

faunal prey species were included or excluded from the diet and at what relative proportions as a consequence of human population changes. This technique produced hypotheses to test using the subsistence faunal record from excavated archaeological sites in Wyoming. Although these results are particular to the prey species and demography of Wyoming, the principles are broadly applicable.

Mulligan, Connie [182] see *Kimura, Birgitta K.*

Muniz, Mark (St. Cloud State University) and Steven Holen (Denver Museum of Nature & Science)

[210] *The CW Cache: Can Production Strategies Identify Clovis Flintknappers?*

This paper examines a cache of artifacts from northeastern Colorado. Although no projectile points were included, the geomorphic setting and the condition of the bifaces indicates considerable antiquity. Metric dimensions of the bifaces and the production strategy used to make them is very similar to that documented at Clovis sites throughout the West. However, large, well-made bifaces have also been recovered from Woodland sites in the Midwest and Late Prehistoric sites on the Great Plains. This paper compares the CW cache to both Clovis and Late Prehistoric biface caches in order to determine a prehistoric cultural affiliation.

Muñiz García, David Arturo [242] see *Punzo, Jose L.*

Munoz, Cynthia (University of Texas at San Antonio), Raymond Mauldin (University of Texas at San Antonio), Robert Hard (University of Texas at San Antonio) and Stephen Smith (University of Texas at San Antonio)

[74] *Monitoring Fine-Grained Paleovegetation Shifts through Variation in Stable Carbon Isotopes of Leporids collected from Hunter-Gatherer Sites*

Stable carbon isotope analyses of cottontail (*Sylvilagus* sp.) and jackrabbit (*Lepus californicus*) bone collagen can track short-term, local vegetation conditions. Leporids occupy small territories (ca. 500 ha) and have short lives (<3 years). Their collagen reflects local, short-term vegetation conditions, and change in collagen values can track ecological shifts at these fine-grained scales. Hunter-gatherers adapt to these local, short-term ecological shifts. While large numbers of analyses are needed, shifts in collagen values from several Late Archaic and Late Prehistoric sites in Central/South Texas and other regions suggests that fine-grained ecological reconstructions may be possible through the analysis of leporid collagen.

Muñoz, Lizette (University of Pittsburgh), David Goldstein (University of South Carolina), and Nilda Condori (Proyecto Arqueológico Tuti Antiguo)

[188] *Paleoethnobotanical Studies in the Collesuyo Region: The Case of Malata*

We present the results from two hundred soil and macrobotanical samples from the habitational area of Malata, a transitional Late Horizon/Early Colonial site in the Colca Valley. Of major importance is the legacy of historical visitas that allow a potential comparison between the historical and archeological record as far as ecology, economy, and subsistence are concerned. Our dataset represents sealed features and surfaces from clearly defined architectural units (e.g., houses, workshops, religious precincts). We conclude with our preliminary insights into the impact of a major socio-political change in the production and consumption of plant resources by the Malata denizens.

Muñoz, Melissa [258] see *Hall, Lauren*

Munro, Andy (Centre for Astronomy, James Cook University)

[89] *Astronomy and the Design of Late Bonito Great Houses at Chaco Canyon*

The six Late Bonito Great Houses of Chaco Canyon stand apart from the Classic Bonito structures due to their single-phase construction to planned designs. During the 1970's it was determined that two were placed to complete formal lines of cardinality through the center of the

canyon. Research during the 1990's determined that two were sited and designed to operate as December Solstice calendrical stations. Cardinality and solstitial alignments demonstrate intentional application of astronomical observations to architectural design. New findings extend the association of astronomy and architectural design to the full set of Late Bonito Great Houses at Chaco.

Munro, Natalie (University of Connecticut) and Mary C. Stiner (University of Arizona)

[16] *Diversity Analysis of the Late Paleolithic and Mesolithic Fauna of Franchthi Cave, Greece*

Franchthi Cave in southern Greece contains one of the most important records of Late Pleistocene human diet change in Mediterranean Europe. Diversity analysis of the rich Upper Paleolithic-Mesolithic faunal series reveals a complex history of diet diversification and a dramatic shift from strictly terrestrial to marine-terrestrial foraging. Human meat diets diversified dramatically with time, first with respect to terrestrial resources as large game diversity diminished and small mammals and bird diversity increased, and subsequently a marine trajectory that began with high-yield littoral sources and expanded to include costly fishing ventures on the open sea.

Munro-Stasiuk, Mandy [160] see *Stockton, Trent*

Munson, Marit [200] see *Schleher, Kari L.*

Münzel, Susanne [157] see *Bocherens, Hervé*

Murguia Hernandez, Ana Iris

[57] *Architectural Diversity at Chalchihuites Sites in the Guadiana Valley*

The Chalchihuites culture was defined in the 1930s by Alden Mason based primarily on ceramic distributions. Investigations realized in the past five years in the Guadiana valley finally give us a large enough sample of the architectural variability present at Guadiana branch Chalchihuites sites. This paper presents an analysis of the sites in the region based on architecture, intersite relationships and their locations in the landscape.

Murray, Wendi (University of Arizona), Kacy L. Hollenback (University of Arizona) and Maria Nieves Zedeno (University of Arizona)

[228] *Central Places in the Back Country: Investment Scales and Community Formation among Blackfeet Hunters, Montana*

Among the Montana Blackfeet, the transition from bison hunting in the open prairie to elk hunting in the intermountain valleys of the northern Rocky Mountains not only required a shift in ecological and technological focus but a reorganization of "community," development of new social networks, and concomitant investment in place-making at various scales. We analyze the archaeology and geography of a central place--Beaver Lake, Lewis & Clark National Forest, Montana--and discuss its significance for the formation and persistence of the Blackfeet elk hunting community.

Myers, Ruth [252] see *Picklesimer, John W.*

Nadel, Dani (Zinman Institute of Archaeology, University of Haifa, Israel), Danny Rosenberg (Zinman Institute of Archaeology, University of Haifa, Israel), Reuma Arav (Israel Institute of technology, Haifa, Israel) and Sagi Filin (Israel Institute of technology, Haifa, Israel)

[147] *Detailed Three-dimensional Characterization of a Flint Quarrying Complex in Mt. Carmel, Israel*

A high-density complex of flint quarries in Nahal Galim (Mt. Carmel, Israel), is presented. Below dozens of natural flint exposures, there are large masses of limestone debris (quarrying by-products), commonly containing flint artifacts. The quarries are located at the immediate vicinity of many prehistoric sites, and only a few kilometers away from the famous prehistoric caves. We present a 3D documentation method, based on terrestrial laser scanning. The

mapping and characterization of the flint outcrops and limestone piles provides a powerful analytical tool regarding the location, dimensions and volume of limestone debris, and their correlation to the flint outcrops.

Nado, Kristin (Arizona State University) and Paul Goldstein (University of California, San Diego)

[226] *Social Boundary Maintenance at the Rio Muerto Site Cluster: A Bioarchaeological Perspective on the Mutability of Group Interactions within the Tiwanaku Diaspora*

The complexity of Tiwanaku state expansion resists characterization using simple models of centralized imperial colonization. Combining information about cranial modification style and nonmetric morphological traits from a skeletal sample interred at the Rio Muerto site cluster, this study investigates the ways in which Tiwanaku colonists in the Moquegua Valley defined themselves relative to other members of the diaspora to forge distinct systems of social organization and community identity. Results suggest that colonial Tiwanaku populations in Moquegua either descended from distinct parent populations or diverged in the peripheral setting through the creation of new social identities and boundaries among migrant groups.

Nado, Kristin [175] see *Contreras, Daniel A.*

Nagaoka, Lisa [19] see *Wolverton, Steve*; [235] see *Hoffman, Amy*

Nagle, Kimberly [236] see *Green, William*

Nagy, Andras (University of Cincinnati) and Kenneth Tankersley (University of Cincinnati)

[30] *Human Migrations in the Ohio Valley, 1520 to 1830*

In order to rigorously examine changes in land use through time, it is essential to diligently obtain precise data for the movement of human populations on the landscape. Early historic maps, which contain information from ethnographic documents, oral testimonies, and ethnographic descriptions, can provide "texts" to aid archaeological interpretations. These texts can also provide information about the processes of human adaptation, which is the ultimate goal of archaeology. The reoccurrence of distinctive geographic features and geological formations suggests landscape familiarity and pre-adaption in human migration patterns.

Nagy, Andras [62] see *Tankersley, Kenneth B.*

Nakamura, Shin'ichi [155] see *Qin, Ling*

Nakazawa, Yuichi (Zao Board of Education), Fumito Akai (Kagoshima Board of Education), Masami Izuho (Tokyo Metropolitan University)

[177] *Hunter-gatherers Responses to the Younger Dryas in Japan*

Recent accumulation of chronometric dates from Japanese archaeological sites makes assemblages attributable to the Younger Dryas (ca. 13,000-11,500 cal. B.P.) visible. The technological characteristics of the Younger Dryas assemblages are observed both among the technocomplexes of Upper Paleolithic (ca. 35,000 – 13,000 B.P.) and those of the incipient Jomon (ca. 13,000-9800 B.P.): potteries and projectile points invented (or adopted) by the Jomon hunter-gatherers are often associated with Upper Paleolithic tool classes such as stone axes, bifaces, and various unifacial tools. The goal of this paper is to evaluate adaptive strategies of the Younger Dryas hunter-gatherers through an examination of interassemblage variability.

Nash, Carole (James Madison University)

[59] *The Civilian Conservation Corps and the Archaeology of the Recent Past in Virginia*

Civilian Conservation Corps camps were intended as temporary communities. Despite the passage of only seventy years since occupation, the archaeological documentation of these transitory resources that fall between recorded history and remembered events

proves difficult. In contrast to excavation-based strategies, auxiliary methods of remote sensing, GPS, GIS, repeat photography, and oral history are necessary to the proper study of these resources. In Virginia, where over a quarter-million young men worked out of 175 CCC camps to shape public lands, archaeological testing has demonstrated profound spatial relationships between work, domestic, and recreation areas, illustrating a tension inherent in the quasi-military camp organization.

