufacturing specialists who may have supplied the irrigated valley is not.

Ryan, Stacy [52] see Clark, Jeffery J.

Ryan, Susan (Crow Canyon Arch. Center and University of Arizona)

[117] *Syntagms, Paradigms, and Practice: A Semiotic Approach to Kiva Architecture during the Chaco-to-Post-Chaco Transition in the Northern San Juan Region*

Architecture is socially produced, resulting in a built environment that expresses ideologies through its design, construction, and intended use. The reproduction of social structure depends on the repetition of behavior through time and architecture promotes the repetition of ideologies by fixing them in space and providing a context for practice. This paper will explore ancestral Pueblo society during the Chaco-to-post-Chaco transition with the goal of identifying patterns of continuity and change in social practices, specifically those manifested in great house kiva architecture in the central Mesa Verde region. A theoretical application rooted in semiotics and practice will be used.

[117] *First Chair*

Ryzewski, Krysta [163] see Pecoraro, Luke J.

Sabloff, Jeremy (Santa Fe Institute) [18] *Discussant* [225] *Discussant*

Sabo, III, George [204] see Horton, Elizabeth T.

Sabol, Donald [163] see Buck, Paul

Safi, Kristin (Washington State University)

[257] *Examining Processes of Migration and Friction Routes to Explain the Depopulation of the Mesa Verde Region*

During the Pueblo III period, populations shifted from Mesa Verde into the Rio Grande. Overall timing and sizes of group movement out of Mesa Verde are unresolved, due in part to a distinct shift in material culture between the regions during this time. This analysis calculates potential routes of movement across the two regions to determine the extent to which the physical landscape influenced how and where migrants moved. These routes are used to predict the locations of "intermediate" migration sites to evaluate the potential timing and size of group movement and identify remnants of the transition in material culture.

Saha, Kakoli [85] see Stockton, Trent

Saitta, Dean (University of Denver)

[198] *Surplus, Class, and Causality*

The concept of surplus raises questions about the relationships by which the fruits of human labor are produced, distributed, and consumed in society. These "class" relationships are obscured by theoretical

approaches that employ traditional evolutionary types, as well as continuous variation anti-types, to compare and contrast ancient social formations. Ideas about how people are differentially-positioned within class relations of surplus flow and the non-class political, economic, and cultural processes that sustain such relationships—ideas first explored by Marx and refined by subsequent generations of historical anthropologists—offer better frameworks for theorizing past organizational variation and change.

Sakai, Sachiko (UC Santa Barbara)

[62] *Applications of Optically Stimulated Luminescence (OSL) Dating in the Study of Change in Clay Source of Olivine-tempered Ceramics in the Arizona Strip and Adjacent Areas in the American Southwest*
Olivine-tempered ceramics are widely distributed in the Arizona Strip and adjacent areas between A.D. 100 and 1300. The source of olivine is thought to be at Mt. Trumbull and Tuweep in the Arizona Strip. LA-ICP-MS and INAA suggest that at least six clay sources were involved in the production of olivine-tempered ceramics found in the Mt. Trumbull and lowland Virgin areas 100 km west of Mt. Trumbull. In this paper, I will particularly examine how this production and distribution pattern changed over time. Optically stimulated luminescence dating is used to determine the age of the sherds from each compositional group.

Salas, Miriam [243] see Shiratori, Yuko

Salazar, Diego (Universidad de Chile), Hernán Salinas, José Berenguer and Diego Morata

[267] *The organization of copper mining during the Late Period in the Loa River (northern Chile)*
Inka expansionism into northern Chile has been traditionally interpreted as a consequence of the state's interest in controlling copper mining production. In this paper we will evaluate this claim by presenting results on two research projects in the Upper Loa River, where evidence of pre-Inka and Inka mining and metallurgy have been studied. We will concentrate on the continuities and transformations seen in mining technology and organization prior to and after Inka rule. Research funded by Proyecto Fondecyt 1100905 and Proyecto Arqueológico El Abra.

Salazar, Diego [224] see Salinas, Hernan P.

Saldana, Melanie (California State University Los Angeles)

[266] *Tools at Midnight Terror Cave: A Search for Function and Meaning*
Artifact analyses are too often descriptive exercises that contribute little to our understanding of sites. A fairly elaborate assemblage of tool forms was recovered from Midnight Terror Cave, Belize. An analysis of the context and distribution of these artifacts offers insights into activities in the cave. For instance, distribution of grinding stones suggests that these implements were used in a rather restricted area. Patterns of breakage raise interesting questions that remain to be answered. Finally, beyond function, the meaning of certain artifacts, such as bifaces, requires closer consideration.

Saldaña, Fausto [156] see Perez, JoEllen M.

Salgán, Laura [62] see Gil, Adolfo

Salinas, Hernan (universidad de chile), Diego Salazar (Universidad de Chile), Jean-Louis Guendon (Université de Provence), Valentina Figueroa (Université de Paris 1 Panthéon-Sorbonne) and Donald Jackson (Universidad de Chile)

[224] *Hunter-Gatherer-Fisher Mining during the Archaic Period in Coastal Northern Chile*

We present evidence of an iron oxide mine in Taltal, in the arid coast of northern Chile, exploited by local hunter-gatherers during the Early Archaic (ca. 11,000 B.P.) and then during the Late Archaic (ca. 4000 B.P.) periods in order to extract pigments (hematite and goethite) used mainly for symbolic purposes. We explore the socioeconomic organization of this early maritime adaptations and the role played by iron oxide mining in local settlement systems. Research Funded by Proyecto Fondecyt 1080666.

Salinas, Hernán [267] see Salazar, Diego

Sall, Candace (University of Missouri)

[62] *Pigments and Pastes: Polychrome Ceramics from the 76 Draw Site, New Mexico*

The black and red paints on Ramos and Gila Polychrome sherds were sampled using LA-ICP-MS to compare their elemental concentrations. INAA was used on these same sherds' pastes to compare their chemical fingerprints. The 76 Draw site is a Medio Period (A.D. 1200-1450) Casas Grandes site in Luna County, New Mexico.

Salomon, Frank (University of Wisconsin-Madison)

[15] *Discussant*

Salwen, Stephanie (University of California, Los Angeles)

[106] *Asphaltum Exchange and Emergent Complexity in California*

This poster considers role of asphaltum trade in the emergence of complexity in Chumash society. The Chumash, sedentary complex hunter-gatherers in Southern California, underwent a rapid social re-organization (1150-1300 AD) leading to institutional hierarchy and formal craft specialization. This study considers a material basis for this change, based in part on changing access to high-quality, naturally-occurring asphaltum (bitumen). High-quality asphaltum (1) was a fundamental part of plank boat production, leading to improved trade capabilities and the demonstration of the social status of boat owners, and (2) was itself a limited, naturally circumscribed resource distributed via exchange networks.

[123] see Arnold, Jeanne E.

Sammons, D. [59] see Lohse, Skip

Sampson, Christina (University of Michigan) and Lisa Young (University of Michigan)

[135] *Flooding and Ritual Closure at a Small Pueblo in Northeastern Arizona*

Communities cope with the effects of natural disasters on both practical and spiritual terms. This research explores the response to the destruction of a ceremonial structure (kiva) by flooding at Creswell Pueblo, a late 12th and

13th c. A.D. village in the Homol'ovi area of northeastern Arizona. Based on analysis of the kiva fill and associated faunal remains, we discuss the evidence for ritual closure of the structure. A comparison with other kivas at this site and later Homol'ovi pueblos illustrates how the destruction by flooding contributed to ritual treatment of the structure.

San Roman, Manuel [231] *see* *Martin, Fabiana M.*

Sanchez, Carlos [93] *see* *Romano, Francisco E.*

Sanchez, Guadalupe [147] *see* *Carpenter, John P.*

Sanchez Fortoul, Carmen (University of Leicester) [243] *Mayapán Pottery Materials: A Petrographic Analysis*

This research employed petrographic analysis and x-ray diffraction to investigate ceramic production strategies, number of compositional groups, and characteristics of the tempering materials at Mayapán, the last Maya capital. The research found: (1) few tempering minerals – calcite and some dolomite; (2) multiple clear-cut compositional groups based on the different textural varieties of calcite/dolomite – micrite, sparite, monocrystalline, and discrete elements (peloids, microfossils); (3) association composition and ware-varieties; and, (4) multiple pottery producers selecting different calcite varieties for different wares. The results also suggest that the Late Postclassic shift to limestone-only temper was technologically advantageous but required greater skill.

Sanchez Miranda, Guadalupe (Museo de Sonora INAH), John Carpenter (INAH Sonora) and Vance Holliday (University of Arizona)

[120] *Sonoran Clovis Groups: Lithic technological Organization and Land Use*

Clovis groups inhabited the Llanos de Hermosillo and surrounding areas of north-central Sonora, Mexico 13,000 years ago. Water, lithic sources and prey animals are the most important commodities for hunter and gather groups. Clovis groups encounter in Sonora a pristine landscape with very little competition, including all the important commodities for survivable; they were able to acquire an extensive knowledge of the landscape and exploit an extensive territory of approximately 25,000 square kilometers. Base upon lithic organization and land use patterns we present some interpretations about the regional integration and interaction of the Sonoran Clovis groups.

[147] *First Chair [147] First Moderator*

Sánchez Mosquera, Amelia [103] *see* *Damp, Jonathan E.*

Sanders, Donald (Institute for the Visualization of History, Inc.)

[146] *Real-Time 3D Modeling for Archaeological Excavation, Analysis, and Publication using the REVEAL Documentation and Display System*

Excavations must be recorded accurately and completely; these are time-consuming necessities. Making sense of strata and architecture, and knowing where to dig next are overwhelming tasks. REVEAL coordinates all datatypes processed during and after

excavations. REVEAL includes semi-automated tools to document sites, trenches, and objects, to record excavation progress, to analyze of evidence, and to create 3D models and virtual worlds--all of which occur as the excavations unfold. Testing hypotheses against the excavated material happens in real time, in 3D. This presentation will demonstrate some of the new applications available in REVEAL designed specifically for archaeological fieldwork.

Sandor, Jonathan (Agronomy Department, Iowa State University) and Jeffrey Homburg (Statistical Research, Inc.)

[199] *Agricultural Soils of the Prehistoric Southwest: Known Unknowns...*

Soils form the foundation of agriculture, including the diverse farming systems of the prehistoric Southwest. Yet many questions about them remain unanswered. Were certain natural soils sought out, and if so, why? How were soils and landscapes deliberately altered and managed for agriculture? Can prehistoric soil productivity be estimated? How did prehistoric farming impact soil resources? Although headway has been made in addressing these questions, there is much more to learn. Quantitative studies and advancements needed on a host of soils-related questions about Southwest prehistoric agriculture, and their relevance to current arid land agriculture, are presented to spur further work.

[223] *Discussant*

Sandor, Jonathan [223] *see* *Homburg, Jeffrey A.*

Sands, Ashley [158] *see* *Dodd, Lynn S.*

Santarone, Paul (University of Wyoming), E.S. Lohse (Idaho State University) and Coral Moser (Idaho State University)

[262] *The Role of Non-Bifacial Tools and Marginal Tool-Stone in Paleoindian Retooling: Insights from the Buried Beach Site*

Excavations at the Buried Beach Site, near Castle Rock, Idaho provided an opportunity to examine Paleoindian non-biface tool production on the periphery of the Great Basin. Cobbles with marginal flaking characteristics were systemically reduced to produce durable, short-use tools. Using traditional lithic analytical procedures and use-wear analysis we show that tool-stone selection among Paleoindians was more complex than selecting for ultra-high quality materials. "Marginal" tool-stone likely played an important role in the retooling of the Paleoindian tool-kit. This aspect of Paleoindian archaeology is often overlooked. Sites may go unrecognized due to the archaeologist's conception of Paleoindian tool-stone selection and use.

Sapp, William (US Forest Service)

[125] *Finding the Palace of a Lambayeque Lord*

In 1999 a team of Peruvian and American archaeologists excavated an adobe and stone structure in the Jequetepeque Valley on the North Coast of Peru that was found to be a country palace associated with the Lambayeque culture. The palace was built around AD 1050-1100 and continued to be occupied by a Lambayeque lord throughout the Chimú and Inka occupations of the valley. The architectural form of the palace is identical to the main compounds at Pacatnamú

suggesting that Pacatnamú was a palace complex maintained for indigenous Lambayeque royalty and not a ritual center as was once posited.

Sargent, Heather (University of Idaho)

[175] *Bullets, Buttons and Beads: the History and Archaeology of Fort Spokane, Washington.*

The US military created Fort Spokane in 1880. Located in Northeastern Washington, the fort has served many purposes, including military occupation, an Indian boarding school, headquarters for the Colville Indian Agency, a tuberculosis sanatorium and a hospital. This paper discusses the complex history of Fort Spokane from 1880 to 1929. In addition, it presents a summary of past archaeological work done at the fort and an overview of the 2010 excavations. The recent work focused on the Indian boarding school period, a period that has not been extensively studied but is an important chapter in the history of the region.

Sarjoughian, Hessam [36] see *Bergin, Sean M.*

Sarmiento, James (Native American Studies, UC Davis)

[145] *A Grapheme Inventory for Maya Hieroglyphic Database*

Thompson's 1962 catalog was for decades the standard for transcribing Maya texts. Advances in decipherment and the appearance of many new texts required an improved sign list. The New Catalog of Maya Hieroglyphs developed by Macri with Loooper and Vail is a new method of coding graphemes, mitigating ambiguities and omissions in earlier coding systems. This presentation describes the complex interrelationship between the New Catalog and the Maya Hieroglyphic Database, and discusses the importance of the database and the improved sign list for further archaeological and linguistic research.

Sasaki, Ken-ichi (Meiji University)

[149] *Autonomous Role of Peripheral Polities in the Process of State Formation in Japan*

A widespread distribution of highly-standardized keyhole-shaped burial mounds in Japan may indicate the appearance of inter-regional alliances among polities in the late third century A.D. under the central polity in the Kinai region. However, in northern Kyushu, the Kinai-type pottery was imitated with the local pottery production technique. The Kinai-type pottery made locally in northern Kyushu was further exported to Iki island on the way to the Korean peninsula and the Korean peninsula. This indicates that polities in northern Kyushu were probably independent from the central polity in Kinai, and remained autonomous in terms of pottery production.

[149] *First Chair*

Sassaman, Kenneth (Univ of FL - Anthropology) [232]
Discussant

Sattenspiel, Lisa [124] see *O'Brien, Meghann C.*

Sauer, Jacob (Vanderbilt University)

[241] *Resistance and Resilience in Indigenous Social Systems: The Araucanian Example from South-Central Chile*

Resilience theory states that the resiliency of a system is

seen in the ability to "absorb disturbance and reorganize while undergoing change so as to still retain...the same function" (Walker 2004). The colonization of the Americas tested the ability of most indigenous cultures to absorb change without creating a different or hybridized social system. The Araucanians of southern Chile, the only indigenous group in the Americas to reject the Spanish and maintain extant cultural organization for more than 300 years, are in the unique position to demonstrate the utility of resilience theory in explaining cultural continuity while confronting outside pressure.

[241] *First Chair*

Savelle, James (McGill University) and Arthur Dyke (Geological Survey of Canada)

[126] *Paleontological and zooarchaeological evidence for Thule Inuit as bowhead whale hunters*

In attempting to interpret the role of the bowhead whale in Canadian Thule Inuit subsistence economies, many archaeologists are cautious when dealing with the question of hunting versus scavenging. The argument is usually made that it is difficult, if not impossible, to distinguish between whale bones derived from beached carcasses and bones derived from active hunting. This paper examines stranding rates, associated taphonomic processes and mortality profiles of naturally-stranded Holocene bowheads in the Canadian Arctic. It is concluded that whale bone assemblages at the vast majority of Thule sites can only be explained through active hunting.

Savelle, James [159] see *Johnson, Donald S.*

Sawchuk, Elizabeth (University of Alberta)

[109] *Analysis of Human Remains at the Mlambalasi Rock Shelter, Tanzania*

The Mlambalasi site in the Iringa region of Tanzania has a rich archaeological record that spans the historic period, Iron Age, and Later Stone Age. Excavations in 2002, 2006, and 2010 yielded commingled fragmentary human remains from a minimum of three individuals. The archaeological context of the remains and preliminary radiocarbon dates on shell suggest at least two of the skeletons could be Pleistocene Later Stone Age in origin. This poster presents the results of my MA research which focuses on the excavation and osteological analysis of the remains as well as interpretation of their context within the rock shelter.

Sayre, Matthew (Stanford University) [45] *Discussant*

Scaglione, Richard [73] see *Cordero, Maria-Auxiliadora*

Scarborough, Vernon (University of Cincinnati), Liwu Grazioso Grazioso (University of San Carlos), Brian Lane (University of Hawaii), Christopher Carr (University of Cincinnati) and Eric Weaver (University of Cincinnati)

[119] *The Wet and the Dry: Water Management and the Built Environment at Tikal*

Water management studies provide a highly productive assessment of landscape modification at Tikal—a water system based on seasonal rainfall collection rather than riverine canal diversion. Although the ancient Maya utilization of their water resources differs from most well-reported systems associated with the archaic state from

either semiarid or temperate locations, it does provide a well-designed adaptation to the neotropics. Recent survey and excavation suggest that early colonizing efforts were precipitated, in part, by natural seeps at the summit of the present-day ridge top at Tikal, though subsequent Classic constructions sealed the spring-like activity to accommodate an increasing population.

[119] *Third Organizer*

Scarborough, Vernon [119] *see Tankersley, Kenneth B.*

[119] *see Weaver, Eric M.* [119] *see Carr, Christopher*

[119] *see Coronel, Eric G* [119] *see Lane, Brian G.*

Schaafsma, Hoski [192] *see Rodrigues, Teresa Lee*

Schaafsma, Polly (Research Associate, MIAC)

[18] *Rock Art's Century and More: Discovery and Research in the Great Basin and Northern Southwest*

This essay reviews the development of rock art research in the Great Basin and on the Colorado Plateau. Rock art documentation in these areas has evolved from articles inspired by the curiosity of canyon explorers, to efforts by archaeologists to describe and classify what initially appeared to be chaotic data. Now with a grip on cultural categories and time frames, hypotheses and methods have been developed to address the meaning and functions latent in these sites. In conjunction with other archaeological remains, rock art addresses the cognitive dimension of past cultures, posing new questions for the future.

Schach, Emily (Arizona State University)

[141] *A multi-regional analysis of Ohio Hopewell gender*

This study approaches difference in gender relations between sites in the Scioto river valley and the Miami drainages. Burials from the Scioto river valley had greater disparity between sexed burials, with males buried more often with artifacts and possessing a greater average number of artifact classes. The Miami drainages had less disparity although the pattern there has more artifacts with female burials. Few artifact classes were buried exclusively with one sex. Gendered difference is emphasized in the Scioto river valley, but not in the Miami drainages, which may be a reflection of greater fluidity in gender in the Miami region.

Schachner, Gregson (UCLA), Wesley Bernardini (University of Redlands), Kellam Throgmorton (University of Colorado-Boulder) and Matthew Peeples (Arizona State University)

[134] *Revisiting Twin Butte: Early Pueblo Period Archaeology in the Petrified Forest of Arizona*

Some of the first large-scale investigations of early Pueblo (A.D. 600-900) period archaeology in the northern Southwest occurred in the Petrified Forest and Puerco River Valley of eastern Arizona, yet the results of these studies have been overshadowed by research in the northern San Juan and Chaco regions. Recent collaborative efforts by archaeologists from multiple institutions have provided an opportunity to reinvestigate early Pueblo period settlement structure and patterns in the Puerco area. In this poster, we report mapping and surface recording efforts at Twin Butte, one of the largest early Pueblo villages in eastern Arizona.

[134] *Second Chair* [134] *Second Organizer*

Schachner, Gregson [134] *see Theuer, Jason G.*

Schaepe, David (Sto:lo Nation), Michael Blake (University of British Columbia), Sue Formosa (Views / Sto:lo Research & Resource Management Centre), Dana Lepofsky (Simon Fraser University) and Anthony Graesch (Connecticut College / UCLA Cotsen Institute)

[232] *Exploring Xelhálh as a Place of Centralized Power among the Sto:lo-Coast Salish*

Current theoretical perspectives of limited hierarchy and communalism in precontact Central Coast Salish society do not accommodate findings from Xelhálh, a Late Period fortified settlement in the Lower Fraser Canyon. Terra forming, massive rock walls and terraces, in- and above-ground houses, earthen burial mounds, and potential palisades demonstrate control of labour and concentrated power at a scale not previously documented in the Sto:lo-Coast Salish landscape. Employing a multi-scalar, community-settlement approach, regional comparison of Xelhálh with neighboring settlements suggests it was a place of centralized power, collectivity and hierarchy, contrary to expectations based on current models of Central Coast Salish political-economy.