Nash, Robert (University of California, Davis)

[120] *Maize Storage and Hunting among Northern Periphery Fremont Groups*

Originally designated the Northern Periphery of the Southwest, the Fremont culture is today considered distinct. Red Canyon Fremont groups, living at the northern fringe of agricultural expansion, were the northern periphery of the Northern Periphery. The presence of high-elevation sites, including storage features, in the northeastern Uinta Mountains raises the question of whether maize had the same role among people on the northern periphery of the Fremont as it did among the rest of the Fremont. I argue the Red Canyon Fremont used maize for tactical purposes in order to maintain foraging efficiency by prolonging access to high-ranked resources.

Nash, Stephen (Denver Museum of Nature & Science)

[59] *Gender-Role Reversals, Big Digs, and Myriad Exhibitions: New Deal Archaeology at the Field Museum*

The Great Depression hit Chicago and the Field Museum during an important transition period in their respective histories. The Field Museum sought to move beyond collecting for its own sake and to engage in more scientifically oriented archaeological research. In 1933, Chicago hosted a World's Fair and chose to emphasize A Century of Progress since its founding, not its Phoenix-like rise from the ashes of the Great Chicago Fire of 1871. The Field Museum benefited greatly from New Deal programs; this paper examines their impact on the institution, the city, and on museum anthropology in general.

Nassaney, Michael (Western Michigan University)

[170] *Public Involvement in the Fort St. Joseph Archaeological Project*

The Fort St. Joseph Archaeological Project was initiated in 1998 to locate and investigate an 18th century French mission, garrison, and trading post. Public education and outreach have been essential to the success of the project from the start. Various stakeholders are recognizing the potential benefits and consequences of site investigation, heritage tourism, and a partnership with a large state university. The future of public involvement in the project and the lessons to be learned are dependent upon our ability to identify common ground in which archaeology serves as a metaphor for the discovery and recovery of our collective past.

Nassaney, Michael [255] see *Giordano, Brock A*

Nauman, Alissa [185] see *McNeill, Casey M.*; [185] see *Kuijt, Ian*; [185] see *Moore-Shay, Laura*

Naumann, Aaron (University of Washington)

[194] *"Uncharted" Territory: Considering the Boundary*

The study of territory as a social phenomenon recognizes territoriality as a basic human behavioral characteristic. It has historically been considered a closed subject, in that, territory is often defined as a device for simplifying and clarifying something else, such as political authority, cultural identity, individual autonomy, or rights. Recently, it has become clear territories are a more complicated social phenomenon. By providing both a historical review of archaeological attempts to identify territories and direction for future studies this piece attempts to reposition, ever so slightly, research on territories as bounded spaces by emphasizing the study of borders.

Naunapper, Linda (University of Wisconsin-Madison), Jeffrey R. Ferguson (University of Missouri (MURR)) and Michael D. Glascock (University of Missouri (MURR))

[73] *Instrumental Neutron Activation Analysis of Midwestern Ceramics* In Great Lakes' archaeology, Bell Type II pottery has been associated with, or proposed as representing the presence of, an historic tribe at archaeological sites dating to the contact through middle historic periods (A.D. 1610-1730). Recent systematic ceramic assemblage reviews identified far fewer specimens of Bell Type II pottery than previously proposed. Instrumental Neutron Activation Analysis (INAA) was performed on select associated ceramics and clays, defining six compositional groups. The groups differ in their affiliation with either Wisconsin or Michigan clays. Combined with more qualitative morphological analyses, INAA data suggest intriguing relationships amongst morphologically similar and dissimilar ceramics.

Navarro Farr, Olivia (Southern Methodist University), Ana Lucia Arroyave Prera (La Universidad de San Carlos de Guatemala) and Keith Eppich (Southern Methodist University)

[77] *Evidence for Non-Elite Ritual Activity at the Monumental Locale of Str. M13-1 at El Perú-Waka'*

Artifact analyses at Structure M13-1 reveal complex ritual activity spanning the end of the Late Classic to the early Terminal Classic. While investigations reveal some adherence to socio-political hierarchy, there is also considerable evidence for non-elite ritual participation rarely documented in an occupied site center. Given the transitional and precarious nature of the time period - both politically and economically - indications of non-elite ritual engagement at a principle public shrine provide tantalizing clues for how "ordinary" citizens of primary sites like Waka' may have been attempting to adapt and respond to events unfolding around them in ways not previously considered.

Nazaroff, Adam [148] see *Prufer, Keith M.*

Ndanga, Jean-Paul [53] see *Safi, Kristin N.*

Neal, Lynn (EnviroSystems Management, Inc.) and Jane Eva Baxter (DePaul University)

[51] *Women's Assets in the Pursuit of Archaeological Inquiry* What do women uniquely bring to the field of archaeology? What are the particular contributions that women make to our field? In a session celebrating the lives of pioneering women in archaeology, this paper looks more generally at the particular and important contributions that women make and have made to the discipline of archaeology. Particularly, we will look at how women have initiated new types of questions and developed frameworks of inquiry in archaeological research, as well as exploring how women have changed the practice of archaeological work through differing perspectives on collaboration, pedagogy, and business.

Nedelcheva, Petranka [147] see *Gatsov, Ivan B.*

Neff, Hector (California State University-Long Beach)

[194] *Framing Hypotheses that Can Be Falsified: The Role of Physical Science Techniques*

Physical-science techniques have become increasingly common in archaeology over the past 30 years. Sometimes the analytical data play little more than a supporting role in the construction of stories about the past. There are some examples, however, in which statements about the past have been framed in such a way that they make clear predictions about patterning expected in analytical data. In these cases, the analyses lead to falsification, the sine qua non of scientific explanation.

[126] *Discussant*

Neff, Hector [251] see *Hill, Mark A.*

Neff, Margaret (Northern Arizona University)

[136] *3-D Modeling of Cerro Jazmín, Oaxaca*

GIS modeling is used to investigate the effects of spatial layout on movement within an extensively terraced hilltop urban center in the highlands of Mexico. Cerro Jazmín has an organic street pattern and no clear internal divisions. A modeling technique called Least-Cost

Path analysis is used to construct a network of probable movement, and principles of Space Syntax reveal restrictions on movement within the city. The path network, the options available for travel within the city, and patterns of access and connectivity are analyzed for evidence of social distinctions, including social and occupational differentiation.

Nehlich, Olaf (Max-Planck Institute for Evolutionary Anthropology) and Michael Richards (University of British Columbia)

[82] *Sulphur Isotope Analysis of Ancient Bone Collagen*

Increasing research interest in the analysis of sulphur isotopes of archaeological bone collagen has brought up the question of reliability of the obtained results. We present the results of experiments to determine the appropriate quality markers for assessing the integrity of sulphur isotope measurements, namely the amount of sulphur, C:S and N:S ratios. We also present a case study where we applied sulphur isotope analysis to address the issue of the magnitude freshwater fish consumption in the Danube Iron Gates gorge region (in Serbia). We found that freshwater fish from the Danube was the main protein source in the Mesolithic period but was not heavily exploited in the Neolithic. We use these results to demonstrate the effects of two different dietary sources on sulphur isotope values and the implications for our understanding of ancient diets.

Neill Cruz, Oscar [147] see *Jaime-Riveron, Olaf*

Neiman, Fraser (Monticello) and Jillian Galle (DAACS/Monticello)

[201] *Comparative Advantage, Internal Markets, and their Archaeological Consequences in Caribbean Slave Societies.*

Models of comparative advantage from economics suggest that participants in market transactions enjoy significant adaptive advantages over non-participants. We use this idea to examine variation in the importance of internal markets and its archaeological consequences among slave societies of the Caribbean in the eighteenth and early nineteenth-centuries. We compare artifact assemblages from slave village sites in Jamaica and Nevis, focusing on the extent to which historically documented variation in the scale of internal markets explains variation in the production and consumption of locally-made earthenware and levels of access to costly European consumer goods, especially ceramics.

Neiman, Fraser [201] see *Galle, Jillian E.*

Neiman, Fraser D. [166] see *Devlin, Sean*

Neitzel, Jill (University of Delaware)

[37] *Hohokam - Chacoan Connections in the Late Prehistoric U.S. Southwest*

For roughly three centuries, the Hohokam of south-central Arizona and the Chacoans of northwest New Mexico coexisted as the late prehistoric Southwest's major centers of cultural development, sociopolitical complexity, and regional influence. Legions of archaeologists have studied virtually all aspects of these societies, and the results have in turn been the basis for a series of Hohokam - Chacoan comparisons. One topic that has received relatively little attention is Hohokam - Chacoan interaction. This paper examines the evidence for connections between the two groups and the implications for understanding macro-regional interaction throughout the Southwest.

[37] *First Chair*

Neivens De Estrada, Nina (Tulane University)

[218] *Early Lowland Maya Ceramics: The Material from Holmul, Peten, Guatemala*

Recent excavations have increased our sample of early ceramics from Holmul, Guatemala which correlate stylistically with the early Eb, Xe, Cunil, and Ek complexes found elsewhere in the Maya lowlands. In 1990, Andrews suggested, "we have much to learn from examination and reanalysis of excavated collections. We neglect them at our peril." Following this advice I try to place these Holmul

ceramics in the context of the early settlement of the Maya Lowlands. Through stylistic analysis and comparison with other early complexes, both in the Maya lowlands and elsewhere, I comment upon the process of ceramic adoption at this site.

Nelson, Ben (Arizona State University), Johannes Neurath and Loni Kantor

[242] *Monumentality as a Social Product*

In some ancient contexts, small social units marked the landscape by venerating their ancestors' remains in sacred precincts, which over time and in aggregate grew into great monuments. La Quemada, Zacatecas, Mexico, affords opportunities to understand such materialization of social identity and memory; Wixárika (Huichol) people today still build tukipa groups, containing a temple plus other buildings related to its periodic use, as well as the associated patio. We argue that the prehispanic centers of the region were essentially collections of tukipa groups plus a higher-order, public component that does not exist today and represented a regional level of integration.

[57] *Discussant*

Nelson, Kit (Tulane University) [35] *Discussant* [119] *Discussant*; Davenport, James A.; [137] *see* Dunn, Stacy M.