Schaepe, David [232] *see Graesch, Anthony P.*

Scharffenberg, Melissa (Georgia State University)

[195] *Investigation of the Lacy Hotel Site: A 19th Century rural dwelling in Kennesaw, GA*

The Lacy Hotel was a part of the "Great Locomotive Chase", a significant historical event in Kennesaw, Georgia during the Civil War (1861-1864), yet little is known of this site. The Lacy Hotel was a boarding house that operated for roughly six years until General William Tecumseh Sherman burned it in 1864, leaving speculation to its exact location. This research centers on investigating the historical records along with the archaeological fieldwork in order to provide a more detailed analysis of civilian life associated with hotels during the Civil War period in Georgia.

Scheel-Ybert, Rita [253] *see Bianchini, Gina F.*

Scheiber, Laura (Indiana University) and Judson Byrd Finley (University of Memphis)

[57] *The periphery of several, center of none? High-altitude archaeology in the Absaroka Mountain range, Wyoming*

The Rocky Mountain ranges of Wyoming are often considered part of the far western periphery of the Northwestern Plains, a formidable boundary prohibiting or at least constraining cultural interaction. This area is likewise described as the far eastern periphery by scholars working in the Great Basin and California, the distant limit of the Numic expansion some (debatable) time ago. We here present the results of five field seasons of archaeological research within 8,500 acres of the Greater Yellowstone area, primarily focused on late period occupation of the high country by small groups of Mountain Shoshone and their neighbors.

[84] *Discussant*

Scheinsohn, Vivian (INAPL-CONICET/ University of Buenos Aires), Sabrina Leonardt (University of

Buenos Aires) and Florencia Rizzo (INAPL)**[60] *Rock Art in NW Patagonia***

The conspicuous presence of rock art in Andean NW Patagonia, a region where archaeological visibility is an outstanding problem given the density of forest cover, has put us to study rock art in an intensively way. For the study area, some authors had argued that in Late Holocene times, rock art is actually reflecting the arising of territorial circumscription and ethnicity demarcation. But we had also considered other kind of information transmitted by means of this evidence. In this paper we will discuss and evaluate these hypotheses by means of cladistics and endemism analysis and bring new results obtained.

Schieppati, Frank [60] *see Hayward, Michele H.*

Schiffer, Michael (University of Arizona)**[10] *Saltations in Technological Change***

This paper focuses on how we might explain long-term trends in an aggregate technology's use-related performance characteristics. It is suggested that sustaining any such trend over long periods requires episodic saltations in component technologies. Beyond invoking saltations as the immediate cause of a technological trend, a complete explanation identifies contextual--often social--factors that drive the process. This mode of explanation is illustrated by fast ocean liners of the 19th and 20th centuries.

Schilling, Timothy [246] *see Hildebrand, Elisabeth A.*

Schindler, Bill [61] *see Cunnar, Geoffrey E.*

Schlanger, Sarah (NM Bureau of Land Management)**[50] *Developing and Applying Consistent Management Practices for National Historic Trails***

The Department of Interior Bureau of Land Management (BLM) administers three National Historic Trails and manages 5,342 miles of national historic trail routes on the public lands. These trails commemorate significant developments and events in American history and they contain unique, irreplaceable resources. Because these trails have heritage, recreation, and archaeological values, historic routes and their associated resources are challenging to deal with using conventional cultural resource management tools. BLM is using ARRA funding and staff resources to develop and apply new management tools that include consistent standards for trail resource documentation, protection, use, and preservation.

Schleher, Kari [264] *see Snow, David H*

Schmader, Matthew (City of Albuquerque)**[241] *Coronado in the Tiguex Province: Assemblage and Tactics of a 16th Century Spanish Entrada Site***

Investigations conducted at Piedras Marcadas Pueblo, a large pre-Contact village in the middle Rio Grande valley, have yielded results with major implications for researching the 1540-1541 expedition led by Francisco Vázquez de Coronado. The Coronado expedition spent two winters along the Rio Grande while searching for new civilizations. Piedras Marcadas contains the largest number of artifacts found at any Coronado expeditionary site. The 16th century assemblage of metal items and

possible associated stone tools will be examined in relation to subsurface adobe architecture. Tactical organization of the largest land-based exploration launched by Spain in the American west will be detailed.

Schmidt Dias, Adriana**[101] *Hunter-gatherer occupation of South Brazilian Atlantic Forest: archaeology and paleoenvironment***

The archaeological studies in South Brazil indicate a long term adaptive relation between hunter-gatherers societies and the Atlantic Forest, which presence since Pleistocene-Holocene transition contributed to the initial settlement of this region. Throughout the Holocene, most of the captured taxons of vertebrates belong to forest habitat. On the other hand, lithic industries' characteristics points to a stabilized pattern of technological organization and comparative analyses indicate an analogous technological style, suggesting a model of social organization characterized by a high degree of intergroup interaction, regulated by strategies of frequent residential mobility in a large regional territory

[101] *First Chair*

Schmitt, Dave (Desert Research Institute) and Karen Lupo (Washington State University)

[126] *On Early and Middle Holocene Environmental Change in the Eastern Great Basin: Some Additional Small-Mammal Data from Bonneville Estates Rockshelter*

Excavations at Bonneville Estates Rockshelter, Elko County, Nevada recovered rodent remains from stratified deposits spanning some 12,000 14C years. Specimens from the late Pleistocene-early Holocene include a number of species adapted to moist and cool environs containing grasses and sagebrush. Shortly after 9000 14C BP these mammals became locally extinct, or nearly so, taxonomic diversity declined, and the region became dominated by species adapted to xeric habitats. The Bonneville Estates early small-mammal record is similar to the records reported at Homestead and Camels Back caves and provides corroborative data on regional environmental change and mammalian responses to middle Holocene desertification.

Schmitt, David [180] *see Rhode, David*

Schneider, Adam (University of California-San Diego)**[258] *Divine Kingship, Crisis, and the Locus of Political Agency in Ancient Mesopotamia***

Divine kingship was an anomalous and short-lived form of rulership in ancient Mesopotamia associated with the rise of the earliest empires in that region. This study explores the reasons behind the apotheosis of certain Mesopotamian kings by contextualizing that process within specific historical moments of political crisis. I argue that the sacralization of rulers in Mesopotamia was a strategic political exercise in crisis management, in which royal propaganda was used to reorient the locus of political agency away from the gods and focus that agency on embattled kings as a means to bolster their eroding political positions.

Schneider, Joan (California State Parks, Colorado Desert District)

[224] *Making Milling Equipment: Division of Labor inferred from the Archaeological and Ethnographic Records*

Human behavioral patterns related to the division of labor at quarries and workshops can be teased from archaeological data, ethnographic reports, and historical accounts. This paper uses these sources to infer and explain how activities related to the procurement and use of milling equipment can enrich understanding of social structure across cultures and time periods.

Schneider, Seth (University of Wisconsin-Milwaukee) and John D. Richards (University of Wisconsin-Milwaukee)

[104] *The Schlage Site Ceramic Assemblage: A Comparative Perspective on a New Oneota Variant in Eastern Wisconsin*

The Schlage site in Fond du Lac County, Wisconsin is a Developmental Horizon Oneota site dating from calibrated A.D. 1250 – 1380. The pottery assemblage is dominated by shell-tempered, round-shouldered globular jars with decoration limited to various forms of crimping on the interior and exterior rim margins. This decoration is atypical for eastern Wisconsin Oneota and suggests that these groups may include more distinct regional variants than previously thought. This poster provides a morphological and compositional characterization of the Schlage site pottery in the context of other Eastern Oneota ceramic assemblages.

Schneider, Tsim (UC Berkeley), Sara Gonzalez (Vassar College), Kent Lightfoot (UC Berkeley), Lee Panich (Santa Clara University) and Matthew Russell (UC Berkeley)

[48] *A Land of Cultural Pluralism: Case Studies from California's Colonial Frontiers*

Culture contact and colonial encounters in California unfolded within a variety of pluralistic social settings between an array of agents with different material traditions and agendas. Case studies in this paper range from sixteenth-century encounters on the California coast to later, more permanent colonial contexts and showcase cultural diversity before and after colonial settlement. In addition to a long-term perspective, a unifying theme for each case study is expanding the spatial dimensions of these interactions. To this end, we address social innovations and diverse consequences of culture contact and colonialism both at and away from loci of encounter.

Schneyder, Stacy (ICF Jones & Stokes), Kevin Bartoy (Washington State Department of Transportation), J. Tait Elder (ICF Jones & Stokes), Melissa Goodman-Elgar (Washington State University) and Melissa Cascella (ICF Jones & Stokes)

[3] *At the Interface of Interpretations: The Use of the Single Context Recording System and Micromorphology in Urban Archaeology*

Interpretations of site formation processes are typically dependent upon detailed macroscopic observations of archaeological stratigraphy. For urban historical sites, the single context recording system provides a framework to record, characterize, and interpret the events that create stratified deposits. Additional data can be gained from historical research and micromorphological analysis. The use of single context recording in concert with historic research and micromorphological analysis has allowed for a more robust interpretation of a late nineteenth-century site in Seattle, Washington. This poster

examines the complimentary use of these techniques for interpreting a dynamic urban historic landscape.

Schnitger, Frederik W. [115] *see Kappers, Michiel*

Schoeninger, Margaret (UC-San Diego), Melanie Beasley (UC-San Diego), Andrew Froehle (UC-San Diego) and Corina Kellner (Arizona State University)
[255] *Diet reconstruction using carbon stable isotope in bone collagen and apatite*

Recent analyses of bone collagen of animals (rats, mice, & pigs) consuming varied experimental diets show strong correlations between the carbon stable isotope ratios in bone apatite and collagen. When the diet protein source is controlled, animals eating C3 protein fall on a line parallel to and separate from animals eating C4 protein. Comparing human data to these patterns identifies human diet protein. In contrast, new data for free-ranging animals do not compare favorably with these patterns and we discuss the implications of these findings for reconstructing human diet.

[255] *First Chair*

Schoeninger, Margaret [233] *see Somerville, Andrew D. [233]* *see Kellner, Corina M.*

Schofield, John

[254] *The persistence of place, beyond preservation*

It is an interesting contradiction that archaeologists who once led the way in promoting preservation of cultural heritage are now developing ways of 'managing change', ways that enable the persistence of place (its form or character) without necessarily resorting to formal means of heritage protection. This is a comparatively recent change, corresponding to a perceived decline in state authority, at least in the UK and arguably across larger parts of the developed world. This contribution will assess these new approaches and consider what they tell us about contemporary society and the heritage sector in particular.

Schollmeyer, Karen (Simon Fraser University/Arizona State University) and Jonathan C. Driver (Simon Fraser University)

[126] *Settlement Patterns, Source-Sink Dynamics, and Artiodactyl Hunting in the Prehistoric U.S. Southwest*

A number of studies in the U.S. Southwest suggest artiodactyl populations in areas of dense human settlement experienced periods of resource depression. Most assemblages from prehistoric villages in this region are dominated by lagomorphs and sciurids, with relatively few artiodactyls. However, some sites and geographic areas show greater artiodactyl relative abundance. We examine factors influencing this variability, including the effects of human population size, settlement patterns, and the locations of less heavily hunted "reserve" areas. We relate the results to conservation biology studies on the effects of source-sink dynamics on the long term sustainability of large versus small mammal hunting.

Scholnick, Jonathan (University of Arizona)

[235] *Spatial Patterning and Stylistic Diffusion in New England Gravestones*

A recent study of New England gravestones examines the social processes that underpin the diffusion of innovative decorative styles. This classic archaeological

example of diffusion illustrates the spatial and temporal patterning of styles. This study uses new survey data that documents gravestones in eastern Massachusetts cemeteries, which expands Deetz and Dethlefsen's database. The spatial and temporal patterns of different decorative motifs are used to evaluate models of innovation diffusion, particularly the social contagion of stylistic preferences.

Schon, Robert (University of Arizona) and Emma Blake (University of Arizona)

[89] *The Marsala Hinterland Survey: Report of the 2008-2010 Seasons*

The Marsala Hinterland Survey is a diachronic project investigating the terrain adjacent to the coastal town of Marsala in Sicily. The region has a complex past, changing hands between multiple foreign powers and experiencing waves of migration from throughout the Mediterranean. Limited work has been done in the area and burgeoning development places the archeological record there in jeopardy. Our survey monitors long-term demographic change by revealing shifting settlement patterns and local responses to external stimuli. This paper summarizes our findings from the Paleolithic through Early Modern periods with added emphasis on the Iron Age and Roman occupations.

Schöne, Bernd [205] see *Burchell, Meghan*

Schou, C. [59] see *Lohse, Skip*

Schoville, Benjamin (Arizona State University)

[59] *Taphonomic and Behavioral Formation of Edge Damage on Middle Stone Age Points from Pinnacle Point 13B and Die Kelders cave 1*

Identifying taphonomic and behavioral processes on patterns of lithic edge wear is complicated by potential equifinality in edge damage morphology. Comparing assemblage distributions of wear within an image referenced GIS is one method for estimating the probability of assemblage patterns resulting from behavioral and taphonomic processes. Here I compare the frequency and distribution of edge damage from two MSA assemblages of lithic points from South Africa. Patterns referable to use as cutting tools rather than a taphonomic origin seems to predominant. Bringing tool wear observations into a uniform spatial structure is one avenue for standardization of lithic use-wear analysis.

[108] see *Oestmo, Simen*

Schreiber, Katharina [229] see *Edwards, Matt*

Schreiner, Amanda (CUNY Graduate Center), John Steinberg (University of Massachusetts), Douglas Bolender (University of Massachusetts) and Thomas McGovern (University Center and Graduate School, CUNY)

[42] *Zooarchaeology of the Viking Age and Later in Skagafjörður*

An initial examination of the animal bones from a sample of the farmsteads investigated during the Skagafjörður Archaeological Settlement Survey suggests general continuity across the socio-economic spectrum of sites during the Viking Age. The presence of pig specimens at many of the farmsteads, even after 1300 AD, is quite remarkable. Also interesting is the paucity of older sheep

remains, which is in stark contrast to the Myvatan area.

Schroeder, Bryon (University of Wyoming), Richard Adams (OWSA) and Orrin Koenig

[101] *Are we There Yet? Numic Expansion Revisited in the Wyoming Region*

The archaeology of the Wind River Range has an untapped potential to contribute to the origins of the Numic. This talk will outline the current understanding of Numic expansion focusing on the timing of migration, archaeological identification, and subsistence strategies. It is my aim to show that current work done in the Wind River Range challenges conventional ideas of a Great Basin centered homeland for Numic groups, aids in a clearly understanding of the material manifestation of Numic groups, and reinforces historically recorded subsistence strategies.

Schroedl, Gerald (University of Tennessee)

[121] *Patterns of Inequality at the Brimstone Hill Fortress, St. Kitts West Indies*

Brimstone Hill Fortress (1690-1854) was a multiethnic community of British Infantry, Artillery, and Engineers Officers, enlisted soldiers, whites and blacks of the St. Kitts militia, black soldiers of the West India Regiments, and enslaved African workers owned by the British military or conscripted from plantations for maintenance and construction projects. Excavated contexts (1996-1999, 2004-2008) evidence the hierarchical and oppressive differences in material, subsistence, architectural, spatial, and social patterning among the forts occupants. Black militia and soldiers were afforded some advantages of British soldiers not available to enslaved African workers at Brimstone Hill.

[121] *First Chair [121] Second Organizer*

Schroedl, Gerald [121] see *Ahlman, Todd [121]* see *Brady, Bobby R.*

Schroedter, Tim (Dipl. Praehist.)

[25] *Charcoal analysis in SE Europe - human exploitation of wood resources*

The multi-disciplinary research-project "Tell in the woods? Anthracological investigations in SE Europe and Turkey" deals with the woodland-management of Neolithic and Chalcolithic societies. As part of this project charcoal samples from several sites from a settlement-chamber in Bosnia and Herzegovina are included. First results show an open landscape with manifold vegetation. The investigation of different sites allows the comparison of several charcoal-assemblages and thus reflects different habitats in a limited area. To estimate the degree of selection according to the natural composition of woody species off-site samples are analyzed.

Schuetz, Eric (UW-Milwaukee) and Eric Burant (University of Wisconsin-Milwaukee)

[104] *Analysis of Phytoliths from the Schlage Site in Fond du Lac County, Wisconsin*

Soil samples from seven pit features excavated at the Developmental Oneota Horizon Schlage site in Fond du Lac County, Wisconsin were processed to recover phytoliths. A total of 16 morphometric phytolith types were identified. Phytoliths present suggest the use of a variety of wild grasses, including a possible specimen of

wild rice, as well as cultigens including corn and beans. Together with evidence from the faunal assemblage and macro-botanical assemblage, the phytolith data suggests that the Schlage site Oneota subsisted on a broad spectrum, mixed diet of wild plants, cultigens, and animal foods.

Schuldenrein, Joseph (Geoaerchology Research Assoc), Michael Aiuvalasit (Geoaerchology Research Associates) and James Pritchard (Brockington and Associates)

[80] *Prehistory and Geoaerchological Investigations Along the Central Mississippi Valley: Recent Advances* Integrated archaeological and geoaerchological investigations were undertaken for Section 110 studies in the Central Mississippi Valley. The project was performed for the U.S. Army Corps of Engineers (St. Louis). These studies tested for rarely explored deeply buried surfaces. This work provided insights not only for project specific landscape histories, but also for the development of resource management policies and the regional archeological record. A major contribution of this integrated investigation is the reconstruction of alluvial sequences along the Wapanocca Bayou in Arkansas. These deposits archive a relict channel of the Mississippi River, directly related to Nodena Phase occupations.

[249] *Discussant*

Schulenburg, Marcus (University of Wisconsin-Milwaukee)

[187] *Ceramic Analysis in the Miami Valleys: Using Clay Sourcing to Determine Intraregional Contact within the Fort Ancient Tradition*

Fort Ancient (AD 1000-1670) cultural identity has traditionally been examined through ceramic materials. This paper will continue that tradition, utilizing a combination of XRF and XRD techniques to compare ceramic vessels to potential raw materials gathered from the Great and Little Miami Valley regions. This will be combined with the use-life, pre-existing stylistic analyses, and deposition events to illustrate the operational sequences associated with the Fort Ancient ceramic tradition. This will then be used to examine issues of trade, contact, movement and identity within the Anderson Phase of the Fort Ancient tradition.

Schultze, Carol (Historical Research Associates, Inc.)

[267] *Silver Mines of the Northern Lake Titicaca Basin, Peru*

This paper reports results of archaeological reconnaissance of silver mining districts in the Northern Lake Titicaca Basin, Southern Peru. Intensive precious metals mining in the basin is reported for the Inca and Colonial periods. However, archaeological evidence points to a much greater antiquity of metals exploitation. Further investigation of these mining districts can address questions of the origins of metallurgical technology; the timing and intensity of cultural interactions with metalworking zones of the north coast; the organization of production in later periods, as well as political and ideological aspects of precious metals in the pre-Hispanic Andean world.

Schurmans, Utsav [176] *see Hicks, Tyler*

Schurr, Mark (University of Notre Dame) and

Della Cook (Indiana University)

[226] *The Temporal and Cultural Contexts of the Enigmatic Cremation Burials from the Yokem Site, Illinois, USA*

The region near the confluence of the Mississippi and Illinois Rivers in southwestern Illinois, USA has produced evidence that fire was used in mortuary rituals for several thousand years, and that cremation was employed in different ways at different times. Burial attributes, radiocarbon dating, stable isotope analyses and electron spin resonance are all used to place a poorly understood cremation feature located between mounds 6 and 7 at the Yokem site within the regional temporal and cultural contexts. By considering the feature in context, we can better understand the changing role of fire in mortuary ritual through time.

Schurr, Mark [35] *see Alonzi, Elise E.*

Schwake, Sonja (Kenyon College) and Gyles Iannone (Trent University)

[191] *Destruction Events and Political Truncation at the Little Kingdom of Minanha, Belize.*

Sometime in the early 8th century A.D., the little Kingdom of Minanha emerged in the frontier between the competing great kingdoms of Naranjo and Caracol. After roughly a century of success, Minanha's royal residential courtyard was in-filled with rubble, and some key facades and stela monuments were destroyed. Although elite building programs also came to a halt, a significant population did continue to live in the vicinity for a century or more after the fall of the kings. The implications of this data set are discussed, with particular emphasis on what it tells us about the infamous Maya "collapse."

Schwartz, Steven [123] *see Guttenberg, Richard B.*

Schwartz, Glenn (Johns Hopkins University)

[152] *Remembering and Forgetting the Dead in 3rd-2nd Millennium BC Syria: Umm el-Marra 2010 Results*

Recent excavation and analysis at Tell Umm el-Marra, Syria, provide evidence on a diversity of practices for memorializing as well as obliterating the memory of the Bronze Age dead. From an Early Bronze Age (third millennium BC) elite mortuary complex, bioarchaeological, faunal, and DNA analysis provide data on ancestor veneration and intentional desecration and on changes in their materialization through time. In the Middle Bronze Age (early 2nd millennium BC), continuity and discontinuity are both apparent in performances of commemorating and forgetting the dead, including new evidence of human sacrificial practices.