Nelson, Margaret (Arizona State University)

[192] *The Diverse Social Landscape of the 13th-15th Century, southwest New Mexico*

The social landscape of the late prehistoric period in the southern Southwest is incredibly diverse, as indicated by the variety of community forms, architectural styles, and ceramic forms. That diversity in southwest New Mexico stands in stark contrast to the previous Mimbres tradition, dominated by a single ceramic and architectural form and village structure. How does such diversity develop at various scales -- village, local, and regional? What does it represent about movement, integration, and exchange? To begin addressing these questions, I explore the ceramic diversity evident at various scales throughout southwest New Mexico from the 13th through 15th centuries.

[12] *Discussant*; [192] *see* Ferguson, Jeffrey R.; [192] *see* Schollmeyer, Karen Gust; [192] *see* Swanson, Steve

Nelson, Zachary (ENTRIX, Inc.)

[50] *Toasting the Future of Archaeologists*

Futurity is Coming! The role that archaeologists will play in the coming decades will be determined by the continuum of their past and present activities. From CRM to the Ivory Tower, archaeologists mold the messages that media receive through new technology coupled with past experience. Preparing for the future by understanding the past is basic to archaeological interpretation, but not always incorporated into archaeological media presentations. How will archaeologists react to the future?

Neme, Gustavo [161] *see* Glascock, Michael D.

Neudorf, Christina [183] *see* Eren, Metin I.

Neurath, Johannes [242] *see* Nelson, Ben A.

Neusius, Phillip [162] *see* Neusius, Sarah W.

Neusius, Sarah (Indiana University of PA), John Kilmarx (Indiana University of Pennsylvania), and Phillip Neusius (Indiana University of Pennsylvania)

[162] *Teaching Archaeology and Preparing Students: Evaluating the Archaeology Track at Indiana University of Pennsylvania*

The current archaeology track at Indiana University of Pennsylvania was created as part of a major overhaul of the Anthropology curriculum in late 1980's designed around an Applied Anthropology focus. The archaeology track requires that students take a field school, a course in CRM, laboratory methods and courses in both anthropological and archaeological theory. Anecdotal evidence has

suggested that this popular track does a good job of preparing students both for field technician positions and for graduate school. This is supported by recent systematic assessment of the programs outcomes, but areas for improvement are also suggested.

Neusius, Sarah [162] *First Organizer*; [162] *First Chair*

Neuzil, Anna (EcoPlan Associates, Inc.) and Stephen Lekson (University of Colorado, Boulder)

[40] *Best of Kiva: A Selection of the Most Influential Contributions to Kiva*

Over 75 years, Kiva has published scores of seminal articles in all areas of Southwestern anthropology and history. Our poster highlights the most influential articles, and puts those articles and Kiva's contributions in context.

Neves, Eduardo (University of São Paulo) [142] *Discussant*

Neves, Walter [47] *see* Strauss, André

Newbold, Bradley (Washington State University)

[120] *Large Game Specialization v. Small Seed Processing: Are They Mutually Exclusive?*

Recent archaeological research within the American west has perpetuated the notion of enlarged diet breadth of hunter-gatherer groups during the Early Holocene, as evidenced by increased faunal diversity, especially of small game, and the incorporation of grinding stone technology. However, faunal and groundstone data from the earliest occupations at North Creek Shelter, a multi-component upland site on the Colorado Plateau of south-central Utah, suggest that small-seed processing flourished after ~9000 BP but not to compensate for a lack of or even reduction in high-rank resources, as Early Archaic occupants continued to focus predominately on large game hunting on par with their Paleoarchaic forbears.

Newbold, Bradley [118] *see* Yoder, David T.

Newby, Paige (Brown University)

[224] *Changing Conditions during the Younger Dryas Interval in Northeastern North America*

The Younger Dryas climate oscillation (12.9-11.6 ka; YD) impacted a widespread area that includes New England and Maritime Canada (NEM). Advances in knowledge about regional conditions during the YD indicate a dynamic post-glacial landscape. Detailed paleorecords from southern New England, which show intermittent drought and localized changes in vegetation, present information at scales of interaction most useful to archaeologists. In contrast to broad-scale evidence for human presence across diverse environments in North America at this time, ecosystem changes during the YD in NEM appear consequential to humans throughout the YD.

Newlander, Khori (University of Michigan Museum of Anthropology)

[232] *The Role of Chert in Eastern Nevada Paleoarchaic Land-Use Strategies*

Preliminary results of an analysis of source provenance and technological organization of chert artifacts from Terminal Pleistocene/Early Holocene (TP/EH) assemblages in eastern Nevada are presented. TP/EH foragers generally used obsidian to make stemmed points (hunting gear) and chert for other tools (resource-processing gear). And while obsidian artifacts have seen decades of analyses, the location of chert sources and the organization of chert technology remain relatively unknown in the Great Basin. I argue that an analysis of source provenance and technological organization of chert artifacts may delineate complementary scales of mobility and modes of resource acquisition to that documented for obsidian.

Newsom, Lee (Penn State University) and Sarah Sherwood (Dickinson College)

[52] *Micromorphological, Microartifact, and Plant Anatomical Analysis of Berry Site (Joara and Fort San Juan) Structures.*

We combined different sampling strategies to conduct microstratigraphic (thin sections), microartifact and plant anatomical analyses of two burned structures at the Berry site. Structures 1 and 5 are intensively mapped and excavated to garner a more complete understanding of building construction, activity areas, and taphonomic processes. Oak was a preferred construction material but other woods appear to have been selected for secondary construction elements and as fuel. Food processing may explain the presence of certain microartifacts and fragmentary nutshell. Masses of graminoid stems likely represent original thatch and floor matting, whereas fern stems may relate to localized activities.

Newton, Cody (University of Colorado @ Boulder)

[111] *"Were those Bricks Possessed of Tongues": An Examination of the Unusual Trading Post Concentration on the South Platte River, 1837-1838*

This paper analyzes the unusual trading post concentration – Fort Vasquez, Fort Jackson, Fort Lupton, and Fort St. Vrain – that operated simultaneously along the South Platte River during the late 1830s. These posts traded almost exclusively in bison robes provided by Sioux, Cheyenne, and Arapaho hunters. Previous explanations have oversimplified the reasons for this concentration of trade by largely ignoring indigenous instrumentality and ecological factors. Heretofore unexamined environmental data combined with research into intertribal conflict provides a more holistic explanation for this unique conjuncture.

Nguyen, Diana [4] see *Tushingam, Shannon*

Nguyen, Jimmy [4] see *Tushingam, Shannon*

Nials, Fred (Desert Archaeology, Inc.; GeoArch)

[44] *The Geomorphic and Stratigraphic Setting of Agricultural Features in the Las Capas Site, Arizona*

Las Capas is situated on a relatively broad, flat floodplain, in a geomorphic setting that favored perennial streamflow. The location fostered early development of irrigation farming that has persisted in the area for more than 3,200 years. Multiple periods of differing flood regimes resulted in rapid deposition of floodplain sediments. Individual strata are distinct in texture, color, and mineralogy and are unusually consistent over a large area. These conditions and characteristics have allowed the identification of hundreds of individual fields and borders and more than 160 canals and water distribution features representing nearly a millenium of farming at the site.

[44] *First Chair*

Nicholas, George (Simon Fraser University)

[63] *Discussant*; [159] *Discussant*

Nicholls, Brian (University of Wisconsin-Milwaukee)

[124] *Searching through the Unknown: Geospatial Analysis of the Milwaukee County Grounds Cemetery*

Investigations undertaken at the Milwaukee County grounds produced a variety of datasets including a series of site maps created using a plane table and optical transit. Preliminary analysis using the spatial data was conducted using these sets of maps creating several distributional maps. Geospatial research conducted for this presentation will expand the initial spatial findings combining the digitized spatial data of the excavated burials with other relative datasets.

Nichols, Deborah (Dartmouth College) and Susan Evans (Penn State University)

[88] *Americanist Archaeology Explains the World: A View from the Region*

Formation of the SAA was part of a larger intellectual movement in U.S. archaeology, a new approach to ancient societies using basic anthropological principles, cultural ecology and cultural evolution, to develop methods to document and interpret the trajectory of civilizations. We argue that this is American archaeology's most

significant contribution to understanding global cultural heritage. From research like Steward's culture core analysis (Great Basin) and Willey's settlement survey (Virú Valley), developed landscape surveys that became standard in our field. Sander's Basin of Mexico project shows how the earliest research traditions of our tribe, the SAA, led to immensely valuable results.

Nicodemus, Amy (University of Michigan)

[149] *Animal Production Strategies and Exchange Networks in the Maros Region*

During the Early to Middle Bronze Age, communities along the Maros River developed different organizational systems, from small autonomous villages to larger tell-centered societies. These groups participated differentially in long distance trade networks, in part predicated by community size and location. However, equally important was the ability to produce sufficient and reliable quantities of surplus goods for exchange. In this region lacking mineral resources, agricultural goods, especially livestock and their products, were important export commodities. Comparison of the animal economies between autonomous villages and central tell settlements highlights the distinctive production strategies employed in these contrasting systems.

Nicolás Caretta, Miguel Angel [57] see *Nicolau Romero, Armando*

Nicolau Romero, Armando, Achim Lelgemann (Coordinación de Ciencias Sociales y Humanidades (Universidad Autónoma de San Luis Potosí)) and Miguel Angel Nicolás Caretta (Coordinación de Ciencias Sociales y Humanidades (Universidad Autónoma de San Luis Potosí))

[57] *Transformación del Espacio Arquitectónico y Medio Ambiente en la Región del Cañón de Juchipila: 1500 Años de Evolución Cultural*

Se presentan los resultados sobre los sistemas constructivos, transformación del espacio y relación con medio ambiente y paisajes a lo largo de 1,500 años de ocupación detectada en el cañón de Juchipila, sur de Zacatecas. Se discute posibles procesos de interacción cultural con otras esferas (Azatlán, Teotihuacán, Bolaños-Valparaíso, La Quemada, Chalchihuites) durante el desarrollo de su historia, donde se deriva la necesidad de replantear la interpretación analítica del modelo arquitectura y medio ambiente como indicador de datos para la conformación de nuevas hipótesis y construcción de nuevas herramientas teórico metodológicas ante esta problemática surgida de la propia investigación.