Schwendler, Rebecca (National Trust for Historic Preservation)

[154] *Using Backyard Archaeology to Foster Cultural Resource Preservation*

Archaeological resources are often overlooked in American towns. While a lack of attention can help protect them from damage, it can also lead to disinterest in the past and to the destruction of prehistoric and historic sites in the name of progress. Here I discuss my attempt to use people's fascination with archaeology to promote cultural resource preservation. By excavating and giving public talks about early 20th century privy deposits on my property in a former coal mining town in

Colorado, I try to engage community members in the past and create new advocates for archaeological and historic preservation.

Schwitalla, Al (Al W. Schwitalla Garcia and Associates, Inc.)

[194] *Sub-regional Patterns of Health Stress in Central California*

The pioneering osteological research by Peter Schulz (1981) and his subsequent collaboration with David Dickel and Henry McHenry in the seminal 1982 symposium Paleopathology at the Origins of Agriculture (Cohen and Armelagos 1984) have for many years served as the largest and only cumulative references of diachronic health patterns among hunter-gatherers from central California. This presentation introduces current bioarchaeological results of health stress based on 16,000 individuals that lived in the region from 3000 B.C. to A.D. 1899 and discusses what factors contributed to index prevalence variation given the sub-regional diversity found in central California.

Schwitalla, Al [11] see Jones, Terry L.

Scott, Ann (The University of Texas at Austin)

[266] *Some Preliminary Observations on the Midnight Terror Cave Ceramic Assemblage*

During three seasons of work at Midnight Terror Cave in Belize over 29,000 sherds were collected. While the assemblage is dominated by Late to Terminal Classic wares, Middle Preclassic sherds were identified and a substantial Early Classic component was documented. Ceramic densities are highest in areas of the cave where the density of human bone is lowest suggesting a clear differentiation in the utilization of space. A modified version of type-variety analysis was used to record both vessel form and surface finish. In addition, data were collected on post-production modifications that allow us to offer some insights into vessel use.

Scott, John (University of Bristol, Metcalf Archaeology)

[258] *From Trajan to T. E. Lawrence: 2000 Years of Conflict Stratigraphy in Wadi Yutm, Southern Jordan*
Archaeological reconnaissance of Wadi Yutm in southern Jordan in 2010 observed Trajan period Roman forts and modern defensive structures likely occupied during the Six-Day and Yom Kippur wars. Iron Age and Islamic Period fortifications may also be present, suggesting a 2000 year stratigraphy of conflict within the wadi. The reconnaissance was preparatory to a 9000 acre survey of Wadi Yutm to document the Ottoman strongholds of Kethera and Khadra attacked by Lawrence and the Arab guerrillas during WWI and other conflict sites.

Scott, Paul [46] see Holstad, Emily

Scott, Rachel (Arizona State University)

[16] *Farmer, Warrior, Cleric, King: Multiple Masculinities in Early Medieval Ireland*

While the study of gender has become well established in archaeology, the recent introduction of third-wave feminist theory challenges scholars to produce more nuanced interpretations of past gender identities. In this paper, I explore our ability to recognize difference within gender categories through an analysis of men and male

roles in early medieval Ireland (c. AD 400-1200). Integrating the human skeletal data with the historical, archaeological, and iconographic evidence reveals the influence of age, status, and other social categories on masculine identity. A bioarchaeological approach thus allows discussion of multiple masculinities in early Irish society.

[217] *Discussant*

Scott, Randi (Forensic Archaeology Recovery)

[76] *Beyond the Crime Scene: Humanizing Forensic Archaeology*

The benefits of archaeologies' methods and technologies are increasingly becoming more important and valuable in crime scenes and criminology as a whole. Forensic Archaeology encompasses many different areas from scene recoveries to expert witnesses. One area of importance that cross all facets and tend to be overlooked is "involvement". This paper is intended to explore issues forensic archaeologists encounter with families and communities during and after a casualty has occurred. It will address whether it is necessary and part of forensic archaeologies responsibility to act as facilitators or contributors in the healing and/or closure process to the living.

Scott, Sarah (Wagner College)

[47] *Slave Labor: Uruk Cylinder Seal Imagery and Early Writing*

The emergence of cylinder seals in southern Mesopotamia in the fourth millennium BCE was a new technology vital to temple accounting. During the proto-literate period the type of information carried by the seals and their impressions changed; as this happened the first numerical and inscribed 'proto-writing' also emerged. Assyriologists have examined the development of the numerical systems and 'proto-writing,' while Art Historians and Archaeologists examine the meaning and function of seal imagery. This paper analyzes Uruk seal imagery in conjunction with numerical and 'proto-writing' technologies to reveal the interconnectedness of seal and inscription as a larger accounting system.

Scott-Ireton, Della (Florida Public Archaeology Network) [268] *Discussant*

Searcy, Michael (Brigham Young University)

[264] *Decorative Renascence: Tracing Early Ceramic Designs into the Late Prehistoric Period in the U.S. Southwest/Northwest Mexico*

Cordell (1997) has characterized the late prehistoric period (A.D 1200-1450) in the U.S. Southwest/Northwest Mexico as one of crystallization when "many specific forms, designs, symbols, or motifs can be traced to much earlier periods" but, "they came together in new ways." This paper traces the emergence of designs and motifs among earlier ceramic traditions, such as Mimbres and Ancestral Puebloan, and their later appearance on Salado and Casas Grandes pottery. I use design analysis to explore the spread of styles and symbols throughout time and space and show how these methods contribute to interpretations of interregional interaction and cultural continuity.

Seeley, Kent [19] see Stevens, Stanley M.

Seelinger, Evelyn [230] *see Wells, Helen*

Segre, Carlo [220] *see Friedman, Elizabeth S.*

Seinfeld, Daniel (Florida State University)

[157] *Maize Agriculture and the Origins of Sociopolitical Complexity at San Estevan, Belize*

This paper explores role of maize agriculture in the political economy of Formative period Mesoamerica. Molecular and paleoethnobotanical analyses demonstrated consistency in maize use throughout the Formative period at San Estevan, Belize. This work suggests that agricultural practices were largely unchanged by the emergence of sociopolitical complexity during the Late Formative period. Local hydrological conditions likely facilitated a consistent and decentralized agricultural system. Comparison of these findings to work in other areas of Mesoamerica shows that a variety of agricultural strategies were used to accommodate local environments. This diversity affected developmental trajectories of different sites and areas.

[157] *Second Organizer [157]* *Second Chair*

Seldin, Abigail (University of Oxford)

[196] *Open Doors: A Retrospective on the R.S. Peabody Museum of Archaeology*

As a student at Phillips Andover, my experiences at the Peabody Museum both crystallized my passion for anthropology and launched my academic career. Equipped with a foundation in archaeology and hands-on curatorial experience, I began co-curating an exhibition at the University of Pennsylvania Museum as an undergraduate. Now a three-year gallery exhibition, "Fulfilling a Prophecy" is the first show at the Museum to be co-curated by Native individuals. This work provided the basis for my successful Rhodes scholarship application and acceptance to Oxford's doctoral program. My paper will address the preparation I received at the Peabody for subsequent work.

Sellen, Adam (Universidad Nacional Autónoma de México)

[51] *Murky Waters. Revisiting the Looting of the Sacred Cenote of Chichén Itzá, Yucatán*

The U.S. Consul Edward H. Thompson's looting of the Sacred Cenote of Chichen Itza between 1904 and 1911 is well known to Mesoamerican scholars. Although its story has been told from many perspectives—including Thompson's own unapologetic imperialism and the understandable resentment of Mexicans outraged at the looting of their archaeological heritage—its outlines are widely accepted. Using archival sources, my study takes a fresh look at the case and analyzes the role of the Mexican government in the loss of the artifacts. I also provide new evidence for a long-standing question: Who owns Chichen Itza?

Semon, Anna (University of North Carolina)

[187] *Exploring Late Prehistoric Vessel Assemblages in the Coastal Southeastern US*

Ceramic vessel assemblages are best characterized by studying whole pots. But what happens when there are no whole pots to analyze? Rim sherds offer the next best dataset to assess vessel assemblages. By measuring partial orifice diameters and rim shapes we obtain information about vessel size and form. This paper

presents recent analysis of Late Prehistoric rim sherds, which characterize the Irene Period vessel assemblage from St. Catherines Island, Georgia. These results are compared with other Late Prehistoric coastal vessel assemblages and indicate few vessel forms, but a variety of sizes.

Senn, Matthew (The Ohio State University)

[13] *Early-Middle Holocene Political Economies on the Margins: Incense Kingdom Formation among Nomads in Southern Arabia*

Factors driving political economy formation are often assumed in models of emerging states, but cannot be accepted as implicit without rigorous testing on a variety of data sets. Mobility requires substantial consideration. This paper applies surface analysis in a Geographic Information System to a prevailing model of primary state formation with site data from Yemen and Oman. Nomads present a challenge to archaeologists, confounding attempts to describe and compare economic activities of societies characterized by high residential mobility. Nomads also present a challenge to rulers of emergent states experimenting with newer and more complex methods of administrative control.

Serafin, Stanley (Macquarie University) and Carlos Peraza Lope (Centro INAH - Yucatan)

[56] *Bioarchaeological Insights into the Population Structure of Mayapan*

This study integrates analysis of heritable dental metric traits and archaeological context to reconstruct the population structure of the Postclassic regional Maya capital of Mayapan. The hypothesized existence of a cosmopolitan society composed of biologically distinct social groups is evaluated through assessment of odontometric variation at the site, subgroup, and individual levels of analysis. Comparison is made to previous attempts to identify ethnohistorically known social groups based on architectural, artifactual and mortuary patterns. Implications of the present findings for reconstructions of Postclassic transformations of Maya society are discussed.

Sereno, Paul (University of Chicago), Lamya Khalidi (University of Chicago), Christopher M. Stojanowski (Arizona State University) and Hélène Jousse (Muséum national d'Histoire naturelle - UMR 7209-CNRS)

[133] *Human Succession under Environmental Stress at the Holocene Lake-Margin Site of Gobero, Republic of Niger (7600 – 2000 cal BC)*

Recent excavations at Gobero, an occupational and cemetery site complex in the Sahara Desert, provide a comprehensive record of human succession and cultural complexity during the early to mid Holocene. The site preserves intact burials with grave goods and well preserved faunal and material culture remains. Ninety absolute dates distinguish two successive occupation phases. Both produced pottery and were culturally distinct in terms of subsistence strategies, stone resource acquisition, tool production and consumption, and mortuary practices. Human population continuity across a severe arid episode is possible, although a more diverse community of peoples lived there during the mid Holocene.

Sergheraert, Maelle (ASU)

[58] *Architectural style evolution: Calixtlahuaca's monumental structures through ages.*

Prior to Mexica conquest in 1478, Calixtlahuaca was known as Matlatzinco, a powerful regional capital in the Toluca valley of Mexico. This paper will examine the architectural evolution of the site's monumental structures through time, highlighting the existence of four construction stages. Then, I will ask the question of continuities and changes in Calixtlahuaca's architectural style after Aztec Imperial conquest.

Serra Puche, Mari Carmen (IIA-UNAM)

[21] *Archaeological Otomi TLAXCALA*

The archaeological evidence founded in excavations of housing units-Cacaxtla Xochitécatl make us believe in the possibility that their inhabitants were Otomi. The use of agave for the production of mezcal, residential construction and weaving, as well as female figurines with embroidered clothing similar reasons to those currently used by Otomi women are archaeological indicators of this ethnic affiliation. The study of ethnohistory that mention the presence of Otomi groups in Tlaxcala and ethnoarchaeological work we are doing in some communities of speakers of Otomi help strengthen the hypothesis of ethnic identity-Cacaxtla Xochitécatl

[21] *Second Organizer*

Seymour, Elizabeth [177] see Jones, Emily Lena**Shackley, M. (UC, Berkeley)**

[97] *Obsidian Provenance Studies in the North American Southwest: Provenance Triumph and Archaeological Success*

For the last 30 years the North American Southwest has seen remarkable success in knowledge of archaeological obsidian sources from only a few in the early 1980s to over 60 source groups today. With this database, a number of archaeological problems come to the fore including social and gender organization among the Preclassic Hohokam, large scale Paleoarchaic procurement range reconstruction, understanding of Late Classic period migration and territoriality, and significant secondary deposit studies. This paper will be a summary of 30 years of geological and archaeological work on obsidian in the Southwest, and where we might go from here.

Shackley, Steven [52] see Clark, Jeffery J.**Shah, Sudha (University of Michigan/ Brockington and Associates), Inna Burns (Brockington and Associates, Inc.) and Damon Jackson (Brockington and Associates, Inc.)**

[81] *Fieldwork and Large Scale Predictive Modeling: Section 110 Survey for the Vicksburg District, USACE*
As part of an American Recovery and Reinvestment Act (ARRA) enacted by Congress in 2009, Brockington and Associates conducted intensive cultural resources survey of 6,762 acres at five Vicksburg District Corps reservoirs in Arkansas and Mississippi. The survey areas were located in the Caddo River Valley and the Loess Hills and North Central Hills of the Upper Yazoo Basin. We identified 31 archaeological sites that were not previously known, including a significant multi-component prehistoric midden near the Yocuna River. The project

also included a large scale diet-based archaeological predictive model for the entire Vicksburg District.

Shakour, Katherine

[162] *Perspectives On Community Identity: The Slate Quarries Peoples and Archaeology Heritage*

This project investigates archaeology heritage in the Slate Quarries region of Ireland. It examines the topics of heritage at different levels, meaning and its construction, and local perception of archaeology. This project explores archaeology as an heirloom for the people in the region and the dynamic nature of meanings, associated with archaeology. It explores the factors that contribute to site significance while delving into the multi-scalar nature of meaning, memory, and community identity for a unique area in Ireland. The goal is to understand how this particular community, given the individuality of the history and archaeology, relates to their archaeology.

Shakour, Katherine [107] see Conway, Meagan**Shan, Chen [218] see Gao, Xing****Shantry, Kate (Northwest Archaeological Associates) and Brandy Rinck (Northwest Archaeological Associates)**

[124] *Using Delta Geomorphology to Formulate a Working Model of Buried Archaeological Sites: A Case Study from the Puyallup Delta, Tacoma, Washington*
Geomorphic changes on the Puyallup River delta in Tacoma, WA, influenced the availability of resources for valley occupants during the middle to late Holocene. Geomorphic and archaeological data from three recently identified sites on the delta can be used to study site formation and subsistence strategies that focused on littoral resources within a fluid settlement system that included short-term and long-term residential bases and specialized seasonal sites. The history of deltaic progradation, non-seismic deltaic subsidence, and tectonic subsidence provides chronologic limitations for occupation, expectations for land use, and is a useful tool for interpreting archaeological sites in similar environments.

Shapiro, Lisa (Pacific Legacy, Inc.) and Shelly Tiley (Pacific Legacy, Inc.)

[83] *Carson Lake Archaeology & Ethnography*
This poster summarizes the Class III archaeological and ethnographic study of 30,000 acres within the Carson Lake and Pasture title transfer area in Churchill County, Nevada. The Bureau of Reclamation is transferring the lands to the State of Nevada for use as a State Wildlife Refuge. The study was conducted by private contractors Pacific Legacy, Inc., and North State Resources, Inc., on behalf of the Bureau of Reclamation, Mid Pacific Office. Documentary research and interviews with the Fallon Paiute-Shoshone Tribe enhance interpretation of the high archaeological site density in the project area.

Sharp, William (USDA-NRCS)

[87] *In the Footsteps of Rafinesque and Webb*
Working as an archaeologist for Kentucky NRCS it has been a privilege to visit or rather revisit archaeological sites that form the foundation for our current understanding of the state's past. This paper describes

site revisits and discusses limitations faced, then and now.

Sharratt, Brenton [257] *see Noll, Christopher D.*

Sharratt, Nicola (University of Illinois-Chicago)

[39] *Tiwanaku state fragmentation and domestic practice; collapse phase households in the Moquegua Valley, Peru*

During the collapse of the Tiwanaku state ca. AD 1000, populations in the Moquegua Valley abandoned colonial enclaves in the middle valley and established small, nucleated villages on the coast and in the upper valley. Existing funerary evidence indicates that post-collapse communities adhered to ancestral Tiwanaku rituals. This paper examines the impact of political fragmentation on daily life. Comparison of recently excavated household data from the upper valley with other collapse phase villages, as well as state period sites, suggest that although domestic practices were rooted in earlier customs, different diaspora populations responded to collapse in particular ways.

Shaw, Justine (College of the Redwoods) and Johan Normark

[67] *Settlement dispersion as a strategy to cope with recurrent droughts*

A fluctuating settlement pattern in the Coahuah region in the Northern Maya Lowlands indicates a possible long-term strategy to deal with recurrent droughts. Settlement aggregation near permanent water sources occurred during periods with few droughts (the Classic period). Dispersion of settlement occurred during periods with droughts, most notably during the Terminal Classic period. This pattern differs from the Colonial period when such dispersion did not take place locally, probably due to the Spanish reducción program. This suggests that a Prehispanic organizational strategy to cope with recurrent droughts existed and that the Spanish presence discouraged the use of this strategy.

Shea, John (Stony Brook University)

[22] *What Difference does 1.3 Million Years Make? Lithic Evidence for Behavioral Variability in the Jordan Valley*

Paleolithic archaeologists are increasingly trying to adopt explanatory models from behavioral and evolutionary ecology. In "retooling" lithic analysis for this task, we have to start thinking about the elementary costs and benefits involved in knapped stone technology. This paper compares cost/benefit variation in flake production strategies at two open-air sites in the Jordan Valley dating 1.3 million years apart from one another. Ubeidiya is an Lower Paleolithic site in Israel at which remains of *Homo erectus/ergaster* have been recovered. Ar Rasfa is a Middle Paleolithic site in Jordan attributable to either *Homo neanderthalensis* or early *Homo sapiens*.

Sheets, Payson (University of Colorado)

[8] *Seeking Durable Indicators of Manioc Processing: Obsidian Cutting Edges*

Analyses of sediments from the known manioc beds have produced few microbotanical indicators of manioc. An obsidian blade from a probable harvest processing area sustained an unusual "frosted" usewear from massive accumulation of linear striations parallel to the edge. Of all the usewear types in Lewenstein's replicative

study (1987), it is closest to her cutting of manioc husks (cortex). The planting bed soils at Ceren have small amounts of minerals that could cause striations. The results of an experimental study subjecting replicated obsidian edges to cutting manioc cortex with small amounts of that soil are reported here.

[119] *Discussant*

Shelton, China [111] *see White, Chantel*

Shelton, Rebecca (AR Consultants, Inc.) and Gabriel Wrobel (University of Mississippi)

[204] *Investigation of looted contexts at the Sapodilla Rockshelter, Caves Branch Valley, Belize*

As part of an ongoing regional research project, salvage operations at Sapodilla Rockshelter focused on identifying indicators of the site's use. Ceramic analysis of mortuary vessels and thin deposits of isolated sherds suggests that most activity occurred in the Protoclassic and Early Classic periods. Osteological analysis of disturbed human remains indicated a pattern similar to the nearby Caves Branch Rockshelter of repeated mortuary use in which primary burials were disturbed and scattered by later interments. Furthermore, the initial ceramic, osteological, and lithic analyses have identified differential uses of space within the rockshelter's dark and light zones.

Shen, Chen (Royal Ontario Museum), Xiaoling Zhang (The IVPP, Chinese Academy of Sciences) and Xing Gao (The IVPP, Chinese Academy of Sciences)

[22] *Middle Pleistocene Lithic Technology at the Zhoukoudian Locality 1 Peking Man site, China: New Insights from Stone Tools Use-Wear Studies*

The paper reports the results from use-wear study of lithic artifacts excavated previously from the famous Zhoukoudian Locality 1 cave where 40 individuals of *Homo erectus* fossils were discovered. The new study suggests that that Peking Man lithic technology was not simple as previously thought. The micro-wear evidence indicates many typed tools were made for specific tasks related to processing animal substances. Importantly, most pointed tools were probably hafted, and this provides arguably the earliest evidence for the composition tools in the Chinese Middle Pleistocene. East Asian hominids were not primitive in their use of lithic technology.

Shepard, Ben (UCLA)

[236] *Middle Holocene political economies in the Cis-Baikal, Russia: insights from mortuary data*

Studies of social dynamics in intermediate societies emphasize the importance of rituals such as funerals in structuring political economies in which they are embedded. I present results from an investigation of prehistoric political economy in the Cis-Baikal region of Siberia, Russia, based on mortuary data from Serovo (3800-3000 BC) and Glazkovo (3000-2000 BC) cemeteries. I demonstrate several changes in the relationships between demographic variables (age, sex, burial location) and types of treatment individuals received at death (grave architecture, grave goods). I then discuss the implications of changing burial practices for models of local social organization and political economy.

Shepherd, Carolyn (Retired) [230] *Discussant*

Sheppard, Paul [99] *see Elson, Mark D.*

Sheridan, Susan [152] *see Ullinger, Jaime*

Sherrod, Laura [115] *see Brashler, Janet G.*

Shields, Carl [64] *see Mink, Philip B.*

Shillito, Lisa-Marie (University of York) and Oliver Craig (University of York)

[42] *Feeding Stonehenge: provisioning henges and households in southern Britain in the 3rd millennium BC*
The henges of southern Britain are recognised as ceremonial sites for large-scale feasting by gatherings of people who probably came from far and wide. Excavations at Durrington Walls have uncovered a well-preserved Neolithic settlement with surviving house floors and middens identifiable to particular houses. These present an opportunity for a detailed economic study of the Stonehenge people from household to community. This paper presents preliminary results from pottery residue analysis, which aims to investigate consumption within and between households and ceremonial spaces. It is suggested that contents varied by vessel size, and were deposited differently in public and domestic areas.

Shimada, Izumi (Southern Illinois University) and Go Matsumoto (Southern Illinois University)

[71] *Water, Fire, and Huaca: Rituals of Regeneration and Ancestor Veneration in the Sicán Culture*
The Cupisnique practice of setting an intentional fire at the time of interment of the deceased and temples continued into the later Sicán period in the Lambayeque region of the north coast. We documented numerous episodes of extensive but ephemeral fire setting immediately after the deposition of each new alluvial layer around the Huaca Loro temple mound. These fires spanned 1000-1533 CE. Offerings of ceramics, ingots, textiles and even a whole puma were placed where water would have cascaded down the temple mound. We argue that these activities expressed ancestor veneration and interrelated concepts of transformation and regeneration.

[267] *Discussant*

Shimada, Izumi [156] *see Klaus, Haagen D.* **[260]** *see Cervantes, Gabriela* **[174]** *see Matsumoto, Go*

Shimelmitz, Ron [218] *see Kuhn, Steven L.*

Shirar, Scott [181] *see Gaines, Edmund P.*

Shiratori, Yuko (The Graduate Center, CUNY) and Miriam Salas (Centro Universitario de El Petén)

[243] *Ceramics of the Itza Maya in the Petén Lakes Region*
Recent archaeological researches in the Petén lakes region have provided ceramic information of the Itza in the west and southwestern side of Lake Petén Itza, Guatemala. In 2009 and 2010 Proyecto Arqueológico Tayasal yielded Postclassic ceramics diagnostic of the Itza Maya from the Itza site of Tayasal, which is located at 200m north of the Itza capital Nojpeten. This paper

presents the preliminary ceramic analysis of Proyecto Arqueológico Tayasal and compares these results to recently uncovered Postclassic ceramics from the Itza sites in the Petén lakes region.

Shock, Myrtle

[129] *Paleoethnobotanical study of central Brazilian rockshelters, 500 to 8000 BP.*

Analysis of plant remains from two rock shelters on the Brazilian savanna provides the context for discussing chronological shifts in plant resource utilization. Samples from strata dating between 8000 to 500 BP were analyzed. General patterns observed in measures of plant density and richness by strata were further assessed with ANOVA and chi-squared tests to distinguish the statistically significant patterns. Interpretations of chronological changes are based upon to the archaeological context and plant remains found therein.

[129] *First Chair*

Shockey, Paul (Arizona State University)

[36] *Having the Choice: Thermal Resistance and PIXE Analyses of Woodland Period Ceramics*

This study is an examination of ceramic choices at the Mound House Site (11GE7), Greene County, Illinois. The use of crushed limestone as a tempering agent is largely limited to the Lower Illinois Valley during the Middle Woodland Period (ca. 50 cal B.C. – cal A.D. 400). To determine whether this choice was based on raw material availability or culinary utility, thermal resistance was tested on limestone- and non-limestone-tempered ceramic sherds. Additionally, Proton Induced X-Ray Emission analysis compares the elemental variability of “ceremonial” wares (Hopewell and Baehr) with “utility” wares (Havana and Pike) to infer local or extralocal origin.

Sholts, Sabrina (University of California, Berkeley)

[146] *Three-dimensional modeling of the human skull: An outline-based analysis of prehistoric cranial morphology on the northern Channel Islands of California*

In this study, three-dimensional (3D) digital models were used to analyze morphological variation among human crania from archaeological sites on the northern California Channel Islands. Three different outlines were produced from cross-sectional geometry planes defined by standard craniometric landmarks in the midfacial, palatal, and vault components of each 3D model, and coordinate points along the outlines were transformed with elliptic Fourier analysis. Multivariate statistical analysis of the Fourier coefficients revealed two distinct patterns of midfacial and palatal morphology in the overall sample, consistent with osteological, archaeological, and linguistic evidence suggesting that more than one population may have colonized this region.

[146] *see Warmlander, Sebastian*

Shoocongdej, Rasmi (Silpakorn University Thailand)

[17] *Late Pleistocene Forager Mobility Organization in Tropical Highland Pang Mapha, a Borderland between Thailand and Myanmar*

It is generally assumed that the tropics are less seasonal than temperate environments, so that tropical foragers exhibit only residential mobility strategies. My research

shows pitfalls in disregarding the complexity and diversity of tropical ecosystems, demonstrating that mixed mobility strategies occurred in tropical environments. I present inter-disciplinary research on forager mobility in the seasonal tropical environment of Thailand using data from my excavations at Tham Lod and Ban Rai rockshelters, highland Pang Mapha, northwestern Thailand. I examine the variability and distribution of these Late Pleistocene assemblages, highlighting the processes of interaction between humans and their environments in tropical Southeast Asia.

Short, Laura (Texas A&M) [127] First Chair [127] Second Organizer

Short, Laura [162] see Kamiya, Masahiro

Shortland, Andrew [5] see Erb-Satullo, Nathaniel L.

Shott, Michael (University of Akron) [22] First Chair

Shugar, Aaron [22] see Rosen, Steven A.

Sibold, Jason [192] see LaBelle, Jason M.

Sierra, Thelma [14] see Ceballos Gallareta, Teresa Noemi

Sierra Sosa, Thelma (Centro INAH Yucatán), Andrea Cucina (Universidad Autonoma de Yucatan), T Douglas Price (University of Wisconsin-Madison), James H Burton (University of Wisconsin-Madison) and Vera Tiesler (Universidad Autonoma de Yucatan) [116] Production, Exchange and Population Mobility During the Classic Period. A View from the port of Xcambó, Yucatan, Mexico

During the Classic, the coastal enclave of Xcambó functioned as a salt production center and port, maintaining long-reaching ties with other parts of the Maya world and with Veracruz. In this paper, we explore Xcambó's shifting exchange networks, using settlement, architectural and ceramic evidence. This information is complemented with direct insights on its settlers. From Xcambó's mortuary record, we reconstruct their biological profile, geographic provenience and artificial head shapes. Considered jointly, the bioarchaeological evidence traces cultural affiliations and the geographic mobility of Xcambó's merchants and provides new insights as to the settlement's swift abandonment shortly after 700 DC.

Sillar, Bill (Institute of Archaeology, UCL) [269] Serving Suggestions: Characterising Pottery Use at an Inka Waqa

Qochapata is an Inka site constructed round a natural rock outcrop, close to Qenqo within the Saqsayhuaman National Park, Cuzco, Peru. The well constructed enclosure was the location for elite Inka rituals. An analysis of the pottery assemblage excavated by the Instituto Nacional de Cultura offers the opportunity to evaluate ceramic use at the centre of the Inka Empire. The fabric, form and probable function of the pottery were assessed, and this presentation will consider the significance of the spatial patterning of pottery disposal within the site, as well as the prospect for future inter-site comparisons

Silva, Ana Maria [234] see Waterman, Anna J.

Silva, Rosicler (Instituto Goiano de Pré-História e Antropologia - Universidade Católica de Goiás), Julio Cezar Rubin (Instituto Goiano de Pré-História e Antropologia - Pontifícia Universidade Católica de Goiás) and Jairo Roberto Jimenez-Rueda (Universidade Estadual Paulista, Campus Rio Claro) [68] Zonificación geoarqueológica aplicado a la gestión de recursos culturales : estudios de casos en Brasil Central

El present trabajo tuvo como objetivo la elaboración de mapas de potencialidad arqueológica para cazadores-recolectores y agricultores ceramistas, utilizándose de los conocimientos de la geociencias. Para tal, fueron seleccionadas una área ubicada al sur-oeste de la provincia de Goiás y otra ubicada en el Distrito Federal. La metodología aplicada tiene apoyo en la utilización de datos cartográficos disponibles y a partir de esas, se elaboro el mapa de declividad, en el cual fueron lanzadas las demás características ambientales, resultando en el establecimiento de las áreas con característica propias, las cuales fueron analizadas bajo la óptica de la arqueología.

[68] First Chair

Silverman, Shari (HRA)

[124] Geoarchaeological Representation of Human-Altered Environments in the Pacific Northwest

The Pacific Northwest features numerous human alterations to its geomorphology: prehistoric, historic, and modern. These include constructed items, such as dams, jetties and irrigation ditches; and by-products of living, such as shell middens and other refuse piles. Archaeological surveys and geotechnical data illustrate large scale consequences, including dams' effects downstream, while testing and data recovery also depict immediate, small-scale impacts, like an open hearth's burning of its adjacent soil. This presentation investigates the factors influencing the geoarchaeological record's portrayal of these human-altered environments.

Silverstein, Jay (JPAC/U of Hawaii), Robert Littman (University of Hawaii), Joshua Trampier (University of Chicago), Nicholas Hudson (University of North Carolina, Wilmington) and Daniel Jones (University College of London)

[258] Kilns, Harbors, and Temples: Excavations of the Ptolemaic Occupation on the Northern Edge of Tell Timai, Egypt

The 2010 season of the University of Hawaii project at Tell Timai in the Nile Delta has yielded a wealth of data about the Ptolemaic occupation history of the northern portion of the tell. Magnetometry and excavation data have begun to illuminate the early ceramic industry and the phasing of the temple complex which followed. The latest discoveries including amphorae of imported clay, destruction and reconstruction levels, and religious icons are beginning to demonstrate how the nome capital articulated with the ideological, political and economic spheres of the Ptolemaic world.

Simborth Lozada, Erika [33] see Burkholder, Jo Ellen

Simmons, Alan (University of Nevada Las Vegas)

[89] *Pre-Neolithic Mediterranean Seafarers: the Evidence from Cyprus*

New studies over the past several years demonstrate that, contrary to conventional wisdom, the earliest occupants of at least some of the Mediterranean islands were pre-Neolithic peoples with considerable seafaring skills. This was clearly demonstrated in Cyprus at Akrotiri Aetokremnos (ca. 12,000 BP), which also is suggestive a human role in the extinction of endemic pygmy hippopotami. This paper presents results of re-excavation at Aetokremnos and the testing of possibly contemporary near-by sites. It concludes with a summary of claimed pre-Neolithic sites, including recent claims of great antiquity in Crete, and some of the issues involved in firmly documenting these.

Simmons, Alan [26] *see Mandel, Rolfe D.*

Simms, Stephanie (Boston University)

[40] *Rooms with a View: The Organization of Domestic Space on a Puuc Maya Hilltop*

Excavations at Escalera al Cielo, located in the Puuc region of Yucatan, Mexico, provide new evidence for residential hilltop occupation, a unique feature of the northern lowland Maya landscape. This paper synthesizes architectural, artifactual, and botanical data to explore an elite Terminal Classic household and the activities performed therein. A relatively rapid abandonment and lack of post-abandonment disturbance afford extraordinary contexts with abundant de facto refuse from both indoor and outdoor spaces. Ongoing, microscale analyses of these remains reveal the material patterns of daily life.

[221] *see Parker, Evan A.*

Simon, Arleyn [92] *see Hodgins, Greg W L*

Simpkins, Robert (San Jose State University)

[258] *Affiliation and rivalry in the architecture of India's Golconda kingdom*

During research conducted in India, I documented numerous structures from the Golconda kingdom (1518-1687), principally mosques and associated structures. Many of these have little or no historical information. They can best be understood through a combination of this limited historical data, analogy, and their spatial and temporal distributions. Although I initially suspected an imperial-style expansion, a more likely explanation may be the desire of the nobility to build in the 'courtly style' in locations under their control reflecting social aspirations and tensions that link politics, social values, and material culture to geography and state evolution.

Sims, Marsha (Nat Resources Conserv Svc)

[87] *Paleoindian Cultural Material in Stream Corridors Used for Trails*

This research examines oval bifaces and stemmed projectiles of Paleoindians relating them to streams as trail corridors. Limitations and barriers are discussed. N. and S. America offer examples and the author presents discoveries from southeastern Colorado. Snakes are a key to the design and selection of material for tool kits in Plains settings and birds in mountain settings. Scales and feathers are elements incorporating snake forms that have perished. A central place is Meso America where the feathered serpent joins these elements in symbolism

and where archeologists recently discovered three Paleoindian skeletons in submerged tunnels with one in flexed burial.

[87] First Chair

Sinclair, Alan [192] *see Rodrigues, Teresa Lee*

Singleton, Courtney (University of Maryland College Park) and Larry Zimmerman (Indiana University Purdue University Indianapolis)

[197] *Thinking Outside the Excavation Unit: An*

Archaeology of Contemporary Homelessness

Activist Archaeology goes beyond public education or ideological critique, demanding collective, sometimes radical, social action against structural inequalities in contemporary society. This paper discusses the material landscape of homelessness, attempting to establish connections between homelessness and the greater economic and political networks in which it functions. Expertise in material culture, the construction and presentation of unpopular narratives, and the process of historic preservation are unique contributions and strengths that archaeologists can utilize to effect change in contemporary power relationships, which can aid in creation or transformation of activist politics.

Singleton, Theresa (Syracuse University)

[121] *Paradise or Hell? Archaeological implications for Contrasting Views of Cuban Coffee Landscapes*

Archaeological studies of plantations have more often emphasized the creation rather than the consumption of landscapes. Cuban coffee planters designed their plantations to facilitate coffee production and to control slave movement, but also to establish showplaces. Many Cuban coffee plantations became world renown for their beautiful gardens, tree-lined avenues, and commanding vistas of the surrounding area. This paper examines archaeological insights gained from the study of two contrasting audiences or consumers of these landscapes—enslaved laborers and foreign visitors—for locating, identifying, and interpreting plantation spaces at the coffee plantation Santa Ana de Biajacas.

Sinton, John [261] *see Mills, Peter R.*

Sisk, Matthew [176] *see Villeneuve, Suzanne [176]* *see Hicks, Tyler*

Skidmore, Maeve (Southern Methodist University)

[227] *Examining Wari domestic occupations in the Cusco region: preliminary results from Hatun Cotuyoc*

Wari occupation of the Cusco region centered on two settlements: Pikillacta and Huaró. Recent research at Hatun Cotuyoc in Huaró sheds light on the daily life of residents of this Wari province. At Hatun Cotuyoc excavations have located structures similar to Middle Horizon domestic architecture in Ayacucho, with trash assemblages containing material culture of mixed Wari and local traditions. Comparison of these assemblages to those recovered from the center of Pikillacta brings new perspective on administrative relationships in the province, as well as differences between the two principal Wari centers in the region.

[227] First Chair [227] Second Organizer

Skinner, A.R. [2] *see Zhou, Cathy XY [218]* *see*

Blackwell, Bonnie A. B.

Skinner, Anne (Williams College), Pamela Willoughby (University of Alberta) and Clarissa Andre (Williams College)

[109] *ESR Dating of Mollusc Shells from the Iringa Region, Tanzania*

Middle Stone Age tools have been recovered from Magubike and Mlambalasi rockshelters. The ages of these sites would be expected to exceed the limits of ¹⁴C dating. Therefore several shells, sp. *Acatina*, were selected for ESR dating. The one from Mlambalasi gave an age within the Holocene and therefore suggests reworking within the site. From Magubike, a sample collected above the level where hominin teeth were found dated to ~150 ka. One from the lower level was saturated and therefore could not be dated. Further samples should be tested to investigate the possibility of reworking in this site.

Skinner, Anne [3] *see Loewen, Natalia*

Skinner, Craig [160] *see Connolly, Tom [160]* *see Baxter, Paul*

Slater, Donald (Robert S. Peabody Museum & Brandeis University) and Nathan Hamilton (University of Southern Maine)

[196] *In the Footsteps of the Founders: Current Archaeological Research at the Robert S. Peabody Museum of Archaeology*

Although the Peabody Museum's primary focus has shifted towards education during the past decade, this does not preclude the institution from supporting archaeological research. In fact, the Museum sees great value in continuing its distinguished program of research and recognizes that archaeological fieldwork and the reanalysis of museum collections with modern techniques present rich opportunities to engage students in experiential learning. This paper highlights recent work with existing Peabody collections, as well as new research conducted through the Rebecca Nurse Homestead Archaeological Project, the Central Yucatan Archaeological Cave Project and the Bilingual Archaeological Learning Adventure in Mesoamerica (B.A.L.A.M.).

Slater, Philip (University of Illinois Urbana-Champaign)

[74] *Results of Experimental Obsidian Microwear Analyses using a Scanning Electron Microscope*

Traditional lithic microwear studies use light microscopy to determine chert and flint artifact functions. Applying this technique to obsidian is problematic because light reflects off its glassy surface hindering observation. Because obsidian is too reflective for light microscopy and its brittleness generates different damage patterns than flint and chert, it requires a different set of analytical methods. Scanning electron microscopy (SEM) negates light reflection and permits clear, high magnification imaging of edge damage. I will present results of experiments showing that use-actions on several materials can produce diagnostic usewear patterns on obsidian artifacts that are observable with a SEM.

[12] *see Ambrose, Stanley H.*

Slaughter, Mark (Bureau of Reclamation), James Kangas (Bureau of Reclamation), Pat Hicks (Bureau of Reclamation) and William Heidner (U. S. Army, Yuma Proving Ground)

[83] *Preparing for Operation Overlord: a Testing Facility on the Colorado River*

In preparing for Operation Overlord (the Invasion of Normandy) in World War II, the U.S. Army established a bridge testing facility at the base of Imperial Dam, north of Yuma, Arizona. This facility allowed engineers to test bridges against a variety of stream velocities to see if these would survive while being crossed by tanks and other equipment. Recent fires in the area has cleared these lands and exposed where the buildings and features are located. This poster documents the historical use of this facility and provides an example of regional World War II era archaeology on the Lower Colorado River.

Slessman, Scott [215] *Discussant*

Sload, Rebecca

[266] *The Case for Specialized Activity Areas in the Cave under the Pyramid of the Sun, Teotihuacan*

This paper continues reporting on analysis of the 1978 Teotihuacan Mapping Project test excavations in the cave under the Pyramid of the Sun. Prior analysis showed that the vast majority of ceramics consist of only three forms, virtually all utilitarian. A more thorough analysis that includes context, radiocarbon dates, and non-ceramic artifacts indicates the presence of different activity areas, ritual in nature, as would be expected based on the location of the cave. Hypothesized activities and their implications are explored, including the important one that counters historical conclusions about cave assemblages indicating "habitation" when they consist of "utilitarian" items.

Smalldon, Sue, Tootsie Daniel (Traditional Owner) and Robyne Churnside (Traditional Owner)

[259] *Dummies Guide to Getting the Public Involved in Conservation of the Archaeological Record: an example of Traditional Owners; Archaeologists; Politicians and the Public working together for the Conservation of Burrup Peninsula (Murujuga) Rock Art in Western Australia.*

This paper presents a public campaign methodology adopted for the conservation of rock art on the Burrup Peninsula (Murujuga) in Western Australia, which is home to more than a million panels of rock art and is one of the world's most significant cultural heritage precincts. The 'Stand Up for the Burrup' campaign seeks to draw attention to the archaeological record and to urge its protection from industrial development. We will discuss how Traditional Owners; archaeologists; politicians and the public, can work together for heritage conservation and suggest the methodology can be applied for conservation of significant cultural heritage precincts in the Americas.

Smallwood, Ashley (Center for the Study of the First Americans Texas A&M University) and Thomas Jennings (Texas A&M University- Center for the Study of the First Americans)

[120] *Introduction to Clovis: Current Perspectives on Technology, Chronology, and Adaptations*

This paper introduces the symposium Clovis: Current

Perspectives on Technology, Chronology, and Adaptations. The earliest Clovis archaeological sites were discovered in the Plains and the West. These early finds have shaped our understanding of the cultural complex and established standards for Clovis technology, chronology and adaptations. The addition of new sites helps reaffirm some universal characteristics, but also highlights nuances of variation within Clovis. This variation raises the question, what is Clovis, and the papers in this symposium provide the most current evidence of Clovis technology, chronology, and adaptations.