Nicolay, Scott (CARST), J. Judson Wynne (Northern Arizona University) and Sergio Rapu

[62] *The Underground Gardens of Easter Island: Cave Agriculture, Water Management, and Prehistoric Cave Use on Rapa Nui*

Although the famous stone statues have been the focus of much of the archaeological research on Rapa Nui, the island's hundreds of caves are important features which have yet to receive systematic study. Fieldwork conducted in the caves of the Maunga Roiho Hiva Hiva Quadrangle in 2009 revealed that underground water management occurred on a scale not previously documented, and that the Rapanui people also modified skylights and collapse pits to support subterranean agriculture. The proximity of these modified caves to surface settlements is not coincidental.

[62] *First Organizer*; [62] *First Chair*

Nicosia, Cristiano [259] see *Arroyo-Kalin, Manuel*

Nida, Brandon (UC Berkeley)

[167] *A Mountain Yarn: Archaeology of the West Virginia Coal Wars*

The collaborative work I am involved in at Blair Mountain draws from the 'emancipatory archaeology for the working class' model of political research developed at Ludlow and elsewhere. Community engagement, political activism, standpoint theory and collaborative methods are core aspects of this research. This presentation will discuss the archaeological investigations I am undertaking at Blair Mountain – public outreach efforts, initial data analysis, and future directions.

[167] *First Organizer*; [167] *Second Chair*

Nielsen, Colin (McGill University)

[60] *Identifying Interactions on Prehistoric Eastern James Bay through Ceramic Sourcing*

Distinguishing between types of interactions eludes a comprehensive methodology despite the substantial differences each interaction type entails for the interpretation of the archaeological record. FeGj-t2 on Eastern James Bay contained a ceramic sherd incised with a diagonal linear pattern similar to Huron types from south-western Ontario. Using INAA analysis we test whether these ceramics were of local or imported raw materials. Local materials with a Huron style indicates cultural diffusion or coincidental independent innovation. A non-local source indicates exchange or the movement of people. While INAA reduces the options, there still remains no unambiguous means of identifying specific interaction types.

Niemi, Karen (Gray & Pape, Inc.)

[179] *Middle Woodland Community Organization in the Whitewater River Basin*

Recent excavations at Site 12Fr310 in Franklin County, Indiana, have identified the structural remains of a Middle Woodland domestic habitation and yielded data on site activities and organization. Nearby contemporaneous sites include small artifact scatters or camps, larger artifact scatters interpreted to be domestic sites, and mounds—traditionally considered the focus of mortuary ceremonialism and ritual activity. Drawing on this settlement data, this paper explores Middle Woodland community organization in the Whitewater River Basin. Existing data and models of community organization from adjacent regions is also compared.

Niemi, Karen [252] First Organizer; [252] First Moderator

Nieves, Ana (Northeastern Illinois University)

[98] *The "Mythical Killer Whale" in Nasca Valley Rock Art and Nasca Ceramic Iconography*

The motif known as the "Mythical Killer Whale" is one of the most identifiable figures in the art of the Nasca culture. Although it has the body of a marine animal, this creature also has a human hand. This composite creature often holds a human head or a knife, demonstrating a clear association with decapitation rituals. The purpose of this paper is twofold: to examine the relationship between representations of the "Mythical Killer Whale" in ceramics and in the rock art of the Nasca Valley, and to explore this figure's shark attributes.

Nigra, Benjamin (University of Chicago), Hans Barnard (UCLA) and Rodolfo Talavera Zuniga

[188] *Structural Patterning at Millo II in the Southern Huari Periphery*
Millo II, located in the Vitor Valley south of Arequipa, Peru, presents a unique urban layout that sheds light on architectural patterning in the Huari periphery. Structural remains at this site display a variety of typical Huari features, including irregular stone and mud mortar construction and orthogonal planning. As has been proposed for sites in the nearby Cotahuasi Valley, however, the layout of Millo II does not appear to be directly comparable to other periphery sites such as Pikillacta or Viracochapampa (Jennings and Alvarez 2001). Architectural patterning at Millo II thus offers new insights into Huari influence south of Arequipa.

Nigst, Philip (Max-Planck-Institute for Evolutionary Anthropology)

[184] *Bladelet Technology in the Bohunician, Szeletian, and Early Aurignacian of the Middle Danube Region*

Bladelet technology is regarded by many as one of the traits of behavioural modernity and is listed among the Upper Palaeolithic innovations. One of the critical questions is when does bladelet technology occur in the archaeological record? The goal of this paper is to answer this question for the Middle Danube region. After defining criteria for the presence/absence of bladelet technology, the evidence from a lithic analysis of Bohunician, Szeletian, and Early Aurignacian

assemblages of key sites in the Middle Danube region is presented. Based on this evidence it is argued that bladelet technology does not appear before the Aurignacian.

Nigst, Philip [184] see Bosch, Marjolein D

Nitsch, Erika

[34] *Examining Dietary Change in Roman and Early Medieval Italy using Stable Isotope Analysis*

As Germanic populations moved into Italy following the collapse of the Roman empire, documentary evidence suggests a change in eating habits, away from the fish products of the Mediterranean, toward a diet high in animal protein. This paper discusses the stable isotope analysis of two rural Italian populations, from the Imperial Roman site of Casal del Dolce, and the early medieval cemetery at S. Pietro di Villamagna, investigating a possible change fish consumption patterns. We see how dietary information from stable isotope analysis can be used in a wider context to investigate social, economic and political changes in ancient populations.

Niziolek, Lisa (University of Illinois-Chicago)

[175] *A Geochemical Study of Earthenware Production and Distribution in the Protohistoric Philippines*

Over the past several decades, archaeologists have increasingly used geochemical analysis to examine past human lifeways. One method that is particularly well-suited for mining cultural material for information on provenance and exchange is laser ablation-inductively coupled plasma-mass spectrometry. Although LA-ICP-MS has seldom been used for research in Southeast Asia, it has provided promising results regarding the role of craft specialization in the political and economic expansion of the prehispanic trading polity of Tanjay (A.D. 500 to 1600) in the Philippines. Specifically, I have used LA-ICP-MS to analyze archaeological ceramics and clays to investigate changing production and distribution patterns in Tanjay.

Noack, Kelsey (Jamestown Rediscovery)

[154] *The Starving Time at Jamestown: A statistical analysis of Fauna consumed in early 17th Century Virginia*

A rich documentary record provides first-hand accounts of the conditions colonists endured during the Starving Time winter of 1609-1610. Recently, faunal identification and analysis has been conducted on some of the early archaeological remains at Jamestown, providing concrete data on the animals that were consumed during the provisioning crisis. Comparisons can now be made between the 1607-1610 time period and the second quarter of the 17th century regarding the diversity of meats consumed in order to demonstrate just how unusual the Starving Time meat diet may have been. Aside from the temporal comparison between periods at Jamestown, a locational comparison is made between Jamestown and the 1620-1635 settlement at Jordan's Journey, also located on the James River.

Noel, Stéphane (Memorial University of Newfoundland)

[25] *La Table du Capitaine: French Fishermen's Foodways and Expression of Social Status on the Petit Nord of Newfoundland*

Archaeological excavations at the Dos de Cheval site (EfAx-09), on the east coast of Newfoundland's Great Northern Peninsula, offer the opportunity to document the foodways of French migratory cod fishermen. Food supplies, both imported and procured from the local environment, played a predominant role in the outcomes of fishing ventures. Integration of zooarchaeological, archaeological and historical evidence will provide a more complete and broader portrait of fishermen's food consumption from the 17th to the 19th centuries. Historical and archaeological evidence also shows that food consumption was clearly delineated among the crewmembers of lower and higher status, both spatially and socially.

Nolan, Kevin (The Ohio State University)

[244] *Siteless Survey of the Reinhardt Three Kilometer Catchment*

As one of Bill's key contributions, siteless survey goes beyond simple site orientation to begin to understand prehistoric settlement-

subsistence systems and landuse. I summarize the siteless survey of just over 200 acres within 3 km of the Reinhardt village, a Middle Fort Ancient village in the middle Scioto Valley. Survey tracts were selected to provide coverage of a variety of soil associations, variable distance from large and small streams, and were limited by land owner permissions. My analysis focuses on variable density within and among tracts and by a series of environmental variables to discover typically under examined activity areas.

Noll, Christopher (Plateau Archaeological Investigations)

[147] *The Development of Lithic Extraction Areas in the Okanogan Highlands During the Late Holocene: Evidence From Curlew Lake, Washington*

Recent excavations in the Okanogan Highlands have identified an extraction area at a fine grained volcanic source associated with alluvial chert deposits. The development of this site occurred after approximately 3,500 BP, during a time when the use of high quality stone increased at sites in the region. High quality stone use has been interpreted as a sign of increased mobility and group interaction that resulted in access to these materials from other regions. The Curlew Lake lithics suggest that intensified foraging away from the Columbia River may have increased knowledge of, and access to, relatively local high quality stone.

Nomokonova, Tatiana [16] see Losey, Robert J.

Norder, John [174] *Discussant*; [225] *First Organizer*

Norman, Neil (William and Mary)

[64] *Pythons in Process: An Archaeology Animals and Socio-Political Dynamics in the Bight of Benin Region, 1650-1727 A.D.*

The international coastal trading entrepôt of Ouidah is infamous as the point of embarkation for hundreds of thousands of people spirited into the Middle Passage. Accordingly, scholars have looked to conflict between three kingdoms in the region—Allada, Dahomey, and Hueda—as a struggle over this economic outlet into the Atlantic World. This paper explores animals and animal metaphors imbedded within the socio-political dynamics that led to unprecedented warfare and consolidation in the early 18th century AD.

Norman, Vernal G. (ARCON, Inc.)

[99] *2012 End Date?--Izapa Stela 5 World Tree Ages*
Izapa Stela 5 World Tree history (Norman, Izapa Sculpture 1976:199-212, Fig. 4-12) has been decoded to a 6500 year time scale with features at 500-year increments. Stela 5's tree plus Stela 12 reveals Izapan pre-Mayan history and calendars. The time scale is composed geometrically with standard measure. It runs from a creation base path line at the roots, projected at 3114 B.C., up the tree trunk path line to the top broken trunk line at 2087 A.D. (solar calendar). Two Stela 12 dates, and the 5 World Ages, with scaled dates on the trunk, are fixed to their adjacent numbered signs with 4 Earthquake ending the 5th Age at 2087 A.D. rather than 2012 A.D.