[120] *First Chair*

Smallwood, Ashley [155] *see Jennings, Thomas A.*

[155] *see Smith, Heather L.*

Smiley, Francis [134] *see Wandler, Cole B.*

Smith, Alexander (Brown University Joukowski Institute) and Danielle Raad (Harvard University)
[62] *The Metallurgy of Iron Mine Hill: The Economic Implications of the Use of Cumberlandite in Colonial Era Iron Artifacts from Rhode Island*

Cumberlandite is an iron ore located primarily in Cumberland, Rhode Island. During the Colonial era, the ore became a significant source of raw iron in New England. Rich in titanium, cumberlandite presents a unique opportunity to source excavated ore samples, byproducts, and artifacts. Using both XRF and SEM-EDS analyses, we have established a basic fingerprint of cumberlandite to analyze a set of samples from two early iron manufacturing sites in Rhode Island. Due to the singular concentration of the ore in Cumberland, these analyses may highlight patterns of iron distribution within Rhode Island, and with future application, throughout New England.

Smith, Alexia (University of Connecticut)

[111] *The Use of Multivariate Statistics within Archaeobotany*

Over the past decade, the use of multivariate statistics to examine archaeobotanical data has become more commonplace, enabling a rigorous approach to data exploration. This paper reviews the use of multivariate statistics within archaeobotany to examine questions at both the site and regional level. It concludes with a discussion of the potential for correspondence analysis to integrate archaeobotanical and zooarchaeological data in order to examine ancient food production in a more quantitative and holistic manner.

[45] *Discussant*

Smith, Beth (Nevada Department of Transportation)

[6] *Great Basin and California Crescents: Determining Function Through the Manufacturing Continuum*

Crescents are usually found in pre-Archaic lithic assemblages in the Great Basin and California, but understanding of their function has been limited by a lack of stratified contexts and definitive use-wear results. Through the examination of their manufacturing processes, sourcing data and of Great Basin geography, a better understanding as to what conditions (time, location, and subsistence strategies) favored the use of crescents can also provide clues as to their eventual disappearance from the early hunter-gatherer's toolkit.

[163] *see Creger, Cliff*

Smith, Bruce (Smithsonian Institution)

[111] *Recognizing Human Niche Construction in the Archaeological Record*

Small-scale pre-industrial societies enhance their local environments in a variety of different ways in order to increase the availability of those wild plant and animal species they rely on for food and other raw materials. A series of general categories of human niche construction involving wild components of biotic communities are briefly described, and the difficulties encountered in recognizing them in the archaeological record are considered.

Smith, Christy [150] *see Gray, Amie*

Smith, Craig (University of California, Santa Barbara)

[229] *Second Chair* [229] *Second Organizer* [229] *see Edwards, Matt*

Smith, Craig and Lance McNees (ENTrix, Inc.)

[168] *Persistent Use of the Landscape and the Mid-Holocene Housepits of Wyoming*

The stability of mobility patterns as reflected by the persistent landscape use in a redundant manner over decades and centuries is an important dimension of hunter-gatherer residential mobility strategies that is typically not considered. Investigating mobility patterns over the long term contributes to the understanding of the complexities of hunter-gatherer settlement systems. The mid-Holocene Wyoming housepit dataset provides an opportunity to explore these long term stable mobility patterns, exemplifying the usefulness of archaeological data in delineating persistent landscape use. The Wyoming housepit dataset evidences persistent landscape use over at least two thousand years at three scales of spatial congruence.

Smith, Donna (Indiana University of Pennsylvania)

[65] *Comparing the Effectiveness of Ground Penetrating Radar in Identifying Stockade Features in Late Prehistoric and Historic Sites*

The proposed poster presentation will focus on a study of the effectiveness of Ground Penetrating Radar in locating stockade features in late prehistoric and historic archaeological sites. The use of GPR in identifying features is becoming more popular in the archaeological community, yet its ability to identify late prehistoric features may be questionable. The research will include GPR surveys and ground-truthing of two sites – Ft. Shirley in Shirleysburg, Pennsylvania and Mary Rinn in Indiana, Pennsylvania. The research will include a GPR survey, ground-truthing of anomalies suspected to be stockade features, and an analysis of the effectiveness of the GPR survey.

[65] *First Chair* [138] *see Chiarulli, Beverly A.*

Smith, Erica (University of West Florida)

[89] *Spanish and Mexican Indian Artifacts from the Emanuel Point Shipwrecks*

In this paper, I will discuss the provenance of selected artifacts from the 1559 Tristán de Luna shipwrecks through chemical characterization and historical research. Excavation and laboratory analysis of the two ships (Emanuel Point I and II) have identified a number

of artifacts from the Emanuel Point Shipwrecks that are believed to have been made in Mexico and Spain. By employing Instrumental Neutron Activation Analysis and Mass Spectrometry it may be possible to source these artifacts to either Spain or Mexico based on chemical composition and determine if these methods are suitable for characterizing 452-year-old waterlogged artifacts.

Smith, Fred [218] *see Karavanic, Ivor*

Smith, Geoffrey (University of Nevada, Reno) and Jennifer Kielhofer (University of Nevada, Reno)

[262] *Late For Dinner: A First Look at the Stemmed Points and Bifaces from Last Supper Cave*

Located in northwest Nevada, Last Supper Cave was excavated between 1968 and 1974 by Tom Layton and Jonathan Davis. Although work there revealed a rich record of human occupation including a substantial Paleoindian component dating to as early as 10,300 14C B.P., materials from the site were never fully analyzed. In this paper, we present the results of our technological and source provenance analyses of stemmed points and bifaces from the Paleoindian component at Last Supper Cave and compare them to the results of similar analyses of the bifaces from the Parman Localities, a series of nearby open-air Paleoindian sites.

[262] *First Chair*

Smith, Grant [87] *see Spencer, Alan C.*

Smith, Heather (Center for the Study of the First Americans) and Ashley Smallwood (Center for the Study of the First Americans, Texas A&M University)

[155] *Variability in Clovis Point Shape in North America Using Geometric Morphometrics*

In this paper we present the results of a shape analysis of Clovis fluted points from sites across North America representing the Southwest, Northern Plateau and Rockies, Plains, Northeast, and Southeast regions. With use of geometric morphometrics, the entire geometry of the artifacts is preserved throughout analysis, providing a more robust statistical expression of shape for use in comparative morphological explorations than standard morphometric variables. Our analysis expands a previous investigation of major factors of variability in Clovis point shape in North America to include specimens representing the American Southeast with a specific objective of addressing patterns of geographic variability.

Smith, Heather [181] *see Younie, Angela M.*

Smith, J.R. [218] *see Blackwell, Bonnie A. B.*

Smith, Jennifer [26] *see Hritz, Carrie*

Smith, Karen, Sara Bon-Harper (Monticello) and Fraser Neiman (Monticello)

[207] *Site Structure and Slavery at Monticello Plantation in the Late 18th Century*

This poster explores how the analysis of archaeological site structure can advance our understanding of changing economic and social strategies pursued by enslaved field laborers at Monticello plantation during the late 18th century. We use Bayesian spatial smoothing and correspondence analysis of chronologically sensitive

ceramic type frequencies in plowzone quadrats to separate synchronic differences from patterns of change among households. Comparing the results with variation among assemblages from subsurface features and variation in the features themselves yields new insights into change in storage and costly signaling practices.

Smith, Kevin (Haffenreffer Museum, Brown University), Michele Smith (Haffenreffer Museum, Brown University) and Thomas Urban (Brown University)

[42] *Deep in the Glaciermen's Domain: archaeological investigations by the Haffenreffer Museum at Gilsbakki, western Iceland, 2008-2010*

The site of Gilsbakki was, according to documentary records, the seat of a Viking Age chieftainship, a medieval ecclesiastic estate, and an early modern parish center. By another reading, Gilsbakki's history reflects a thousand year struggle for dominance with a rival elite center at Reykholt, 15 km away. Excavations, geophysical prospection, and collections analyses by Brown University researchers from 2008-2010, documented a 2.4 meter deep, stratified, artifact-rich record at Gilsbakki suggesting complementary, material narratives about early medieval elite power, changing responses to six centuries of colonial rule, and the emergence of "modernity" in the 18th century North Atlantic.

Smith, Michael (Arizona State University)

[214] *Can Archaeological Blogs be used for Serious Scholarship?*

Most archaeological blogs are aimed at the dissemination of information to a non-professional audience, with a few blogs focused on communication of professional information among archaeologists. I explore the possibilities for expanding blogging beyond a teaching-service-entertainment orientation into a more serious intellectual realm. Why are there no archaeological blogs for serious intellectual conversation (like the anthropology blog, "Savage Minds"). Might archaeological blogs be used for the production of intellectual content through collaboration among professionals? I discuss some of the roadblocks and potential benefits to expanding archaeological blogging in the direction of intellectual and scientific production.

[58] *Discussant*

Smith, Michael [90] *see Isendahl, Christian*

Smith, Michele (Research Associate Haffenreffer Museum of Anthro)

[42] *Time Warp: Women, weaving, and wool in Iceland 900-1800 AD*

Collections of archaeological textiles from the Viking Age through the 19th century are abundant in Iceland. Despite their potential to reveal information about their makers – women – they remain poorly understood. This paper presents preliminary data from 12 sites –and particularly Gilsbakki, an elite site in western Iceland – and reports initial findings from a 3-year NSF Arctic Social Science project examining women's roles through time in the preparation and production of textiles that served both in the political economy (as currency and payment of tribute) and as household products (clothing etc).

Smith, Michele [42] *see* Smith, Kevin P.

Smith, Nicole [168] *see* Orchard, Trevor J.

Smith, Sam [150] *see* Guthrie, Brady H.

Smith, Scott (Franklin & Marshall College)

[93] *Ceremonialism and the Social Relations of Production during the Late Formative Period (200 BC – AD 500) in the Southern Lake Titicaca Basin, Bolivia*
The Late Formative was a dynamic time in the southern Lake Titicaca Basin. A series of multi-community polities are argued to have controlled the region, although the precise organization and influence of these polities remains poorly understood. In this paper I trace the history of one multi-community polity centered at Khonkho Wankane in the Desagüadero Valley. In particular, I consider how ceremony and belief articulated with the social relationships surrounding economic production. I conclude by hypothesizing ways in which ceremony and ideology were manipulated to underwrite the political and economic centralization of the nearby Tiwanaku state around AD 500.

Smith, Stuart (UC Santa Barbara) and Michele Buzon (Purdue University)

[152] *Identity, Commemoration and Remembrance in Colonial Encounters: Burials at Tombos during the Egyptian New Kingdom Nubian empire and its aftermath.*
Commemoration of individuals through burial provides a critical arena for the negotiation of identities in colonial encounters. Burials at Tombos, an Egyptian colonial community in Sudanese Nubia founded in c. 1400 BC, reflect remembrances that vary by sex, class and chronology. While most individuals commemorated their Egyptian identities, some women at Tombos identified as Nubians in their burials. In addition, various types of burials reveal social class differences. They also reflect the cultural entanglements common to colonial encounters that blended elements of both cultures and eventually led to the emergence of a new, hybrid identity in the empires aftermath.

[229] *Discussant*

Smith, Stuart [246] *see* Herbst, George

Smith, Susan and Karen R. Adams

[20] *The Perishable Side of Archaeology: Plant Remains and Prehistoric Subsistence in the Grand Canyon*
Archaeobotanical studies in the Grand Canyon have been rare. Recent Museum of Northern Arizona excavations are the first to integrate systematic studies of both micro and macro botanical remains from multiple archaeological sites along the Colorado River. Here we summarize pollen and flotation records from Pueblo period residential sites in the eastern Grand Canyon. Results show that by ca. 1000 AD, Grand Canyon farmers grew maize, cotton, and squash. In addition, they harvested wild plant resources including mesquite, cacti, and grasses. Charcoal from thermal features represent a variety of local and higher elevation woods, some probably harvested as driftwood.

Smits, Nicholas (AINW, Inc)

[160] *A View from Craig Mountain: New Perspectives on*

the Stockhoff Basalt Quarry in Northeastern Oregon
The Stockhoff Basalt Quarry (35UN52), one of the largest and best-known archaeological sites in Oregon, encompasses over 3,400 acres of Craig Mountain in the northeastern part of the state. Native people have quarried fine-grained volcanic material from this area for thousands of years. Recent surveys resulted in the identification of numerous artifact concentrations at 35UN52 and the recordation of more than 230 additional pre-contact archaeological resources— including lithic scatter sites, rock features, quarry sites, and isolated finds—in adjacent areas of Craig Mountain. This paper investigates the relationships among these newly recorded sites, the Stockhoff Basalt Quarry, and local geology.

Smyth, Michael (Foundation for Americas Research/Rollins College), David Ortegón Zapata (Universidad Autónoma de Yucatán), Nicholas Dunning (University of Cincinnati) and Eric Weaver (University of Cincinnati)

[266] *The Xcoch Grotto, Yucatan: Paleo-Climate Change and Maya Cultural Responses*

Xcoch is a deep water cave in the Puuc region located beneath a large center of the same name beginning in the Middle Preclassic period. Under investigation since 2006, cave mapping, ceramic analysis, and soil-speleothem sampling now provide data to show that the Xcoch site suffered from repeated cycles of drought. The ancient Maya responded to severe climate change by engineering systems of water management and storage but also collected water from the cave and performed rain ceremonies among other ritual activities. Preliminary results of the cave work are presented particularly as they relate to surface architecture at Xcoch.

Snead, James (George Mason University) and J. Jefferson Reid (University of Arizona)

[18] *From Hewett to Haury: Thoughts on Change and Continuity in Southwestern Archaeology in the 1930s*
Don Fowler's history—A Laboratory for Anthropology: Science and Romanticism in the American Southwest, 1846-1930—labels the 1930 end date of his narrative as a “time of transition.” According to Fowler, “Hewett finally was able to rule Chaco Canyon”, “there was a Harvard presence throughout the 1930s”, and “with the exception of Paul Martin's forty year archaeology program out of the Chicago Field Museum...., subsequent Southwestern archaeology was conducted by regional institutions....” We discuss this “time of transition” from our complementary historical perspective on people, places, and institutions of New Mexico and Arizona.

[215] *Discussant* **[94]** *First Chair*

Snetsinger, Andrew (Trent University)

[75] *An intra-site analysis of the Mortuary assemblage at the ancient Maya center of Minanha, Belize*

This paper presents the preliminary results of an intra-site analysis of the mortuary assemblage at the ancient Maya center of Minanha, Belize. The data set includes various grave types, associated offerings, and human remains. The assemblage itself spans the Terminal Preclassic to Early Postclassic periods, and is representative of the entire socio-economic and socio-political spectrum of the broader Minanha community. Using a temporal-spatial framework, the paper highlights

some of the key trends in mortuary practices over roughly a millennium of occupation.

Snow, David (Cross-Cultural Research Systems) and Kari Schleher (University of New Mexico)

[264] *Read Their Lips: function and habitus in early Rio Grande glazeware bowl rims*

Modeling of Rio Grande Glazeware bowl rims during the early stages of its production (ca. A.D. 1315-1450) encompasses Mera's types A through C. Traditionally believed to express chronological relationships based on seriation studies by N. C. Nelson and H. P. Mera, the continued focus on the perceived chronological sequence of these early bowl rim varieties ignores possible reasons underlying variation in bowl rim forms. Here we propose possible factors to account for the appearance of modified bowl rims on early glazeware bowls.

Snow, Dean (Pennsylvania State University) [118]
Discussant [55] Discussant

Snow, Meradeth (UC Davis)

[219] *Further Analysis of mtDNA from the Tommy and Mine Canyon Sites*

Ancient mitochondrial DNA analysis of samples from the Chaco outlier Tommy and Mine Canyon Sites (PII and PII sites located near Farmington, New Mexico) originally revealed a distinct difference between the sites in terms of their haplogroup frequencies. Additional samples from both sites have allowed for investigating whether original difference was due to drift or sampling error. The sites were compared with those from both modern and prehistoric populations in the desert Southwest, including samples from the Mimbres and Casas Grandes (Paquime), to better understand the regional context of the inhabitants, as well as inter-regional relationships.

Sobel, Elizabeth (Missouri State University)

[160] *The Expansion Model of Post-Contact Change in NW Coast Exchange Systems: An Archaeological Test Using Obsidian Evidence from the Lower Columbia River*

Scholars widely assume that during the early decades of Euroamerican influence on the NW Coast of North America, the volume and geographic scope of long-distance exchange activity increased among Native communities. However, this Exchange Expansion Model (EEM) is based on ethnohistory and remains untested by archaeology. I address this problem with an archaeological test involving pre-contact and post-contact obsidian artifact data from three Lower Columbia River sites - Cathlapotle, Clahclellah, and Meier. Results support the modeled increase in volume, but not the purported increase in geographic scope, in native exchange activity in the wake of Euroamerican arrival in the area.

Sobolik, Kristin [206] *see Belknap, Samuel L.*

Sobur, Marta (Harvard University)

[13] *A survey of theoretical approaches to the study of ancient Arabian economies.*

In 2011 Arabian archaeology is a well established and rapidly growing field of inquiry studying the emergence of social complexity in multi-disciplinary research programs in all corners of the Arabian Peninsula. Over two

decades since the publication of major synthesizing works (Tosi 1986, Potts 1991), the time is ripe to consider closely the prevalent theoretical frameworks in the study of ancient Arabian economies. This review of scholarly responses to the major theoretical debates concerning economic systems in Arabian prehistory aims at systematizing the prevalent models and identifying opportunities for revisiting the existing theoretical paradigms.

[13] *Second Chair*

Soderland, Hilary (Boalt Hall, UC-Berkeley) [110]
Discussant

Sofaer, Joanna (University of Southampton)

[16] *Touching the Body. Performing Sex and Gender in Osteoarchaeology*

The interaction between different kinds of bodies – the living and the dead, the fleshed and the skeletal – is the focus of this paper. It is explored through a discussion of the parallels and dissonances between performance art and human osteoarchaeology – two disciplines that share a distinctive focus on the interpretive possibilities generated through touching the human skeleton. In particular, osteoarchaeology can be understood as a performance-based experiential research process in which tactile engagement with the skeleton follows a script to (re)create the sex and gender of the human body.

Solar Valverde, Laura [237] *see Bauer-Clapp, Heidi J.*

Soler-Arechalde, Ana (UNAM)

[92] *Burned and Unburned stuccos employed to improve the paleosecular variation of the geomagnetic field since Prehispanic times*

The first secular variation curve of Mesoamerica from AD 1 to 1200 was done by Wolfman(1990) with burned stuccos. The inclusion of ground volcanic scoria in Central Mexico stuccos allowed us to propose the hypothesis of "unburned stuccos made with scoria could record the magnetic signal", many of the dates obtained from them were corroborated with radiocarbon dates. Since 1999 we have been intensively working and numerous ¹⁴C data become available from Central Mexico improving the stratigraphy and chronology. In light of these new radiometric and magnetic data we present an updated secular variation curve for the last two millennia.

Solis, Kristina (University of Texas at San Antonio)

[179] *Relations between south Texas Hunter-gatherers and complex Mesoamerican societies*

The hunter-gatherers that occupied the deep-south Texas coast from the Late Archaic to Late Prehistoric periods are not well known. These scattered hunter-gatherer societies subsisted on marine resources and had an impressive marine shell industry. Their marine shell artifacts have been found in sites of complex Mesoamerican cultures such as the Huastecs and Aztecs. Likewise, Mesoamerican artifacts, ceramics and jade, have been discovered in south Texas hunter-gatherer sites. This poster will investigate these artifacts as well as the available literature in order to build a more holistic picture of the relations between south Texas hunter-gatherers and distant complex Mesoamerican

societies.

Solis, Reyna [41] see *Melgar, Emiliano R.*

Solometo, Julie (James Madison University), Alison Rautman (Michigan State University) and Matthew Chamberlin (James Madison University)

[53] *Assumptions, Expectations, and the (Apparent) Reality of 12th and 13th Century Village Life in Central New Mexico*

The ethnohistoric record shows that the border pueblos had complex relationships with their Plains neighbors, who traveled west both to trade and raid. It seems commonplace to assume that these sorts of relationships have a long history. The first plaza-oriented pueblos in Salinas have been interpreted as potential fortresses, their upland locations affording defense and panoramic views of enemy territory to the east. Recent excavations at early Salinas pueblos complicate this interpretation. Architecture, evidence of burning, and settlement patterning point also to a concern with enemies to the west, where population movements coincide with aggregation in the Rio Abajo.