Nott, BreAnne (Washington State University), Brian Kemp (Washington State University) and John Jones (Washington State University)

[84] *Palynological and Molecular Analysis of Ancient Turkey Coprolites from Turkey Pen Ruin*

Turkey domestication Genetic evidence of turkey coprolites from Turkey Pen Ruins site suggest that all tested coprolites were made by domestic birds. This study conducts a palynological analysis of turkey droppings found at a Basketmaker II site that were previously analyzed genetically in order to reconstruct the birds' diets and explore evidence for their domestication. Using additional palynological and molecular analysis of 11 coprolites, this study further explores turkey domestication during Basketmaker II at Turkey Pen Ruins. Preliminary results of palynological analysis display over 20 plant taxa with detectable differences in diet and seasonal occupation at the site.

Nott, BreAnne [19] see Bocinsky, R. Kyle

Novotny, Anna [176] see Carr, Christopher

Novotny, Michael [144] see Stehman, Kelly M.

Nowell, April (Univ of Victoria-Dept of Anth) and Melanie Chang [205] *Pornography is in the Eye of the Beholder: Presentism and the Interpretation of Upper Paleolithic Figures*

When the discovery of the Hohle Fels figurine was announced publicly it was described in popular media and in *Science and Nature* as "aggressively pornographic," "a 35,000 yr old sex object" and a "prehistoric pin-up." What does 'pornographic' mean in an Ice Age context and what is the place of this kind of labelling in scientific analysis? This paper examines the role of presentism in the analysis and interpretation of human figures in the visual cultures of the European Upper Paleolithic.

Nunez, Nelly (Universidad Nacional Autónoma de México)

[254] *Un Museo de la Cultura Olmeca*

Adentrado en la zona nuclear Olmeca, se encuentra el museo comunitario de San Lorenzo Tenochtitlán. Dicho espacio alberga las piezas recuperadas en las diferentes investigaciones arqueológicas realizadas en la zona, así como algunas encontradas por los pobladores; en esta ponencia les presento la historia de la formación de este espacio, su importancia dentro de esta comunidad y el catálogo de piezas que podemos encontrar.

Nyiri, Borbola [149] see Klehm, Carla E.

O'Brien, Lauren (Southern Methodist University), Albert Gonzalez (Southern Methodist University) and Brooke M. Morgan (Southern Methodist University)

[200] *Make it Hot, Hot, Hot: Experiments in Thermal Efficiency of Micaceous Clay Cookware*

Primary micaceous clay with super-abundant levels of mica is found in high-elevation Precambrian formations in northern New Mexico. This clay has remarkable thermal and physical properties that make it an excellent cookware, and it has been widely used for cooking in the Northern Rio Grande and elsewhere in New Mexico since AD 1300. According to traditional potters, important properties of mica clay include increased resistance to mechanical and thermal shock and enhanced heating efficiency due to high concentrations of mica. This poster examines the effects of surface treatment, wall thickness, and mica abundance on the thermal efficiency of experimental pots.

O'Brien, Matthew (University of New Mexico), Bruce B. Huckell (University of New Mexico) and Christopher Merriman (University of New Mexico)

[21] *Interstate 25 or 40? Variation in Folsom Mobility Patterns in the Middle Rio Grande Basin of New Mexico*

Recent University of New Mexico excavations explored Boca Negra Wash and Deann's Site—two single component Folsom sites located near Albuquerque, New Mexico. Based on identified raw material source locations, toolstone frequencies indicate that the Boca Negra Wash site is dominated by materials from the north (an "I-25" approach to the site) while the Deann's Site assemblage contains materials from the west (an "I-40" path to the site). These patterns suggest that regional mobility exhibits greater complexity than originally believed. We discuss these ideas in the context of existing models and weigh their significance for understanding Folsom land use.

O'Brien, Michael (University of Missouri) [208] *Discussant*

Ochoa-Winemiller, Virginia [65] *First Organizer*; [65] see Winemiller, Terance

Oconitrillo, Giancarlo (Giancarlo Oconitrillo) and Ronald Martínez (Museo Nacional de Costa Rica)

[196] *Comunidades en la Investigación de su Pasado: Herencia Precolombina e Historia Oral en San Vicente de Nicoya*

En San Vicente de Nicoya se ha generado un proceso de gestión participativa del patrimonio cultural a través del Ecomuseo de la Cerámica Chorotega. Mediante una propuesta educativa y de animación se ha facilitado la construcción de conocimientos, que permite a los pobladores generar una investigación de su pasado precolombino y de su memoria colectiva. Para ello se desarrolla una capacitación en temas arqueológicos paralela a un proyecto participativo de investigación en historia oral, que conlleva a un guiño de exhibición museográfica. En esta ponencia se hace un balance de la experiencia metodológica y de los resultados obtenidos.

O'Day, Karen (University of Wisconsin-Eau Claire)

[260] *Reconstructing Jewelry Sets in the Isthmo-Colombian Area*
Ancient Paracas garments and contemporary powwow regalia: these are just two examples of cohesive sets of body ornamentation in the Americas. Despite the well-known examples, ornamentation tends to generate research that examines one type of ornamentation (e.g. pendants) or multiple types sharing a motif. Yet data exist about sets, even those created in antiquity. The paper raises the following question: what is possible in the reconstruction of sets documented by archaeological site reports? This question is investigated with data about jewelry excavated at the Sitio Conte necropolis in Panama.

O'Donovan, Maria (Public Archaeology Facility) and Nina Versaggi (Public Archaeology Facility)

[180] *Commemorating the Past through Visual Representations: A Case Study from Binghamton's Urban Core*
Public Archaeology Facility excavations on a historic-prehistoric site in the urban City of Binghamton offered opportunities for creative avenues of community outreach, including both educational and commemorative projects. Archaeologists worked with building designers, collaborated with Native American artists, joined with a major regional museum, and are proposing interpretive signage along an adjacent river walk as part of a suite of visual representations of the region's past. In this paper, we will discuss these efforts that go beyond the brochure, including the audiences they reach, and how we can encourage more community participation in the commemoration of the region's past.

O'Gorman, Jodie (Michigan State University)

[140] *After the Moment Passed*
The Moorehead Moment had implications for eastern North American societies well beyond Cahokia, and the dynamics of these relationships were not insignificant to stability of the chiefdom. Development and remarkable spread of Oneota societies around A.D. 1200 to 1300 are examined in light of environmental and political factors related to the end of the Moorehead Moment at Cahokia. Particular attention is given to Oneota interaction and non-interaction with Mississippian groups.

Ogundiran, Akin (UNC Charlotte) [227] Discussant

O'Halloran, Laura [71] see Short, Laura M.; [163] see Thomas, Sunshine

O'Hara, Michael (Arizona State University)

[253] *Theorizing and Materializing the Virgin Puebloan Frontier on the Arizona Strip*
The development of Virgin Puebloan culture has largely been viewed as peripheral and derivative of developments in a Puebloan core. These assumptions will be examined in the context of anthropological theories of frontiers, social boundaries, technological style, and the materialization of identity. Domestic and ritual architecture, projectile points and lithic technology, and decorated and plainware pottery are used to compare and contrast Virgin and Kayenta Puebloan material culture and social organization. Rather than peripheral and derivative, the unique trajectory of Virgin Puebloan culture is shown to have been creatively constructed by sharing, adapting, or re-defining material expressions and social ideas.

Ohnersorgen, Michael (University of Missouri-St. Louis),

Enrique Soruco Saenz (Instituto Nacional de Antropología e Historia), Mauricio Garduno Ambriz (Instituto Nacional de Antropología e Historia), Michael Mathiowetz (University of California, Riverside)

[199] *Solar Ceremonialism and Human Sacrifice: The Aztatlán Tradition at Chacalilla, Nayarit*
Since 2003, the Chacalilla Archaeological Project has been investigating political-economic organization and exchange associated with Mesoamerica's Aztatlán tradition. Through fieldwork and artifact analysis, patterns of craft production and trade are being reconstructed to help evaluate models of political and economic interaction associated with the wider spread of the Aztatlán phenomenon. Excavations in 2008 yielded data from offerings, architecture, and evidence of human sacrifice that provide an opportunity to explore aspects of religious ideology that were embodied not only at ancient Chacalilla, but that were manifested more widely throughout prehispanic Mesoamerica and persist among modern indigenous groups of west Mexico.

[199] *Second Chair [199] Second Organizer*

Ohnersorgen, Michael [162] see Corella, Elijah J.

Ohnstad, Arik (Vanderbilt University) and John Janusek (Vanderbilt University)

[222] *The Chronology and Iconography of the Stone Stelae of the Titicaca Basin Formative*
David Browman's work on the chronology and iconography of stone statuary in the Formative-period Titicaca Basin has had a lasting influence on interpretations of this period and these potent material media. In this paper, we assess Browman's approach to Formative-period stone-carving in light of recent data from the southern Titicaca Basin, including the stone stelae from the site of Khonkho Wankane. We find his analyses especially valuable for understanding chronological development, and focus particularly on his criteria for categorizing and seriating variation in the style of stelae throughout the period.

Oka, Rahul (University of Notre Dame), Chapurukha Kusimba (Field Museum of Natural History), and Vishwas Gogte (Deccan College Post-Graduate and Research Institute, Pune, India)

[121] *Using Chemical Analyses (LA-ICP-MS) of Ceramics to Investigate Ancient Commercial Behaviors: Trade Booms, Market Capture, and Competition in the Indian Ocean Trade*
We employed LA-ICP-MS chemical analysis to postulate changes in merchant behavior, practices and strategies in post-European contact Indian Ocean commerce. We used Chinese, Islamic, and Imitation trade ceramics to test broader socio-economic processes including trade booms, market-capture, outsourcing, and competition in the market place. The results enabled us to understand and place in proper context, how: (a) Indian Ocean merchants adapted to change, (b) Chinese merchants countered imitative production of Celadon and Blue-and-White, and (c) Indian merchants and producers in Western India successfully imitated and gradually took-over production and distribution of Middle Eastern and North African "Islamic" glazed ware.

Oksanen, Eric [231] see Tomka, Steve A.

Okun, Adam (University of New Mexico)

[131] *The Organization of Lithic Technology at Pueblo Bonito, Chaco Canyon, New Mexico*
Recent analysis of 23,000 lithic artifacts from the Pueblo Bonito mounds indicates that over 50 percent of the material originated from distant sources at least 75 km from Chaco Canyon. Analysis has identified specific patterns in the way materials were imported, used, and discarded, providing new information on systems of exchange and technological organization in Chaco Canyon.

[200] *see Ramenofsky, Ann*

Oland, Maxine (Keene State College)

[196] *"These Are Not My Ancestors, but Look What I Found In My Field": Engaging with Non-Descendant Communities in Northern Belize*

In Latin America archaeology is likely to take place where residents identify as mestizo, or as citizens of their nation-states, rather than any Indigenous ethnicity. While such residents may not identify with the people being excavated, they are nonetheless stakeholders in the archaeological process. In this paper I explore some challenges to public archaeology efforts in non-descendant communities, recounting my experiences working in northern Belize villages. Residents of these villages have no heritage connection to the Maya archaeological remains that our project has excavated. Moreover, academic archaeology is not historically structured to include non-descendant community members.

Oldroyd, Ann (University of Exeter)

[256] *Learning at the Gault Site, Texas: Studying Skill-Level in a Non-Refitted Bifacial Assemblage*

The Gault site has an incredible wealth of Clovis flaked stone artefacts, spanning all phases of manufacture. It seems an ideal site to study for evidence of learning and expertise in Clovis point production but attempts to refit the material have failed, meaning that established methodologies cannot be used. Comparing flakes and bifaces from the Gault site to an experimental analog, Ann is developing a methodology to distinguish between different levels of expertise within non-refitted material. Reducing reliance on refitting means many more sites can be investigated and will make it possible to study broad trends on an inter-site basis.

Olinger, Colleen (Otow Station Science Museum), Anastasia Steffen (Valles Caldera National Preserve)

[41] *A Fragile Union of Nature and Culture: Aspen Dendroglyphs in the Valles Caldera National Preserve*

Aspen carvings left by shepherd, logger, hunter, or passer-by contain an information payload. These dendroglyphs reveal family names, hometowns, and when the carver was there; they speak of the carver's occupation, religion, ethnicity, and sometimes their loneliness and dreams. These otherwise unreported narratives of early 20th century mountain communities allow the carvers to speak for themselves. Today, threats to this resource (weathering, elk, fire, disease, and aspen senescence) are steadily reducing the storied arbors. We report on the 1st two seasons of the VCNP volunteer dendroglyph inventory program, including both results to-date and future plans for this productive program.

Oliva, Fernando [138] see Barrientos, Gustavo

O'Mansky, Matt (Youngstown State University), Arthur A. Demarest (Vanderbilt University) and Marc Wolf (GWE Corp.)

[229] *The Classic Maya East-West "Transversal" Exchange Route in Lithics and Exotics: Patterns, Complexities, and Changes in Late Classic Interregional Political Economy*

One of the most important exchange routes of the PreColumbian Maya world, the "transversal" route, runs east to west along the northern base of the Maya highlands at the highland/Peten contact zone. It was a major direct exchange route from the Caribbean to Mexico and across Chiapas. Yet this route, its exchange system, and its many sites have never been studied. Ongoing projects at transversal sites such as Sebol, Raxruja Viejo, La linterna, and others are beginning to explore this route and are revealing its importance in Classic Maya political economy and in the apogees and declines of Maya states.

O'Neil, John [185] see Moore-Shay, Laura

O'Neill, John [185] see Quinn, Colin P.; [185] see Lash, Ryan P.

Ordaz Gonzalez, Patricia

[169] *An Insight on Mesoamerican Glyptics: Seals and Merchants*
We still know very little about glyptics in Mesoamerican archaeology, an issue poorly treated by modern scholars and usually approached

only through the stylistic, iconographic point of view. Most of the existing seals lack archaeological context and the great majority has never been studied. This paper assumes that the ceramic seals are related to trade practices. Based on design studies and paste provenience analysis, the taxonomic groups of glyptic artifacts are able to reveal important data about cultural affiliation, gremial organizations and trade routes.

Oré, Gabriela [18] see Makowski, Krzysztof

Orr, Heather (Western State College of Colorado)

[260] *People of Many Spirits: Dress and Physicality in the Peg-Base Figural Sculptures of Costa Rica and Panama*

The peg-base figural sculptures from the Greater Chiriqui (southern Costa Rican and northern Panama) region of Central America are puzzling artworks. These highly stylized sculptures follow a sophisticated naturalistic tradition of figural sculpture in the region. Moreover, earlier figural sculptures clearly distinguish sex; while the peg-base statues blur sex and gender indicators, such as physical attributes and costuming. The individuals represented in the peg-base sculptures are also frequently shown with zoomorphic and other non-human traits. This paper explores these characteristics of dress and physicality in this group of artworks, and their ideological underpinnings.

[260] Second Chair

Ortman, Scott (ASU/Crow Canyon)

[19] *Population History and Population Movement Between the VEP Study Areas*

One of the primary goals of Phase II of the VEP is to evaluate the nature of the relationship between Pueblo societies of the Mesa Verde region and the Northern Rio Grande. In this paper I develop a preliminary population history for the Phase II Northern Rio Grande study area using data from the New Mexico Cultural Resource Information System (ARMS) and various other compilations in recent publications. I then compare this reconstruction with the population history produced for the Phase I Mesa Verde Region study area to evaluate possible migration scenarios linking the two regions.

[19] Second Organizer

Ortman, Scott [19] see Wolverton, Steve; [235] see Wilshusen, Richard H.

Ortmann, Anthony (Murray State University)

[251] *Comparative Analysis of Chipped Stone Assemblages from the Poverty Point and Jaketown Sites*

The Poverty Point culture of the lower Mississippi River Valley is well-known for the construction of monumental earthworks and the development of long-distance trade networks. One of the most distinctive characteristics of Poverty Point culture, however, is its stone tool tradition. This paper summarizes a preliminary comparative analysis of chipped stone assemblages from excavated contexts at the two largest Poverty Point culture sites, Poverty Point and Jaketown.

Ortmann, Anthony [251] see Arco, Lee J.

Orton, Jayson [182] see Steele, Teresa E.; [182] see Schwartz, Steve

Osborne, Glendee Ane (Lake Mead, NPS and University of Nevada, Las Vegas)

[253] *Settlement and Site Location: A Predictive Model for the Shivwits Plateau, Northwest Arizona*

The development of a predictive model of prehistoric site location and settlement on the Shivwits Plateau yielded new information important to the understanding of changing settlement patterns and land use on the Shivwits Plateau over time. A combination of previously recorded site locations and environmental variables were integrated to establish probable patterns of land use and settlement while focusing on the Virgin Branch of the Ancient Pueblo People (AD 800 to

~AD1225).

Ossa, Alanna

[254] *Economic Organization of a Postclassic Center and its Hinterlands in Veracruz, Mexico*

I analyze residential inventories from the center of Sauce and its hinterlands to address the possible appearance of markets and the structure of exchange during the Middle Postclassic period (AD 1200-1350) in south-central Veracruz, Mexico. Since ancient economies typically had multiple exchange mechanisms, I evaluate how market exchange fits with elite and kin reciprocities using items from 65 residential units. I apply an explicit analytical method to model the mix of social, political, and commercial factors that shape economic organization. This study addresses the extent of Postclassic commercialization in a region distant from the markets known for the larger states.

[254] *First Chair* [254] *Second Organizer*

Oster, Elizabeth (Jemez Mountains Research Center) [152]

Discussant

Ostovich, Marta (Boston University), Amalia Pérez-Juez (Boston University), James Wiseman (Boston University), Kevin Mullen (Boston University) and Ricardo Elia (Boston University)

[34] *Excavation of an Iron Age Talayotic House at Torre d'en Galmes, Menorca*

The site of Torre d'en Galmes is one of the largest Iron Age Talayotic settlements on the island of Menorca, Spain. Since 2002, Boston University has been excavating a domestic structure, Building 2, and the areas surrounding the house in an attempt to understand the house's function and its relation to other structures and the site as a whole. Our excavations have shed light on the changing use of the house, from the Iron Age to the medieval period, as well as on Talayotic architecture and site organization.

Ostovich, Marta [34] *see* Perez-Juez, Amalia

Oswald, Chris (University of Missouri), Christine VanPool (University of Missouri), Jeffrey Ferguson (University of Missouri) and Todd VanPool (University of Missouri)

[200] *Obsidian Source Use on the Northern Casas Grandes Frontier*

The 76 Draw site (located approximately 25 kilometers south of Deming, New Mexico) represents the northernmost expression of the Medio period (AD 1200-1450) Casas Grandes cultural complex. Numerous obsidian artifacts were collected that have been chemically analyzed using portable non-destructive X-ray fluorescence spectroscopy (XRF). This study was undertaken in order to determine whether obsidian procurement further confers the relationship between the 76 Draw site and the core Casas Grandes cultural region located further south in Chihuahua, Mexico.

Otarola-Castillo, Erik [123] *see* Boehm, Andrew

Outecho, André [206] *see* Kahn, Jennifer G.

Özbasaran, Mihriban [259] *see* Mentzer, Susan M.

Pace, Meghan (Indiana University of Pennsylvania)

[233] *Ground Penetrating Radar Investigations of Memorial Park, Indiana County*

Using geophysical survey methods, I investigated Memorial Park in Indiana County, Pennsylvania. According to county records, the land on which Memorial Park sits once belonged to a Lutheran Church, who first used the ground for burials in 1874 and continued to use it as a graveyard until 1875 when the county prohibited any further burials. During this time, burials were often reported as having been moved when, in fact, only tombstones were relocated. The survey I performed was conducted using ground penetrating radar. Through ground truthing I compared my results with magnetometer and electrical resistivity tests conducted in 2006.