Solometo, Julie [136] see *Chamberlin, Matthew A.*

Somerville, Andrew (University of California, San Diego), Paul Goldstein (University of California, San Diego), Sarah Baitzel (University of California, San Diego) and Margaret Schoeninger (University of California, San Diego)

[233] *Paleodiet in the Tiwanaku Periphery: Carbon and Nitrogen Isotope Data from Rio Muerto, Moquegua, Peru*
As markers of individual and group identity, dietary practices convey valuable information on ethnicity, gender, and status-based differences within archaeological populations. Through analysis of bone carbon and nitrogen stable isotope ratios, we reconstruct the paleodiet of the Middle-Horizon Tiwanaku from Rio Muerto in the Moquegua Valley of Southern Peru. Our results are compared to previously generated data from the earlier Huaracane, succeeding Tumulaca and Chiribaya populations, and to highland Tiwanaku data to assess dietary changes in relation to political and demographic changes across the Tiwanaku core and peripheral regions. Additionally, we investigate gendered food behavior in this peripheral Tiwanaku colony.

Somerville, Andrew [233] see *Kellner, Corina M.*

Sommer, Caitlin (University of Colorado at Boulder)
[211] *Animacy, Symbolism, and Feathers from Mantle's Cave, Colorado*

This research asks to which native group or groups can the Mantle's Cave artifacts be attributed. The most spectacular artifacts recovered incorporated feathers. Feathers have great symbolic significance to many modern native groups, and so may afford archaeologists an exceptional view into the past. Analysis of feather bundles and feathered artifacts from the cave should assist in determining ethnicity. Moreover, this inquiry will explore agency of feathers and the symbolism of birds and feathers for modern Puebloan and Great Basin groups.

Sorensen, Tim Flohr (University of Cambridge)

[226] *A Sort of Homecoming: On the Role of Returning in Secondary Burials*

The act of returning remains an understudied yet important part of secondary burials. In seeking to explore the role of returning, the paper focuses on the social movements that circumscribe ashes, bones, urns, funerary pyres, crematoria and burial places. It compares contemporary cremation and cremation in the Early Bronze Age of Denmark, addressing the social and emotional impact of going back to the cremated remains. It is argued that acts of returning revolve around parting with the dead in a physically recognizable form. The paper introduces the concept of vagueness as a subtext and objective of secondary burials.

Soto, Gabriella (University of Bristol)

[124] *The Undocumented Landscape: Transience and Subsistence at the Border*

Every year, thousands of undocumented immigrants enter the United States by crossing its southwestern land border. This region has become a "contested landscape," created by the transit of "anonymous" human beings, and the material traces of their clandestine and ephemeral presence. Backpacks, water bottles and clothing are the markers of what in effect is a horizontal stratigraphy of a contemporary archaeological record. An interdisciplinary approach to landscape formation in contested space is adopted here, and aims to investigate the social, economic, and emotional dimensions of such activities.

Southon, John [88] see *Culleton, Brendan J.*

Souza, Joanne [43] see *Bingham, Paul M.*

Speer, Charles (University of Texas at San Antonio)

[61] *Using LA-ICP-MS to Characterize Clovis Artifacts at the Gault Site*

This experiment uses Laser Ablation-ICP-MS to determine if Clovis artifacts at the Gault Site in Central Texas can be correlated with local Edwards chert outcrops. The geologic samples for this experiment came from three different locations within a kilometer of the site and all were in primary contexts. A 100 km distant primary chert source was used as a null hypothesis to test against. Debitage and blade fragments from controlled excavations were tested for elemental composition and the degree of similarity between the geologic samples. This project represents a first step in attempting to clarify sourcing issues with Edwards chert.

Speller, Camilla [178] see *Stevenson, Alexander E.*

Spenard, Jon (University of California, Riverside)

[157] *Pioneering the Underworld: Mary Pohl's Contributions to the Origins of a Self-Conscious Cave Discipline*

I address the profound affect that Mary the scholar and Mary the adviser has had on the rise of the self-conscious discipline of ancient Maya cave archaeology. I will address how her research in the early 1980s helped to emphasize the significance of caves to Maya research. Furthermore, I highlight Mary's continued contributions to the discipline in her role as adviser to several students who were among the first generation of professionally trained Maya cave archaeologists. The second half of this paper reviews their work and provides an outlook for

the field and offers suggestions for future research.

Spence, Michael (University of Western Ontario), Christine White (University of Western Ontario), Patricia Fournier (Escuela Nacional de Antropología e Historia) and Fred Longstaffe (University of Western Ontario)

[21] *The Chapantongo Site: Oxygen Isotope Analysis and Epiclassic Population Mobility in the Valley of Mezquital*

The Valley of Mezquital played an important role in mediating interaction and the movement of people between the Bajío and the Basin of Mexico in the Epiclassic and Postclassic periods. To examine the level of mobility in the region oxygen isotope analysis was conducted on 72 bone and dental samples, representing 39 individuals, from the Epiclassic period Chapantongo site. The results, which suggest considerable mobility, will be compared to data from other Epiclassic sites in the region.

Spence, Michael [16] see *White, Christine D.*

Spencer, Alan, Andrew Williamson (Natural Resources Conservation Service) and Grant Smith (Natural Resources Conservation Service)

[87] *Twin Peaks Springs: A Study in Process*

In August 2008, the Natural Resources Conservation Service embarked on an ambitious water pipeline project in the desert outside of Millard County, Utah. Over the course of three years, the NRCS worked with the Utah SHPO, the Bureau of Land Management, the Advisory Council for Historic Preservation, the State of Utah, various tribes, and the land owner to bring the much-needed water pipeline to reality. When completed, the project was a study of human adaptation in arid environments, a balance of public and private interests, and a study of conservation and historic preservation.

Spencer, Kaylee (University of Wisconsin - River Falls)

[102] *Locating Palenque's Portraits: Space, Spectatorship, and Identity in Classic Maya Art*

This study examines the portrayal of personal identity in relation to space within Classic Maya sculptural programs. Using the rich corpus of Classic-period portraits from Palenque, and nearby sites, I consider how relationships between viewers and subjects inform the messages encoded in ancient artifacts. I suggest, drawing from archaeological evidence, iconography, and new readings of hieroglyphic texts, that artists fashioned highly prescribed viewing contexts, which endowed artworks with greater significance and power than western models allow. I propose that (re)inserting viewers into pictorial programs encourages a richer understanding of Maya art and opens arenas to discuss emic notions of space.

[102] *First Chair*

Spencer, Susan [35] see *Alonzi, Elise E.*

Spengler, Robert (Washington University in St. Louis)

[54] *Paleoethnobotanical Studies in Eastern Kazakhstan: the Bronze and Iron Age Interface*

The cultural dynamics and economies that underpin the

development of Eurasian societies of the steppe are thought to have undergone significant changes at the start of the Iron Age (ca.800 B.C.). An increase in size and quantity of burial mounds and occupation sites are argued to be indicators of a transition. I discuss paleoethnobotanical data from the pivotal time period of the early Iron Age, looking at three archaeological sites in Semirech'ye, Kazakhstan (Tuzusai, Begash, and Mukri). While agricultural products were used in the region during the Middle Bronze Age, agriculture was not a major economic pursuit until the Iron Age.

Spengler, Robert [111] see *D'Alpoim Guedes, Jade*

Spielmann, Katherine (Arizona State University)

[53] *Forager-Farmer Interaction in North America*

The relationship between foragers and farmers is a complex topic in North American prehistory because there were no populations that relied solely on domesticated plants and animals for their subsistence. Documenting prehistoric forager-farmer interaction is also complicated by the archaeological invisibility of many of the trade items. The Plains-Pueblo interactive system, on which John Speth has worked, remains the best documented of all the prehistoric forager-farmer systems in North America. Using this example as well as the Crow-Hidatsa and Iroquois-Algonquian systems, this paper discusses two pathways to forager-farmer relations: farmers interacting with ethnically distinct hunter-gatherers, and farmers becoming foragers.

[118] *Discussant*

Spivak, Deborah (University of California, Santa Barbara)

[229] *The Visual Frontier of Huaca del Loro*

The ceramic style of Huaca del Loro developed on the south coast of Peru during the cultural contact between the highland Wari Empire and the coastal Nasca peoples between approximately 600 and 800 CE. These objects were part of a system of communication that established group identity during a time of political upheaval. Requiring literacy of several visual systems, the Huaca del Loro ceramics are, in themselves, a middle ground. This object centered study activates the borderland through agencies of trade and circumstance-driven visuality.

Spivey, S. (Washington University in St. Louis)

[240] *All Our Relations: Elucidating Social Networks through an Analysis of Lithic Trade Networks Associated with the Poverty Point Site*

A paucity of lithic resources near the Poverty Point site in Louisiana affords researchers a unique opportunity to analyze trade and social networks associated with the site. By analyzing the diachronic changes in lithic material networks as well as synchronic intra-site variability of lithic assemblages through GIS mapping technologies, a lithic raw material network map of the region surrounding Poverty Point is produced. These data are used as a proxy with which to track changes in population composition at Poverty Point in an attempt to elucidate social structures and social and/or demographic particularities.

Spivey, S. Margaret [166] see *Bolfig, Christopher B.*

Sponheimer, Matt [236] *see Glasgow, Hillary J.*

Springer, Chris (Simon Fraser University), Megan Caldwell (University of Alberta), Dana Lepofsky (Simon Fraser University), Sarah Johnson (Simon Fraser University) and Michelle Washington (Tla'amin First Nation)

[232] *The Built Environment of the Northern Coast Salish: An Archaeological View from Desolation Sound, British Columbia*

Although poorly understood archaeologically, ancient Northern Coast Salish settlement and interaction patterns are generally thought to reflect those known for the southern Gulf of Georgia. Considering human-built environment relationships, we link spatial analysis and resource procurement studies to insights gained from regional ethnographic sources and local Indigenous knowledge to examine connections between the constructed landscapes of the Northern Coast Salish. Our analyses allow us to infer settlement patterning and resource use over time and across space, revealing wider socioeconomic links but also highlighting the distinctive nature of Northern Coast Salish archaeological signatures.

Springer, Corinne (Utah Museum of Natural History) and Ann Kelsey (Utah Museum of Natural History)

[91] *Smoke Signals: Smoke Signals: The positive effects of fire on the germination and growth of Nicotiana attenuata (coyote tobacco).*

Nicotiana attenuata is a post fire annual whose use by indigenous populations is documented ethnographically. This study, prompted by a two-hundred acre wildfire shortly after the recovery of a prehistorically cached bundle of tobacco, tracks the sort-lived florescence of the species and its distribution and density in the burned area for three years. Sharp declines in germination after the first growing season illustrate the necessity of frequent fire episodes. Dense patches associated with prehistoric features and possible farm plots are indicative of active encouragement of the species and possibly cultivation during the Fremont Period.

Sprowles, Michael (Indiana University of Pennsylvania)

[65] *Magnetometry and Electrical Resistivity surveys of the Allegheny Portage Railroad*

Some of the more recent technological advances in archaeology may be employed to better understand the history of the Allegheny Portage Railroad. By examining the engine house at the head of plane 9 with a combined approach utilizing Magnetometry, Electrical Resistivity, and mild ground-truthing a clear picture of its unique shape, boundaries, and preservation can be obtained, while causing minimal impact to the archaeological record. In addition, usage of these two specific geophysical technologies will allow for comparison and assessment of general effectiveness in the soils of the Allegheny Mountains.

Spry-Marques, Victoria (University of Cambridge)

[205] *Zooarchaeology and Seasonality throughout the Late Upper Palaeolithic: The Case of Vela Spila (Croatia)*
Determining season of occupation at Late Upper Palaeolithic sites is key for understanding settlement patterns at times of fluctuating climatic and

environmental conditions. This deepens our knowledge of hunting strategies as it is a well-established fact that humans' movements were in sync with animal populations' migrations. The Epigravettian site of Vela Spila in southern Croatia is used as an example of how zooarchaeology has the potential to address questions on seasonality in an innovative way, and how this information can subsequently be used to understand when and where people were moving to (or not!) at different times of year.

Spurr, Kimberly (Museum of Northern Arizona) and Ted Neff (Museum of Northern Arizona)

[20] *The Big Picture: An Introduction to Recent Archaeological and Geomorphic Research along the Colorado River in the Grand Canyon*

This paper will present a brief overview of recent archaeological and geomorphic research along the Colorado River corridor in the Grand Canyon, undertaken for both compliance and research purposes, and will introduce the symposium papers. We will offer a spatial orientation for the investigated sites and a brief history of the projects. We will also describe chronology and archaeological background pertinent to the symposium. The presentation will conclude with an introduction of the symposium paper topics and their collective contribution to cultural resource management, substantive archaeological and geomorphic research, public education, and Native American perspectives on the Grand Canyon.

Stack, Margaret (University of South Florida)

[241] *An Archaeological Appraisal of 18th and 19th Century "Spanish Indians" on the West Coast of Florida*

"Spanish Indian" is a generic term that has been used repeatedly in written documents over the past three centuries to describe a range of different social, ethnic, and economic groups in the southeastern United States. In this paper, comparative analysis of the material culture from Cuban fishing ranchos of the 18th and 19th centuries on the west coast of Florida addresses the ways in which specific "Spanish Indian" collections fit into the archaeological record. The presentation also provides suggestions for how historical archaeologists might contend with difficulties in determining and documenting identity at early historical sites in coastal Florida.

Stafford, Thomas [262] *see Jenkins, Dennis L.*

Stahl, Ann (University of Victoria)

[198] *Surplus production in a time of slavery and political dislocation. A West African case study*

Questions around surplus production were entertained in earlier literatures on processes of state formation, but they have not figured prominently in recent investigations of West Africa's historical entanglements with the Atlantic world despite interest in how the slave trade reconfigured relations between societies of varying scale. To reengage questions of surplus, this paper asks questions about how the slave trade and attendant political dislocation affected surplus production. Drawing on comparative data from the last thousand years in the Banda area, Ghana, I explore continuity and change in surplus production in relation to historical shifts in the region's political economy.

Staller, John (The Field Museum)

[15] *San Catequilla de Pichincha: Lightning Huacas, Ancient Astronomy, and Inca Expansion*
The hilltop lightning huaca (Illapa ushnu) San Catequilla de Pichincha is at 0°00" South Latitude in northern highland Ecuador. Ethnohistoric information on the cultural and historical significance and the rituals and beliefs surrounding lightning veneration are presented. Natural features, mountains, natural springs, etc., designated as 'Catequilla' or 'Catequil' were considered huacas (sacred places) associated with lightning veneration during the Colonial Period. Lightning was worshiped from Quito to Cuzco. Huacas along the equator were important to astronomical calculation. Astronomical function is demonstrated from the geometry of remaining Inca platform foundations. Preliminary survey of indicates extensive Inca presence during the Contact Period.

Stanton, Travis (Universidad de las Américas Puebla)

[85] *Ceramic Ethnoanalysis at Yaxuná, Yucatán*
Using archaeological ceramics from Yaxuná, Yucatán this paper explores the use of petrography in conjunction with the direct participation of indigenous potters in the analysis of ceramic technology. This approach is termed ethnoanalysis to distinguish it from ethnoarchaeology where potters are observed producing modern ceramics instead of participating in the analysis of ancient ceramics.

Stapleton, Charles (Northern Illinois University) and Maria Stapleton (Northern Illinois University)

[170] *Burning for the Gods: Ceramic Incensarios/Braseros as Indicators of Cultural Continuity and Disjunction in Postclassic Central Mexico*
Remains of ceramic incense burners and braseros at the Postclassic Central Mexican site of Calixtlahuaca occur in diverse forms and decoration. Some exhibit characteristics that suggest ties with earlier (Teotihuacan; Tula) and contemporary (Aztec) central Mexican ceramic traditions, while others imply the dominance of local/vernacular tradition. Our paper presents a new form-based typology for this largely untapped subset of ritual ceramic vessels which holds the potential to detect technological and aesthetic affinities or differences between cultures. More importantly, this typology provides an indicator of the degree of continuity in regional ritual practice and associated ideological systems.

Stapleton, Maria [170] see Stapleton, Charles R.

Starkey, Anna (AECOM)

[256] *[From Bulbs to Bolas - Baked Clay in Prehistoric Sites along the Sacramento River]*
Previous investigations have treated clay as a common constituent in prehistoric sites along the Sacramento River; however recent analysis has found that a substantial amount of data has been overlooked. By examining plant impressions and various formed clay artifacts, the data extracted provides new insights into resource exploitation, seasonality, and technological development during the last 5000 years. While some attributes indicate that usage appears to have been continuous other attributes provide evidence that

identifies changes in targeted resources and technology.

Starn, Orin [77] see Riffe, Jed

Starr, Sandra (Smithsonian National Museum of the American Indian)

[260] *Tracking the Birdman from the Ancient Andes to Mississippian North America: A Study of Art Historic Evidence*
Scholarship attests to a legendary creator-benefactor deity who walked ancient lands and then flew away or walked away on the sea promising to return, whose visual description bears remarkable similarity within most Pre-Columbian cultures in Latin America. A photographic analysis of over one thousand objects in pursuit of tangible evidence of this deity shows direct relationships in iconography that speak of this personage whose beneficent remembrance adorns not only the art of the ancient Andes, Mesoamerica and Mexico, but that of Adena and Etowah, thereby extending art historic material evidence from southern South America into Mississippian North America.

Stawski, Christopher J. [38] see Hirshman, Amy J.

Steadman, Dawnie (Binghamton University, SUNY)

[217] *Discussant* **[198]** see Cobb, Charles R.

Steelandt, Stéphanie (Laval University), Bhiry Najat (Laval University) and Marguerie Dominique (Archeosciences laboratory, Rennes)

[25] *Environmental change and exploitation of wood resources by Paleo and Neo-Eskimos in Nunavik (Low-Arctic of Quebec, Canada).*
Many woods and charcoals have been found in archaeological sites in Nunavik (northern Quebec, Canada). In fact, wood resources have had a special importance in the daily life of Paleo and Neo-Eskimos populations (e.g. for houses construction and heating). This study concerns the regions of Ivujivik, Inukjuak and Umiujaq located on the east shore of the Hudson Bay, respectively in the grass, shrub and forest tundra. The aims of the study is to find out the origin of present and fossil woods (driftwoods or local woods) and to document their use and exploitation by humans through dendrochronology, anthracology, geochemistry and ethno-archaeology.

Steelandt, Stéphanie [159] see Gendron, Daniel

Steele, James (University College London)

[213] *Using radiocarbon data to explore population dynamics in prehistory: discussion paper*
As the volume of accurately and precisely radiocarbon-dated archaeological material from the late Pleistocene and early Holocene increases, so too does the scope and ambition of the research questions which such dates are being used to address. In this paper I will outline some studies of human population dynamics in prehistory which deploy radiocarbon databases covering similar time and space scales to that proposed for a South American database in our symposium, and will suggest some research topics which analysis of such a database could open up.
[213] *Second Organizer*

Steele, Julia (Petersburg National Battlefield)**[173]** *Resolution and Scale: The Archaeology of Military Sites*

Armed conflict occurs on many scales and the archaeological record reflects this continuum. Studies at different levels of resolution are appropriate to answer different questions about military and related sites. This paper will look at recent work at the American Revolutionary War encampment at Valley Forge, Pennsylvania, and at features that were part of the Petersburg campaign during the Civil War and examine how methods appropriate to the scale of the resource provide the richest data for analysis and resource management.

Steele, Teresa [12] *see Texier, Jean-Pierre***Steere, Benjamin (University of Georgia)****[164]** *House segmentation and household economy in the native Southeast*

To better understand how house form varies across space and time in the prehistoric and early historic Southeastern United States, I constructed a database cataloging the architectural features of over 1000 houses from over 60 sites throughout the region. A broad-scale comparison of the houses shows that interior space becomes more segmented or partitioned over time. The division of interior space is far more visible in Late Mississippian houses than in houses from earlier periods. There are many reasons for this pattern, but I argue that it is explained by important changes in the organization of domestic production and consumption.

Steeves, Paulette (Binghamton University)**[173]** *Pebbles In A Pond; American Archaeology Needs A Landslide*

Heritage studies and Cultural Resource Management (CRM) constitute approximately 80 % of North American archaeology fieldwork. The majority of archaeologists employed in American heritage and CRM positions earn their degrees at American universities in programs that provide inadequate training for these positions. A lack of required courses in ethics, American indigenous history/area studies, and CRM contributes to this crisis in training. These inadequacies in Anthropological degree programs whether intentional or unintentional constitute an ontological violence and a continued pedagogy of oppression. Al Dekin's emphasis on ethical training in heritage studies and CRM provide a model for others to follow.

Steffen, Anna [97] *see Rogers, Alexander K.***Stehman, Kelly (National Park Service) and Lisa Baldwin (National Park Service)****[248]** *Investigating the Historic Navajo Occupation of Wupatki National Monument*

Little is known about the historic Navajo occupation of the area that is now Wupatki National Monument. Until recently, the 1985 pedestrian survey of the monument provided the only information about historic Navajo sites in the monument. During the 2010 field season, Park Archaeologists undertook an intensive documentation and archival research project in an effort to more fully understand the historic component of Wupatki NM. This paper presents the results of this important first step in

documenting the historic Navajo occupation and use of the Wupatki Basin.