[233] *First Chair*

Pacheco, Paul (SUNY-Geneseo)

[244] *Revising the General Model of Ohio Hopewell Settlement Patterns*

The model of Ohio Hopewell settlement patterns promoted by myself, William Dancy, and the late Olaf Prufer is referred to as the Dispersed Sedentary Community Model. This paper has three goals: 1) to briefly explore and discuss recent challenges to the general model, 2) to explore problems created by the imposition of a static spatial model on a dynamic settlement system, and, 3) to propose revisions to our general model that in the process reevaluates the meaning of the term "Ohio Hopewell". Settlement data from near the Liberty Earthworks in the Central Scioto Valley are used as a case study.

[244] *First Organizer*

Pacífico, David

[73] *Residential Architectural Patterns at El Purgatorio, Peru*

This poster presents the results of research carried out during the 2009 summer field season at El Purgatorio in the Casma Valley, Peru as part of the author's doctoral dissertation project. The goal of the research was to observe what kind of architecture is present at the site, to ground-truth patterns identified in satellite photos, and to record details about the architecture. Methodological techniques for studying and recording architecture are presented, as are preliminary interpretations about the meaning of the architectural patterns in El Purgatorio's residential sector. Further questions are raised about this architecture and future research plans are suggested.

Pagan-Jimenez, Jaime R. (EK Consultores en Arqueología)

[116] *The Domestication of the Precolonial Caribbean*

Through the time, the world of plants has been considered as one of the richest natural plots where humans gain caloric/protein benefits for subsistence. In this paper I'm going to show how some Neotropical plants and peoples in the Caribbean islands went beyond this restrictive "energetic input" to jointly create pre-colonial worlds in which plants were, like humans, cultural entities that produced life and established many of the rhythms' of socio-cultural continuity and change. Thus, this was one of the more effective ways used by ancient peoples to domesticate the Caribbean islands since the beginnings of humanity in the region, and also one of the ways that plants used to Caribbeanize people for thousands of years.

Paglione, Teresa (USDA Natural Resources Conservation Service)

[249] *In the Public Interest: Outreach and Partnerships*

Alabama NRCS frequently surpasses the legal requirements of Section 106 compliance with outreach activities and partnerships. Outreach activities include enlisting volunteers to aid in testing sites, co-sponsoring "Project Archaeology" workshops and including archaeology with environmental education workshops. Alabama NRCS has partnered with the Alabama Historical Commission (SHPO) to connect farmers who own historic properties with schools for hands-on learning opportunities and to facilitate the search for deSoto's Mabila on private lands. Most recently, Alabama NRCS has been researching and mapping a ceremonial stone complex recorded on private land in a partnership with the Poarch Creek Indians.

Pailles, Matthew (University of Arizona) and Natalia Martinez (University of Arizona)

[235] *A Discount Rate Approach to Hohokam Agave Cultivation*

The Early Classic (AD 1150-1300) Hohokam people of the Sonoran Desert made significant infrastructural investments to cultivate agave outside of the plant's natural range. Despite these investments, agave cultivation ceased in several sub-regions during the Late Classic (AD 1300-1450). This evaluation of kcal return rates indicates agave should be ranked above most other cultivated resources in Hohokam diets. However, due to the risk inherent to the long maturation period of agave, the resource may have been devalued. The perceived level of risk necessary to cause the cessation of agave cultivation is quantified here by the use of discount rates.

Paine, Richard (University of Utah)

[241] *Using Demographic Models to Test Archaeological Hypotheses: Two Examples from the Classic*

Considers uses of population models to test hypotheses about prehistoric population processes. Presents case examples, testing hypotheses in the literature of Classic Mesoamerica: 1) migration as a cause of skeletal age profile from Teotihuacan; 2) epidemic disease as a cause of the classic Maya collapse, using the skeletal age distribution from Copan as test. Demographic projections test hypotheses two ways: they help assess the ancient demographic setting (Could hypothesized cause create the proposed historical pattern?); and, they produce age-at-death patterns, which can be compared to skeletal series to test whether the hypothesized pattern could have produced observed age-at-death patterns.

Pajuelo-Flores, Eva (University of Illinois At Urbana-Champaign) and Paul Flores Escudero (Universidad Nacional Federico Villareal)

[67] *Nuevos Apuntes Sobre los Talleres Malacologicos en Tumbes, Peru*

Dos talleres malacologicos adicionales a los de Cabeza de Vaca y Ricaplaya han sido hallados en el Departamento de Tumbes, Peru, los cuales demuestran diversidad en la produccion de artefactos malacologicos de la region. El taller de San Francisco fecha al Periodo de Desarrollo Regionales mientras que el taller de Fernandez esta localizado fuera del valle de Tumbes. En esta presentacion se demostrara lo poco que sabemos sobre las tradiciones de produccion de Tumbes, y lo cerca que estamos a perder todo rago de ellas.

Panich, Lee (University of California Berkeley)

[181] *Acculturation, Resistance, Ethnogenesis, Persistence: Rethinking the Legacies of Colonial Entanglements for Indigenous Peoples*

The growing interest of archaeologists in the entanglements between indigenous peoples and European colonialism encourages reflection on the implications of the scholarly interpretation of such encounters for native communities today. In many cases, indigenous identities have persisted despite dramatic changes in land base, social organization, and material culture. By taking a diachronic approach, archaeologists are well suited to situate the continuities and changes of the colonial period within the context of dynamic indigenous cultures and identities. This paper will explore the concept of persistence through the examination of a case study from Mission Santa Catalina, Baja California, Mexico.

Panizza, Cecilia [138] see *Barrientos, Gustavo*

Papalas, Christopher (Northland Research, Inc.)

[149] *Bronze Age Metallurgy in the Eastern Carpathian Basin*
The Eastern Carpathian Basin is one of the earliest metallurgical centers in the world, and has produced spectacular examples of Bronze Age metal objects. However, it has not generated evidence for the hierarchical control of metal production analogous to Bronze Age contexts in the Near East. This general pattern was first noted by Childe. An increasing body of evidence suggests that metalworking in the region was local, small scale, widespread and extremely ad hoc. Here, the technological sequence of Bronze Age metal production will be modeled using data from Maros (EBA), Ottomány (EBA/MBA) and Gyulavarsánd (MBA) contexts. It is hypothesized that the very widespread but small scale nature of prehistoric metallurgy in this region led to wide experimentation and relatively rapid technological change. This general model fits available data, the long antiquity of metalworking in the basin, and the numerous and diverse ore sources found locally.

Pape, W. Kevin (Gray & Pape, Inc.)

[252] *The Millennium Pipeline Project – A Model for Interdisciplinary Partnerships and Integrated Archaeological Data Management*
The Millennium Pipeline Project began in 1997 as a 420-mile corridor

which originated in Canada, crossed Lake Erie, and traversed New York's southern tier. Over 700 marine and terrestrial archaeological resources were identified by multidisciplinary teams linked together through an integrated data management plan. This project serves as a model for how the collaboration between CRM professionals, project managers and agency representatives can culminate in effective resource management, advances in archaeological scholarship, and public benefit through web-based tools for teaching archaeology.

[252] *First Chair*

Pare, Jason (Indiana University of Pennsylvania)

[233] *Ground Penetrating Radar Investigations at the Dividing Ridge Site*

GPR data was collected in Western Pennsylvania at an archaeological site named the Dividing Ridge Site (36WM477). The objective was to try to remotely detect archaeological features by creating maps of the subsurface and then using these maps as a guide to conduct ground truthing investigations to look for Late Woodland features like postmolds, hearths and stockades.

Paris, Elizabeth (University at Albany-SUNY)

[20] *Molding Identity at Mayapan: The Multifaceted Uses of Metal at an Urban Center*

This paper reviews various ways that metal objects were manipulated in economic, social, and ritual contexts. Metal items were local products and were valued consumer goods. Locally produced and imported metal artifacts also played important roles in displaying and reinforcing social status and wealth. Metals were selectively incorporated in offerings and burials at the city, where they were important offerings to the gods and to the deceased. Patterns of use and acquisition of metals at Mayapan are explored in the context of the city's significant political and economic functions.

[20] see *France, Elizabeth L.*

Parish, Ryan (University of Memphis)

[236] *Exploring the Application of Fourier Transform Infrared (FT-IR) Spectroscopy to the Detection of Thermal Alteration in Chert*

It is a well established phenomenon that prehistoric people often heat treated specific varieties of chert in order to alter the mechanical aspects and or coloration of the material. Traditionally researchers identify the use of this technique by the pink to reddish hues that develop on the surficial aspects of the chert debitage. The macroscopic identification of thermal alteration maybe in error as not all chert types display a reddish hue or can occur naturally in these color variations. The following study explores a non-destructive method of detecting the thermal alteration of chert artifacts using Fourier Transform Infrared (FT-IR) spectroscopy.

Parker, Kathryn (Kathryn Parker Archaeobotany)

[140] *The Cultural Context of Plant Materials from a Mound 34 Moorehead Phase Structure*

Evidence of the structural elements and contents from the burned building associated with the summit of Mound 34's primary platform were found redeposited at the junction of the primary mound and surrounding terrace. Initially identified by Perino as "ceremonial fires", this paper discusses the carbonized materials recovered from excavations and flotation samples. The analyses indicate that carbonized plant remains from these areas were dominated by bald cypress, red cedar, white oak and hickory, accompanied by low frequencies of robust grass culms. The material identified clearly reflect burned structural debris with little food-related plant remains present.

Parker Pearson, Mike (University of Sheffield)

[15] *The Stonehenge Factor: Monumental Comparisons and Heritage Concerns*

Prehistoric monuments are a favorite of archaeology's widening public, whose interest ranges from orthodox science to the far reaches of the 'fringe'. The mystery of such edifices is at the heart of their attraction, for public and practitioners alike. Consequently,

access and interpretation, as well as heritage management initiatives, may be hotly contested. This isn't a question of indigenous groups laying claim to heritage but rather the broadest example of people's connectedness with, and quest for meaning in the ancient past. This paper examines some of the heritage management issues surrounding Stonehenge, Monks Mound, and similarly iconic monuments around the world today.