Steinbach, Penny**[102]** *Reconsidering the Jester God, Part II*

The Classic Maya Jester God has three distinct variants (avian, anthropomorphic, and piscine) indicative of three distinct realms (celestial, terrestrial, and aquatic, respectively), and when three Jester Gods are arranged triadically, the triad's arrangement mimics the spatial alignment of the corresponding realm(s). Nonetheless, most Jester Gods are blends of two or more variants—why? It is my contention that the Jester God embodies not only the axis mundi (Taube 1998) but also embodies—in the blending of its distinct variants—the unity of realms and the unification of multidirectional space that the axis mundi provides.

Steinberg, John [42] *see Schreiner, Amanda Marie***Steinbrenner, Larry (Red Deer College)****[183]** *The Pacific Nicaragua Potting Tradition, AD 800-1350*

More than eighty years after Lothrop's watershed Pottery of Costa Rica and Nicaragua, archaeologists working in Greater Nicoya continue to struggle with problems of ceramic taxonomy. Decades of research have led to the identification of a bewildering array of ceramic types, but little discussion of the interrelationships between these types. This paper argues that most of the Sapoa Period polychrome types previously identified in Pacific Nicaragua—including those usually treated as markers of different immigrant Mesoamerican groups—are more alike than unlike, and are best understood as the products of a common potting tradition with a Central American origin.

Stelle, Lenville (Parkland College) [60] *First Chair***Stemp, William (Keene State College) and Steven Chung (Worcester Polytechnic Institute)****[59]** *The Quantification of Use-wear on Obsidian: LSCM and Fractal Analysis*

Previous work by Evans and Donahue (2008) using a Laser Scanning Confocal Microscope (LSCM) successfully demonstrated the quantitative documentation and discrimination of surfaces on experimental flint flakes used on different contact materials. Our experiments follow in their footsteps by testing the reliability of LSCM to quantitatively document surface roughness on obsidian flakes and discriminate the surfaces of these flakes used on different materials based on their wear histories. The wear patterns on the obsidian flake surfaces were discriminated using area-scale fractal analysis and the F-test was applied to determine confidence levels for the discriminations.

[59] *Second Chair***Stemp, William [190]** *see Oland, Maxine H.***Stephen, David (Pima Community College)****[137]** *Lost and Found: Camp Wood at the turn of the 20th Century*

Camp Wood, named for a U.S. Cavalry officer who bivouacked troops there in the late 19th century, is located roughly 50 miles from Prescott, Arizona on the

eastern edge of the Santa Maria Mountains within the Prescott National Forest. On modern maps Camp Wood is a place name disassociated from its historical context. Field and archival research have revealed that the original Camp Wood was located 7 miles further east and during the late 19th and early 20th century was a hub for mining, ranching and tourism. This poster summarizes the early history of Camp Wood and its vicinity.

[137] *First Chair*

Stephen, David [137] *see Watkins, Timothy K.*

Stephenson, Keith (USC Institute of Archaeology and Anthropology) and Adam King (South Carolina Institute of Archaeology and Anthropology)

[164] *Coastal Plain Chiefdoms of the Middle Savannah River Valley: Labor, History, and Hierarchy*

Our research focusing on the political economy of mound centers in the middle Savannah River valley has prompted a reevaluation of current interpretations regarding societal complexity. We conclude the clearest expression of classic Mississippian riverine-adaptation is evident at mound centers immediately below the Fall Line with their political ties to Etowah. By contrast, those centers on the interior Coastal Plain were politically autonomous with minimal signatures in social ranking. The scale of appropriated labor and resulting level of surplus production, necessitated by settlement in the Aiken Plateau, fostered social contradictions making communally-oriented and decentralized societies more sustainable than hierarchical forms.

Stefonaitis, Vincas (UNC-Chapel Hill) [264]

Discussant [184] First Chair [184] Second Organizer

Sterling, Kathleen (Binghamton University) and Sebastien Lacombe (Binghamton University)

[153] *Mapping to See Beyond the Site*

So much of late Ice Age archaeology is focused on the scale of the individual site. Creating maps of individual sites is essential to analyzing those sites, but since we are investigating highly mobile people, we also need to create maps at broader scales to gain a fuller picture of Paleolithic life. We may not have the benefit of roads or other features of the built environment to aid us, but the creation of maps based on material culture and ideas is possible and can be a useful tool in our understanding of the individual site and of hunter-gatherer life.

Sterling, Kathleen [218] *see Lacombe, Sebastien*

Sterling, Sarah, Kristine M. Bovy (University of Rhode Island), Virginia Butler (Portland State University), Sarah K. Campbell (Western Washington University) and Mike Etnier (University of Washington)

[210] *Beyond The Palimpsest: Using High Resolution Excavation Techniques to Evaluate Household Scale Economic Strategies and Disaster Response on the Northwest Coast*

Differences in rank and economic specialization among precontact NW Coast households have been demonstrated using the spatial distribution of artifacts and subsistence resources within and between houses, but tracking the stability of social strategies for allocation of resources over time has proven difficult because of

palimpsest formation in long-lived house structures. High resolution excavation employed at Tse-whit-zen (45CA523) Washington state, isolated short-term cultural events (floor surface formation, construction and dumping events). Evidence for regionally-recognized seismic events over the past 2000 years was also found, allowing for review of changing social dynamics and resource allocation in response to extreme environmental change.

Stettler, Heather (SWCA) [215] *Discussant*

Stevens, Nathan (UC Davis)

[194] *The Middle to Late Holocene Transition in Central California*

To be presented in the session: Bioarchaeological and Archaeological Perspectives on Migration, Diet and Health in Prehistoric Central California [Richard Fitzgerald, organizer] The Middle/Late Holocene boundary in Central California can be thought of as the end of generalized, and often highly mobile lifeways and the beginning of more specialized and intensive California hunter-gatherer-fishers known from ethnographic times. The Marsh Creek Site (CA-CCO-548) spans this temporal boundary, and when compared to other regional assemblages, provides data important for understanding the character and motivations for these transitions.

Stevens, Stan [19] *see Venables, Barney J*

Stevens, Stanley (University of South Florida), Barney Venables (University of North Texas), Steve Wolverton (University of North Texas), Andrew Barker (University of North Texas) and Kent Seeley (University of South Florida)

[19] *Development of Mass Spectrometry-based Methods for Protein Residue Analysis*

Analysis of protein residue from archaeological materials has been limited by several factors including low protein extraction efficiency from the sample matrix as well as sensitivity of the downstream analytical detection method. Advances in mass spectrometry have facilitated protein identification and characterization from complex mixtures through improvements in detection specificity and sensitivity. We describe novel discovery-based and targeted methods including microwave-assisted enzymatic digestion followed by tandem mass spectrometry and multiple reaction monitoring (MRM) for the development of archaeological protein biomarkers using experimental cooking pottery for method validation.

[19] *Discussant*

Stevenson, Alexander (Portland State University), Virginia Butler (Portland State University), Dongya Yang (Simon Fraser University), Camilla Speller (Simon Fraser University) and Jessica Miller (Oregon State University)

[178] *Evaluating the native status of anadromous salmonids in the Upper Klamath Basin, Oregon using mtDNA and geochemical analyses of archaeological fish remains*

Dam removal and salmon restoration in the Upper Klamath Basin, southwestern Oregon, hinge on the native status of anadromous salmon runs in the area. Current policy decisions rely on limited historic and

ethnographic documentation. Faunal assemblages from six previously excavated archaeological sites in the region provide approximately 7200 identified specimens from suckers (Catostomidae), minnows (Cyprinidae), and salmon and trout (Salmonidae). Sr/Ca ratios, mtDNA, and traditional morphological analyses are used to establish the native status of anadromous salmonids in the region over the past ~7500 years. Implications to current debates regarding water rights and dam removal are considered.

Stinchcomb, Gary [111] see *Messner, Timothy C.*

Stiner, Mary (University of Arizona) and Natalie D. Munro (University of Connecticut-Storrs)

[126] *Site formation processes and economic intensification from the Upper Paleolithic through Mesolithic at Franchthi Cave, Greece*

We examine the complex interplay of site formation processes, climate-driven landscape change and human hunting systems during the Upper Paleolithic through Mesolithic at Franchthi Cave. There is clear evidence of diet expansion and resource intensification with time in response to declining supplies of high-yield terrestrial resources. Foraging patterns were exclusively terrestrial during the early occupations but the meat diet shifted to a mixed marine-terrestrial mode, and ultimately to technologically costly fishing activities by the Mesolithic. Variation in the intensity of the occupations in the cave is an important corollary to the results on increasing dietary breadth and is examined through (a) comparisons of the relative accumulation rates of sediments and cultural materials, and (b) trends in prey diversity as a function of the time intervals represented by the lithostratigraphic layers. The site formation data show that the intensity of occupations of the cave increased in tandem with intensified use of animal and plant resources.

Stirn, Matt (Davidson College)

[115] *Alpine Estates: A GIS Predictive Model in Wyoming's Wind River Range*

GIS computer modeling is an invaluable tool for visual and spatial analysis in archaeology. The recent discovery of six high-altitude villages and their noticeably similar microenvironments suggest potential site location patterning in Wyoming's high mountains. Through the GIS analysis of topographical, arboreal, and spatial variables accompanied by two ground-truthing field surveys, this project marks an attempt to determine the predictability of undiscovered prehistoric cut-and-fill lodge villages above 10,000 ft. in Wyoming's Wind River Range.

Stockdell, Eric [221] see *Ardren, Traci*

Stockton, Trent (Tulane University), Mandy Munro-Stasiuk (Kent State University), Kakoli Saha (Kent State University), Rebecca Hill (Tulane University) and T. Kam Manahan (Kent State University)

[85] *Quantifying Paste Variability in Late and Terminal Classic Slateware Pottery*

We investigate patterns of ceramic paste variability between Cehpech and Sotuta sphere Slateware pottery recovered from archaeological contexts in the Northern Maya Lowlands. True color and polarized images captured from a petrographic microscope are merged

and co-referenced. Mineralogical composition of individual grains, voids and inclusions are quantified using multispectral image classification software, and precise percentages of each class are calculated. Segmentation of the classified images produces polygons from which morphometrics can be extracted and used to characterize ceramics. Preliminary results suggest the method is faster, more accurate and more easily reproducible than standard petrographic point counting.

Stodder, Ann (Field Museum)

[143] *Context as Key for Understanding Mesa Verde Mortuary Data at Local and Regional Scales*

Mortuary data from Pueblo I sites in the Dolores and Animas-La Plata Project areas suggest that the structural and nonstructural contexts of burials are critical to understanding mortuary practice in this pivotal era and in earlier and later Ancestral Pueblo groups. Extramural interment contexts and their spatial relationships to houses, surface structures, and stockades are worthy of systematic study. Pithouse burials on floors and benches, in ventilators and in fill, vary in temporal relation to structure and site abandonment. House burials in particular suggest a fruitful area of comparison with other SW groups and an important category for metadata development.

[237] see *Osterholtz, Anna J.*

Stoellner, Thomas [267] see *Reindel, Markus*

Stojanowski, Christopher M. [133] see *Sereno, Paul C*

Stokeld, Rachel (University of Idaho)

[175] *Chinese Ceramics of a Frontier Economy*

Ceramics of Chinese manufacture are well represented in the archaeological assemblages of frontier economy sites dating to the mid to late 19th century in Western North America. Although much site specific analysis of such ceramics has been completed, little comparative analysis data exists. In this paper I will attempt to synthesize the data on Chinese manufactured ceramics to explore diachronic changes within these frontier communities.

Stokes, Robert (Archaeological Consulting Services), Teresa Pinter (Archaeological Consulting Services, Ltd.), Margerie Green (Archaeological Consulting Services) and Susan Shaffer Nahmias (Independent Education Consultant)

[83] *U.S. Bureau of Reclamation's Long-Term Section 106 and 110 Survey and Public Outreach Efforts at Lake Pleasant Regional Park near Phoenix, Arizona: 26 Years of Research by Archaeological Consulting Services, Ltd.*

Reclamation and ACS have collaborated on various projects over a 26 year period at Central Arizona Project's storage basin at Lake Pleasant, beginning with Section 106 survey for the new Waddell Dam, followed by Section 110 surveys of the lake basin and creation of a cultural resources management plan. Recently, we have worked together on redesigning the Lake Pleasant Visitor Center and conducting excavations at a rockshelter in a remote part of the park slated for increased visitation. As a result of these long-term investigation and research efforts, Reclamation has obtained a large-scale database and cultural/historical

overview of the park.

Stokes, Robert [83] *see Green, Margerie*

Stoll, Anne [151] *see Douglass, John G.*

Stoll, Marijke (University of Arizona) and Dante García Ríos (Zone Arqueologica de Monte Alban)

[182] *Empty Space, Active Place: Examining the Relationship Between Ball Courts and Plazas in Prehispanic Oaxaca*

Plazas and ball courts were focal points of public life for prehispanic Oaxacan communities. Survey data from the Central Valley and Mixteca regions of Oaxaca reveal that the construction and location of ball courts with respect to plazas changed over time from the Late Formative to the Postclassic eras. Based on this data, we suggest that the communal role of ball courts in Oaxacan political relationships shifted as well. Using GIS analysis, we examine how the social meaning of both ceremonial spaces may have changed through time and under different political regimes.

[127] *First Moderator*

Stoll, Marijke [237] *see Fields, Misty*

Stone, Andrea [60] *see Griffith, Cameron S.*

Stone, Elizabeth

[10] *Methods for recovering mud-brick architectural patterns from sub-meter satellite imagery: A case study from Iraq*

Today, high resolution satellite imagery makes possible the mapping of architectural patterns of entire Mesopotamian cities, towns and villages. These traces are only visible under conditions of high ground water resulting from irrigation or rainfall. This paper describes methods using medium resolution Modis imagery to determine both when and where it rained in Iraq over the past decade, and which areas were irrigated when, information which allows the selection for purchase of imagery most likely to preserve such traces. These methods should pertain to other arid areas with mud architecture, such as Egypt, the Indus, and the American Southwest.

Stone, Lester [161] *see McMahon, Catherine*

Stone, Pamela (Hampshire College)

[237] *Contextualizing Death and Trauma at Canyon de Muerto*

This poster explores how human taphonomy offers insight to understanding the structural violence that impacted the discovery, recovery, and analysis of human remains from sites within Canyon del Muerto, (400-1300AD). Also included in this analysis is a discussion of the temporal relationship of these sites juxtaposed with the rise and fall of the Mesa Verde and Chaco Canyon complexes focusing on the role of interpersonal violence, discussed through the analysis of death-related forces. These ideas are then presented within an examination of indirect forms of structural violence, which often mitigated the physical violence endured by this population.

Stone, Suzanne (HDR/e2M) and Judy Berryman (HDR/e2M)

[115] *The Las Flores Estancia (CA-SDI-812/H)- GPR Mapping, Site Definition and Lost Features*

The NRHP-listed Las Flores Estancia is on MCB, Camp Pendleton, Southern California. It is a Mission Period adobe compound (1820s-1860s) and is part of a larger complex containing an adobe ranch house and prehistoric loci. The Estancia's precise dimensions remain uncertain, given the lack of archival data and absence of clearly visible corners. Geophysical studies were conducted in 2003 to delineate the major structural components. The 2010 investigation addressed questions generated by the 2003 study. This included GPR, ground truthing, interviews, and a review of historic photos. This paper discusses new information regarding the building configuration and associated features.

Stone, Tammy (University of Colorado Denver)

[201] *An Architectural Biography of Point of Pines Pueblo*

Large communities in middle-range societies are dynamic entities in which the tensions between sub-group formation and village integration are played out daily through shifting political and social alliances through the creation and redefinition of history. Architecture, as a metaphor for social constructs in which individuals and groups live their everyday lives, can be used to interpret these social actions through the construction of a "biography" of architectural change. The theoretical underpinnings and associated methodology are presented and illustrated with data from Point of Pines Pueblo, a multi-ethnic pueblo in Central Arizona.

Stoner, Ed [61] *see Cunnar, Geoffrey E.* **[262]** *see Estes, Mark B.*

Stoner, Edward (Western Cultural Resource Management, Inc.) and Geoffrey Cunnar (Western Cultural Resource Management, Inc. (WCRM))

[262] *Fire Creek: A New Look at Old Dirt on Alluvial Fans in the Central Great Basin*

In 2010 WCRM conducted data recovery investigations on the Fire Creek National Register Archaeological District located in the Central Great Basin. Locus A/R, a single-component Western Stemmed Tradition site within the district, is located on a late Pleistocene alluvial fan and contains evidence of several distinct and astonishingly complete lithic reduction trajectories involving a locally available high quality basalt. General site context including discussions of lithic terrane, buried soils, and initial findings are reported for this significant Paleoamerican site which may in the future help provide answers to unresolved questions regarding the earliest peopling of the Great Basin.

Storey, Rebecca (University of Houston)

[56] *Gender, Status, and Sex in the Rural Maya Burials of Late Classic, Copan*

Classic Maya skeletal samples are dominated by elite and central residences. Nineteen females and sixteen males were recovered from modest residences in Copan's hinterland. The usual male advantage in mortuary treatment found among many Pre-Columbian Maya is not present in the rural mortuary pattern. Females have some of the most elaborate treatments, although no individual in this sample had more than four grave furnishings (this was a female). The context and grave characteristics of some female inhumations

suggest that hypogamy from higher status families might account for these patterns. The purpose was probably similar to elite practice, to foster alliances.

[237] see Carroll, Rebecca L.

Stosel, Victoria (University of Alaska, Fairbanks)

[240] *An Examination of Alaskan Shell Beads*

This paper reports on an analysis of the University of Alaska's Museum of the North's shell bead collection that focuses on determining the species utilized and characterizing manufacturing styles. While articles have discussed shell beads recovered from sites across Alaska, the discussions are often brief and lacking in detail. Information on species is vital to determine the raw materials available to Alaskan indigenous populations and their potential point of origin. Manufacturing styles are critical to assessing technical skill. Once completed this project should provide a comparative collection for researchers in both Asia and North America.

Stothert, Karen (Center for Archaeological Research-UTSA)

[15] *The Manteno-Guancavilca Accommodate the Inka State*

Recent excavations in sites occupied by Pacheco and Guancavilcas (whose archaeological remains are classified as Manteno-Guancavilca) have stimulated this interpretation of the relationship between the imperialist Inka State and the autonomous, late prehistoric ethnic groups of the coast of today's Ecuador. Evidence related to technologies of power (architecture, ceramics and metals) suggests how State agents extended symbolic hegemony over the culturally integrated but politically decentralized peoples of the equatorial coast.

Stottman, M. (Kentucky Archaeological Survey)

[197] *A Slow and Moving Target: The Reality of a Practice of an Activist Archaeology*

While the value of an activist archaeology has been widely discussed amongst archaeologists over the last several years, the realities of the practice of such an endeavor have not. In this paper I will propose a strategy for the practice of an activist archaeology and examine the reality of being an activist archaeologist. I will draw from my experience of conducting archaeological projects within an activist framework over the last ten years. Through this experience, I will examine the ethical and practical concerns of using archaeology to advocate for communities.

Stotts, Rhian (Arizona State University)

[164] *Storage Behavior in the Mediterranean: An Ethnoarchaeological Approach*

This study reviews ethnographically recorded storage practices in the Mediterranean in order to develop archaeological expectations for storage behavior. The region is constrained by the environment, which influences subsistence and storage practices. Research suggests that rather than look for large-scale storage facilities, archaeologists should examine changes in domestic storage, particularly at small-scale agricultural centers. Elites' ability to extract surplus in early complex societies was contingent on increased yield by producers and may be seen in increased storage capacity at the domestic level. This paper suggests ways archaeologists

can document resistance to elite control of agricultural surplus.

[164] *First Chair*

Stovel, Emily (IIAM-UCN and Ripon College)

[228] *pXRF on the South-Central Andean Ceramic Collections at the Field Museum in Chicago*

This paper outlines the preliminary results of portable X-Ray Fluorescence analysis on the South-Central Andean ceramic collection at the Field Museum of Natural History in Chicago. During the research period, just under 700 vessels from three countries were photographed and analysed. Initial results provide a series of caveats concerning archaeometric analysis including reflections on sample size, the origins of elemental variation, and regional applications of these methods. Future avenues of research and the potential for using the pXRF method for the definition of ceramic types and regional cultural models are evaluated.

Stratton, Susan (CA Office of Historic Preservation)

[172] *Remediating Toxic Behaviors*

Can we really change an all too pervasive behavior of federal agencies and others who are continually out of compliance with the National Historic Preservation Act? The setting for this presentation is the EPA's cleanup of the Sulfur Bank Mine at the Elem Indian Colony near Clear Lake, California. This paper explores the toxic behavior of one federal agency and the steps taken in consultation with the State Historic Preservation Officer for not only the remediation of the mercury and arsenic contaminants in the soil and groundwater, but also for the remediation, and future prevention, of its toxic behaviors.

[112] *First Chair* [166] see Dutschke, Dwight A.

Strawhacker, Colleen (Arizona State University)

[223] *Prehispanic Irrigated Agricultural Soils on the North Coast of Peru: Understanding the Effects of Long-Term Irrigation*

Little is known about the effects of long-term irrigation on agricultural soils, especially in archaeological contexts. The Pampa de Chaparri on the north coast of Peru is home to well-preserved prehispanic irrigated fields. These field systems provide an excellent opportunity to study the effects that long-term irrigation had on the soils during their use from AD 900 until Contact in AD 1532. This paper will present results from extensive sampling of agricultural soils on the Pampa and will address how long-term irrigation affects soil quality. Interpretations from this research will also address possible contemporary applications to irrigated systems used today.

[223] *First Chair* [223] *Second Organizer*

Strickland, Glenn [81] see RabbySmith, Steve L.

Striker, Sarah (Arizona State University)

[208] *Archaeological Approaches to Identifying Captivity in Iroquoian Communities*

During the seventeenth century, latent tensions between Native communities in the Northeast were exacerbated by the arrival of European groups contributing to extensive regional warfare. Throughout this period, many Iroquoian and non-Iroquoian peoples were brought into Iroquoian communities as captives, adoptees, refugees, and slaves. Utilizing captivity narratives, historical

accounts, and archaeological data, this study outlines some archaeological correlates of captivity, slavery, and adoption in Five Nations Iroquois communities. This work will provide an important framework for understanding the roles of these newcomers in the archaeological record, as well as contribute to the growing literature on archaeological approaches to captivity.

Striplen, Chuck (UC Berkeley/San Francisco Estuary Institute)

[222] *Fire and landscape change in Central Coastal California*

This research contributes to a number of gaps in knowledge pertaining to the nature and extent of pre-colonial, indigenous resource management in the Central Coastal region of California (USA). This paper summarizes progress on analyses of fire history and historical ecology data gathered in and around the newly created Quiroste Valley State Cultural Preserve, a first contact village site roughly 50 miles south of San Francisco, CA. We also contextualize the overall research effort in the landscape of publicly owned open space management, Indian policy, and interdisciplinary research.

[222] *Second Organizer*

Stroulia, Anna (University of Southern Indiana)

[164] *Unusual Disposal of Ground Stone Tools: The Case of Kremasti, Greece*

Subsurface pits have traditionally been assigned mundane functions like storage or garbage disposal. Studies in the last fifteen years, however, suggest that some pits in prehistoric Europe were dug and used for extra-utilitarian purposes. This seems to be the case with 462 pits excavated at the Neolithic site of Kremasti, northern Greece. These pits contain ca. 2500 fragmentary and intact ground stone tools along with sherds and complete pots, disarticulated animal/human bones as well as complete skeletons, building material, lithics, ornaments, and figurines. The paper discusses the different kinds of ground stone tools and the conditions of their disposal.

Strout, Nathan [139] *see Bernardini, Wesley*

Strudwick, Ivan (LSA Associates, Inc.)

[123] *Pimu, the Final Chapter: Historic Accounts concerning the Native Depopulation of Santa Catalina Island, California*

Human occupation of the California Channel islands has been proven by radiocarbon dating to exceed 10,000 years; on Santa Catalina island it exceeds 7,000 years. The native population of the Channel Islands rapidly declined after European occupation of California in 1769. Although the removal of the last natives is well-documented from San Nicolas Island, it is far less well-known for Catalina where recent research estimates a population of 3,000 was likely. Information documenting the final decline and ultimate fate of the native Santa Catalina Island population is presented.

Stueber, Daniel (Archaeological Investigations Northwest)

[160] *Glass Buttes Oregon: 14,000 Years of Continual Use*

Late Pleistocene Clovis flintknappers to present day

flintknappers have used Glass Buttes, one of the largest obsidian sources in Oregon, for toolstone procurement. This paper will discuss the nature, quality, and quantity of obsidian toolstone available at Glass Buttes, uses of this resource through time, archaeological work that has been done there, impact of the modern flintknappers, and the current Bureau of Land Management plan for allowing and controlling modern procurement of obsidian at Glass Buttes.

Sturm, Jennie (TAG Research) and Michele Koons (Harvard University)

[163] *Ground-Penetrating Radar Investigations at Licapa II, Peru*

In June 2010, ground-penetrating radar (GPR) surveys were conducted at the Moche center of Licapa II in the Chicama Valley, Peru, to test the hypothesis that domestic structures existed near the monumental center. Surface artifact scatters suggested there were structures in this area, though their spatial extent, orientation, and depths were unknown. Because of the three-dimensional mapping capabilities of the GPR method, all of these traits were identifiable through careful data processing and analysis. The information from these GPR maps has been used to study and understand the overall layout and composition of this site.

Stutz, Aaron (Oxford College of Emory University) and Jamie Clark (Southern Methodist University)

[17] *Continuity Through Transitions: A Biocultural Evolutionary Perspective on Population Dynamics and Technological Change in the Upper Pleistocene*

The notion of paleoanthropological "transition" often emphasizes punctuated social, technological, or demographic change. However, many late Middle and Upper Pleistocene transitions are most clearly defined by rapid regional changes in lithic technology, while associated animal exploitation and mobility strategies may shift more gradually. This type of trend highlights the mosaic nature of biocultural change during this period. Using two transitions (the southern Levantine MP-UP and the southern African Howieson's Poort-MSA) as a key comparison, we explore the multidimensional nature of long-term change during the Upper Pleistocene, suggesting that aspects of continuity must be considered when explaining biocultural evolutionary trends.

Stvan, Jeffrey (University of Chicago)

[174] *Building on Tradition: The Transmission of Architectural Knowledge Among the Late Moche*

Although data illuminating construction and remodeling processes - and the technical choices they entail - are typically recovered when excavating pre-Columbian architectural remains on the Peruvian North Coast, the potential of these data to inform a more sophisticated conception of architecture as practice and to facilitate an understanding of how architectural knowledge was communicated, has largely been unrealized. Using data drawn from a selection of Late Moche Period sites, this paper will begin to identify and evaluate the modes by which architectural knowledge - both morphological and technical - was transmitted between individuals, as well as across time and space.

[174] *First Chair*

Suasnavar, Jose and Arthur Demarest (Vanderbilt)

University)

[191] *Variability in the Violent Destruction of the Pasion Valley Cities and Cancuen: Implications for the Early Collapse of the West*

The cities of the Pasion trade route had the earliest and most violent collapses beginning before A.D. 740. Dos Pilas, Aguateca, other cities, hilltop fortresses, and even small villages were completely destroyed with minimal or no evidence of ritual. In contrast, the international port center of Cancuen, strategic head of navigation for the entire system, was completely "ritually terminated" with great care and respect including the mass execution of its royalty and nobles. Here we discuss the nature and possible reasons for variability in the violent demise of the western cities and implications for theories of the Classic Maya collapse.

Sublett, Jan [113] see *Merriot, Ivy*

Sugiura, Yoko (Instituto De Investigaciones Antropologicas, UNAM)

[21] *In search of genetic identity of the human group in the Upper Lerma wetland, Central Mexico*

At around 500AD, a considerable area of the wetland known as Chignahuapan, Central Mexico, was transformed into habitable space. In this paper, we discuss on the people who colonized it from genetic point of view.

Sulkosky, Rita [80] see *Natoli, Amelia M.*

Sullivan, Alan (University of Cincinnati), Christopher Roos (Southern Methodist University) and Philip Mink (University of Kentucky)

[199] *The Archaeology of Subsistence Agriculture in Coniferous Ecosystems*

Premised largely on pueblo ethnography or archaeological investigations of large agriculturally-dependent communities, inferences concerning the nature of ancient agricultural production in the vast coniferous hinterlands of the upland American Southwest are, at best, weakly confirmed. To understand this problematic situation, we first examine various lines of evidence – assemblages, features, and terrain transformations – upon which these conventional models of maize agriculture and their effects are based. Then, to remedy the situation, we present archaeological and paleoecological data from the Grand Canyon region to illustrate that a rejection of the "Corn Paradigm" as an explanatory framework unconstrains consideration of alternative paleoeconomic models and their socio-ecological consequences.

[20] *Discussant*

Sullivan, Elaine (UCLA)

[146] *3D modeling and the 4th dimension:*

Reconstructing place through time at Egyptian cult sites
In multi-layered archaeological sites, the earliest forms of the built landscape are often obscured by later structures, making investigation and presentation of these areas via traditional maps and plans inadequate. UCLA archaeologists have developed projects utilizing GIS and 3D modeling to represent multiple phases of past cultural landscapes. The "Digital Karnak Project" shows how the visualization of complex data, including factors of time and volume, can be displayed and

analyzed successfully using Virtual Reality modeling. In "3D Saqqara," we reconstruct the ancient landscape of Egypt's famous burial ground to investigate inter-visibility between the necropolis and the neighboring city of Memphis.

Sullivan, Lynne (University of Tennessee) and Bobby Braly (University of Tennessee)

[82] *Correspondence among Colleagues: WPA Archaeology in Letters*

The New Deal-era collections at the Frank H. McClung Museum are among the largest of their kind. Many scholars use the artifacts and field records, but few know about the related, large correspondence archive. These letters, exchanged between University of Tennessee staff and many other anthropologists, illustrate the close personal and professional connections of the still-young discipline. The letters discuss topics such as archaeological field and laboratory techniques, interpretations, staffing, and government relations. This correspondence, now available in digital format, provides insights to the personalities and ideas that shaped and continue to influence archaeology in the United States.

Sullivan, Michael [139] see *Herr, Sarah A.*

Sunseri, Jun (University of California)

[153] *Cartographies of the State: Landscape archaeology of a colonial frontier*

Archaeologists create maps while trying to interpret the spatial record of human behavior. However, in tacking back and forth between our contemporary geospatial standards, analytical practices, and paradigms, we may well be propagating discords which distance us from not only the understandings of cultural landscapes we wish to investigate, but also the descendant communities to whom we must answer. From the Spanish colonial endeavor to create a strategic frontier in an Indian landscape, to the repetitive transformations of Mexican then American land tenure, the historic site of Casitas Viejas has long been a locus of cartographic contestation.

Supak, Karen (BHE Environmental, Inc.)

[224] *Technological Stasis through Social Change: Understanding Motivations for Lithic Procurement Behavior at Clarksville Base, Ft. Campbell, Kentucky*

This paper examines behavioral implications of the prehistoric use of several lithic procurement areas within the former Clarksville Base facility at Fort Campbell, Kentucky. Patterns of raw material exploitation along Little West Fork Creek indicate that methods for and products of chert procurement have remained remarkably static over time, despite corresponding differences in prehistoric settlement patterning, social complexity, and relative group mobility. Results indicate that a number of motivating factors influenced prehistoric lithic exploitation in the Fort Campbell region, including chert quality, distance from the source, regional variation in lithic types, and ease of raw material procurement.

Supernant, Kisha (University of Alberta)

[232] *To Defend or not to Defend?: An evaluation of the defensibility of rock feature sites in the Lower Fraser River Canyon, BC*

A recent concern in the Salish Sea is the impact that

warfare and conflict had on defining and transforming pre-contact community identities. Defensive sites are a principal indicator of the presence of warfare in the past and have been used to argue for the presence of intra-village community organization and co-ordination. In this paper, I use the results of two quantitative analyses of the defensibility rock features in the Lower Fraser River Canyon to evaluate whether the construction of these features required community co-ordination and suggest that we need to examine the defensibility of the entire landscape, not just sites.

[232] *First Chair* [232] *Second Organizer*

Surette, Flannery (University of Western Ontario, London)

[49] *On Convents and Acllawasis—Spanish Analogies and the Policies of Imperial Assimilation*

Beginning in 1534, the Spanish recorded descriptions of the houses (acllawasi) of chosen woman (the acllacona) through which the Inca incorporated the daughters of conquered peoples into the empire. These houses were often described as analogous to Spanish Roman Catholic convents which were used to acculturate the daughters of Andean indigenous elite. I argue that the analogy between acllawasi and convento is not mere bias but indicative of an example of the policies of assimilation under Inca rule as seen through a Spanish lens who also actively employed similar tactics in their own consolidation of power.

Surovell, Todd [155] see Prasciunas, Mary M. [57] see Waguespack, Nicole M.

Surprenant, Ann, and Brian Robinson (University of Maine)

[265] *Intertidal Archaeology and Good Preservation: Low Tech Methods at the Seabrook Marsh Site, New Hampshire*

The Seabrook Marsh site is an estuarine intertidal site excavated in 1975. It was discovered by an avocational archaeologist and excavated through the University of New Hampshire with low-technology methods. Thirty years later it remains a unique window on coastal occupations of 4,000 years ago for the southern Gulf of Maine. A terrestrial occupation site was encroached upon by rising sea level in a low energy environment, preserved below salt marsh, and defended by bedrock outcrops. It has excellent preservation of bone and soils. The potential is high for both submerged terrestrial and primary wet sites at much greater depths.

Sutter, Richard (Indiana University-Purdue University Fort Wayne)

[233] *Dentally Derived Phenetic Relatedness Among the Moche (AD 200 – 750) of the North Coast of Perú: A Comparison of the Skeletal Populations from San José de Moro to those from the Moche Valley*

Biodistance comparisons of Middle (AD 500 – 650), Late (AD 650 – 750), and Transitional (AD 750 – 800) period skeletal samples from San José de Moro to both a previously reported Middle period sample from the nearby Lambayeque Valley site Pacatnamú and eight contemporaneous samples from the Moche Valley suggests that increased gene flow occurred from the southern Moche region into the Jequetepeque Valley during the collapse of the southern Moche polity. The

broader implications of these results for our understanding of the collapse of the Moche are discussed.

Sutton, Wendy [211] see Hegberg, Erin N.

Swanton, Kristin (Indiana University of Pennsylvania) [154] *Public Archaeology and Landowner Support at the Battle of Mystic Fort*

Recent archaeological projects have shown that extensive public outreach and transparency in research questions and methods can create meaningful relationships between landowners and archaeologists. A case study to illustrate this relationship takes place at the Battle of Mystic Fort, a privately owned Pequot War battlefield site in southeastern Connecticut. Despite contemporary conflicts in the region, researchers from the Mashantucket Pequot Museum and Research Center were able to gain support from landowners to conduct fieldwork at the site. This paper will address some of these conflicts and how archaeologists were able to address landowner concerns and meet their research objectives.

Swartz Dodd, Lynn [220] see Friedman, Elizabeth S.

Sweeney, Alex (Brockington & Associates) and John O'Donnell (Brockington and Associates)

[81] *Settlement along the Savannah: Section 110 Survey for the Savannah District, USACE*

In 2010, Brockington and Associates conducted cultural resources survey through the American Recovery and Reinvestment Act program for the U.S. Army Corps of Engineers, Savannah District on several tracts of federal lands around Lake Hartwell and the Richard B. Russell Reservoir. Previous investigations prior to the construction of hydroelectric dams near these areas identified hundreds of prehistoric and historic sites, and our field investigation also identified numerous sites around each area. Large-scale examination of these sites allows observations of patterns and changes in settlement distribution over time in the region, and illuminates variables that contributed to site locations.

Swenson, Edward (University of Toronto)

[125] *The Search for Moche Thirdspace: The Politics of Place-Making in Andean Prehistory*

Dr. Mackey has made important contributions deciphering the political significance of built environments in the Andes, contending that Chimú monuments represented more than the symbolic by-product of sociopolitical forces. Instead, power was directly negotiated through the design, construction, and experience of authoritative architecture. Building on these insights, I explore Moche representations of space, arguing that conscious projects of place-making played a critical role in the formation of Moche political subjectivity. Ultimately, an examination of contradictions in the conceived, perceived, and lived dimensions of Jequetepeque ceremonial architecture permits an appreciation of the cultural particulars of Moche identity politics and ideological struggles.

Swygert, Amelia (Howard University)

[138] *The Configuration and Use of Structures at Fort Ojo Caliente*

In 2009-2010 the Gila Archaeological Project conducted limited exploration of Ojo Caliente, a fort used during the Apache Wars of the late 1800s. Investigations included ground-penetrating radar (GPR) and walkover surveys, and partial mapping of the adobe structures. This poster will analyze the information gathered, supplementing it with archival research, in order to better understand the fort's layout and the military's use of built and open space in fortifications. Of particular interest is predicting where an unmarked cemetery could fit into the fort's configuration, as its location has never been pinpointed, and suggesting areas for future GPR and surface survey.

Sykes, Becky (Phillips Academy) and Margaret Conkey (University of California Berkley)

[196] *Integrating Archaeology into a High School curriculum: the Andover Example*

In this paper we discuss the history of how Phillips Academy (Andover) and the R.S. Peabody Museum have worked together over the past seven years to create a model program for the integration of a museum and its resources into a high school curriculum. The presentation include an examination of the critical administrative decisions that initiated the process and how program growth was managed, as well as how the Peabody Museum example can inform other institutions seeking to expand educational outreach.

Sykes, Becky [196] see Doheny, Marcelle A

Szczepanowska, Hanna (Smithsonian Institution, Museum Conservation Center) and Thomas Mathia (Thomas G. Senior Scientist, Center National de la Recherche Scientifique, (CNRS) Laboratoire de Tribologie et Dynamique des Systems, LTDS, Lyon, Fra)

[242] *Space Heritage, model of transmitting aerospace technology concepts to the public; a case study, Apollo heat shield.*

The authors merge engineering and scientific knowledge with humanistic studies of complex aerospace technology to develop a model of transmitting technical concepts to the public. This model is focused on human interaction with the environment of which space exploration is one aspect. The Apollo Program and atmospheric reentry technology serve as an example of how a complex aerospace technology can be transmitted to the public in a succinct manner. The space heritage collection at the National Air and Space Museum supplied specimens of heat shield from the Apollo Program testing vehicles AS 201 and AS 202 for this study.

Szirmay, Jenica (California State University, Stanislaus), Lauren Hall (California State University, Stanislaus), Jasmin Valenzuela (California State University, Stanislaus) and Cassandra R. Bill (M.A.R.I. / Tulane University)

[31] *This Old Thing?: The Use of Elite Material Culture in Strategies of Affiliation and Domination at Los Naranjitos, El Paraíso Valley, Western Honduras*

Portable objects can forge powerful ties among social actors, and are often employed to create and communicate identities, status, wealth, and affiliations. Portable material culture, particularly pottery, appears to have been used extensively in the creation and

communication of political affiliations within the elite residential group of Los Naranjitos, adjacent to the autochthonous Classic period center of El Cafetal, in the El Paraíso Valley, western Honduras. In this poster we examine the roles of both elite Copan pottery and locally manufactured wares in negotiations of power, wealth, and prestige on the edge of the Copan kingdom.

Szpak, Paul (University of Western Ontario), Jean-Francois Millaire (University of Western Ontario), Fred Longstaffe (University of Western Ontario) and Christine White (University of Western Ontario)

[35] *Effects of Seabird Guano Fertilization on the Stable Isotope Composition and Growth of Maize (Zea mays): Results from a Controlled Study*

Seabird guano from the arid western coast of South America was one of the most widely used fertilizers in the nineteenth century, although its importance in prehispanic agricultural systems has been difficult to determine. This paper presents data from a controlled study of maize fertilized with Peruvian seabird guano, outlining the effects of different fertilization regimes on maize growth and isotopic composition (d13C and d15N). We discuss the implications of this study for the identification of guano fertilization through isotopic analysis of archaeological materials.

Tabares, A. Natasha [230] see Walsh, Michael R.

Tabor, Neil [3] see Loewen, Natalia

Tackett, Stephanie (Pima Community College) and Ashley D'Elia (Pima Community College)

[137] *Distribution of groundstone in relationship to the topography and vegetation of the Burro Creek/Pine Creek Archaeological Survey area*

The Burro Creek/Pine Creek Archaeological Survey area is best described as pinon-juniper woodlands. Colorado Pinon (*Pinus edulis*) is a common species there and is an important resource in the subsistence strategies of indigenous cultures due to the high nutritional value of its pine nuts. This poster describes the presence and absence of pinon as it relates to groundstone artifacts found at different sites within the survey area. It interprets geographic data regarding elevation, north vs. south facing slopes, water sources and precipitation necessary for pinon production and discusses site distribution and possible locations of processing stations based on artifact volume.

Tafilica, Zamir [27] see Galaty, Michael L.

Tafari, Maryanne [237] see Robb, John E.

Takamiya, Hiroto (Sapporo University)

[149] *The Evolution of Complex Societies on the Islands of Okinawa, Japan*

Prehistory of Okinawa exhibits several unique cultural phenomena in the context of island archaeology. One of these is that the archipelago witnessed the evolution of social organizations from a band to the state, known as the Ryukyu Kingdom. I will review the evolution of social organizations in Okinawa. In this case, available natural resources did not allow the evolution of chiefdoms. It was agriculture, which was introduced ca.11th century AD, that enabled the evolution of chiefdoms. Furthermore, the