Parkinson, William (Field Museum of Natural History), Attila Gyucha (Field Service for Cultural Heritage, Hungary), Richard Yerkes (Ohio State University)

[61] *The Social Dynamics of Emerging Complexity: A Long-Term Perspective on Middle Range Societies in the Prehistoric Carpathian Basin and the Eastern Woodlands*

While much recent research has emphasized the transition from subsistence systems based on hunting and gathering to more settled agriculture, we examine the long-term social dynamics of emerging complexity in middle-range societies. Using a multi-scalar perspective, we compare the trajectories of Neolithic and Bronze Age societies in the Carpathian Basin with those of Woodland and Late Prehistoric societies in the Eastern Woodlands. By comparing the emergence of social institutions with the organization of households, villages, and regional systems of integration and interaction, we hope to identify patterns of similarity and difference in the emergence of complexity in Temperate Woodland environments.

Parks, Shoshaunna (University of North Carolina - Chapel Hill)

[196] *Public Archaeology: Ethnocentric Conservation or Equitable Promotion of Local Relationships to Heritage?*

Public archaeologies have become a basic measure of ethical practice. The integration of local and descendent communities into archaeological interpretation and management signals its expansion from past-centric to present-centric approaches. Archaeology's true ethical impact, however, remains up for interpretation. What is the purpose of public outreach: to provide local communities with knowledge to form their own conclusions about heritage or to encourage them to value ancient places from Western perspectives? Who benefits from archaeological stewardship in ancient landscapes otherwise ideal for subsistence and extant cultural activities? This paper problematizes the ethical implications of public outreach in the Maya region.

[159] *First Organizer*, [159] *Discussant*

Parr, Christopher (Panamerican Consultants, Inc.)

[24] *Keeping Things Simple: Archaeology, the Army, and "Lil'Benny2.0"*

Since 2006, Fort Benning's cultural resource management staff has been developing a database to administer the installation's archaeological collection. Lacking permanently dedicated staff, Fort Benning requires a system that will easily and with minimal training allow both interns and term employees (contracted on a yearly basis) to accession and track material within the collection. Opting to utilize already-available software rather than purchasing specialized programs (i.e. PastPerfect), this Access-based system, named "Lil'Benny2.0", will allow not only for these necessary operations but also for user-defined queries of the artifacts themselves to better facilitate research of Fort Benning's cultural resources.

Parsons, Timothy (Florida State University)

[149] *Contact and Change: Economic and Social Trajectories on the Great Hungarian Plain ca. 4000-3000 BC*

Economic relationships within and beyond the Carpathian Basin helped shape the cultural tapestry of the Great Hungarian Plain throughout the region's prehistory. Throughout the Copper Age, increasing focus was placed on relationships beyond the Plain and is reflected in shifts in settlement organization and material culture. This paper addresses changes during the Middle and Late Copper Age (ca. 4000-3000 BC) through spatial analysis of settlements and a technological approach to ceramic analysis. The relationships between local and foreign players on the Plain were part of a wider economic system, and set the stage for economic relationships during

the Bronze Age.

Pasacreta, Laura [120] see Gardner, A. Dudley

Pasquariello, Raymond (Gray & Pape, Inc.) [252] Discussant

Pastrana, Alejandro (INAH)

[221] *La Obsidiana en el Mundo Prehispánico Mesoamericano*
En esta ponencia se presentan diversas concepciones de la obsidiana en el mundo prehispánico de la Mesoamérica Central, como una materia prima multifuncional, que participó en todos los ámbitos de la sociedad, en la producción, la guerra y la religión. También se recuperan algunos relatos míticos de su origen, transformación y su relación con importantes deidades.

Patalano, Marisa and Heather Trigg (UMass Boston)

[246] *Paleoethnobotany of Viking-Age Sites in Skagafjörður, Iceland*
The SASS project's extensive sampling for botanical materials has recovered numerous macrobotanicals, including crop, weed, and fruit seeds, from Viking-aged sites in Iceland. Seeds from archaeological deposits are commonly interpreted as food, but some seeds recovered here were found in animal dung, probably burnt for fuel. In this paper we analyze the seeds recovered from the dung and compare them to botanical assemblages from house floors and middens to tease apart various activities that contributed the seeds to the archaeological record. Determining sources helps us understand the Viking's practices including livestock management, building construction, fuel use, and food procurement.

Patch, Shawn (New South Associates, Inc.) and Danny Gregory (New South Associates, Inc.)

[85] *Refining Middle Woodland Site Structure: Ground Penetrating Radar Investigations at Site 40Mi70, Marion County, Tennessee*
This paper discusses the application of GPR technology to archaeological questions related to the Middle Woodland period in Tennessee. GPR data from a 5.1 acre survey at site 40Mi70 indicate a large number of anomalies. Detailed analysis of 2D reflection traces and 3D cubes, coupled with contextual information about Woodland sites, led to the classification of broad feature classes, including possible burials, hearths, pits, house clusters, and shell middens. Based on the spatial distribution of these anomalies, both horizontally and vertically, interpretations were possible regarding Woodland site structure, land use, and subsistence. These interpretations were subsequently tested through field excavations.

Patel, Shankari (University of California Riverside)

[107] *Geography of Belief: The Iconography of Mesoamerican Cave Pilgrimage*

Caves and cenotes comprise the religious topography of many Mesoamerican pilgrimage locales. This paper investigates the iconography associated with pilgrimage and caves as depicted in the International art style which flourished throughout Mesoamerica during the Postclassic. Cave denotations were often metaphors for religious transformation legitimating elites' political or economic power and symbolizing commoners' connection to earth and ancestors. Representation of caves also subverted gender ideologies when combined with portrayals of pilgrimage practices. Through an examination of the religious codices, murals, and artifacts associated with this style, this paper highlights the importance of cave imagery to Mesoamerican Postclassic pilgrimage and religion.

Patton, Paul (The Ohio State University)

[46] *Ceramics in Transition: An evolutionary Appraisal of Food Production, Ceramics, and Sedentism in the Hocking Valley, Ohio*
Throughout the Ohio Valley, archaeologists have used macro-characteristics of pottery (e.g. vessel wall thickness, temper, surface treatment, surface decoration, etc.) to construct typologies for the purpose of seriation sequencing. The focus on stylistic classification has often obscured the functional aspects of pottery, which were produced to meet requirements of food processing, storage, and transport. This paper utilizes an evolutionary approach to explore

variables and their correlation with diet, degrees of sedentism, and other food processing technology. I specifically examine the fitness-related payoffs that resulted in the selection of different pottery attributes throughout the Woodland Period in Ohio's Hocking Valley.

Patton, Paul [30] see *Weaver, Sarah A.*

Pauketat, Timothy (University of Illinois)

[15] *What's the Big Idea? Cahokia's City Plan and Beyond*
Cahokia was redesigned as a city around AD 1050, carrying one important pre-Mississippian element into that design but expanding the design field to encompass a region. Cahokia's plan is cardinal, with variation revealing of formal politico-religious complexities if not also shifting allegiances. Intra-regional complementarities suggest that a large-scale order remains to be fully understood. Sectors of the central complex were probably reserved for religious, secular and elite purposes. At least two outlier complexes built at the same time reveal centrally organized and regionally specialized religious practices that reference solar and lunar events, linked to Cahokia via likely processional avenues.

[15] *First Organizer*, [61] *Discussant*

Pauketat, Timothy [15] see *Emerson, Thomas E.* [15] see *Peterson, Staffan*; [70] see *Boszhardt, Ernie*; [239] see *Richards, John D.*

Paulsen, Brian (Nebraska Wesleyan University)

[168] *Landfill Searches for Human Remains - A Case Study*
A study on landfill searches for human remains in forensic cases was conducted with forty-six cases from throughout the country. Variables investigated were the search length; the time between the crime and the start of the search; time between the crime and the time the body was placed in the landfill. The study also included success rate, target size, search method, and body condition. A successful recovery correlates to search length and a shorter timeframe between the crime and the search start. The targets size whether an adult, child or an object of evidence does not correlate to the search's success.

[69] *Discussant*

Pavao-Zuckerman, Barnet (University of Arizona)

[154] *Missionization and the Transformation of Dietary Practices in the Pimeria Alta*
The introduction of Eurasian livestock to the Pimeria Alta in the 17th-18th centuries transformed the landscape and labor practices of missionized Native peoples, but the impact on Native diet is less clear. In contrast, the diet of Spanish missionaries was dependent on the labor of Native converts. Zooarchaeological remains from Missions San Agustín and Cocóspera indicate that wild game contributed significantly to the diet of Spanish missionaries, despite official negative attitudes toward hunting and the consumption of wild game. In many ways, the transformation of the diet of missionaries may have been more profound than that of the missionized.

Payne, Claudine (Arkansas Archeological Survey)

[115] *The Disposal of Heirlooms and the End of Memory at the Lake Jackson Site*
On the edge of the Mississippian world, at the Lake Jackson site in northwest Florida, copper items appear in abundance in burials from the 13th century into the 15th century. Embossed copper plates were apparently treasured over time and sometimes carefully repaired, only to be disposed of ultimately in burials. Examination of these heirlooms requires careful consideration, buried as they are far distant in time from their manufacture. Burial of heirlooms at Lake Jackson, along with other clues, suggests desperate attempts by their owners to hold onto power and authority in a time of waning connections to the greater Southeast.

Paynter, Robert (UMass Amherst)

[181] *Turning Things into Names and Names into Things: Archaeology and Consequential Entanglements*
The practice of archaeology is the art and science of naming material

processes, then using intricate logical and emotional connections to construct representations of the past. Our namings, and the imagined social worlds of which they are apart, have consequences for the conduct of archaeology and for our entanglements with other social processes. It is this latter situation where our practice of turning things into names engages the insights of Fricker, the task of this symposium. Two cases, the identification of African American sites and the repatriation of human remains, illustrate some of the social consequences of our archaeological practices.

Payton, Susan [166] see *Devlin, Sean*

Peacock, Evan (Mississippi State University) and Barrett Burnworth (Mississippi State University)

[88] *What are We Saving? A Nationwide Review of Phase I Survey Reports*

Arguably the most important principle underlying Cultural Resource Management is that of the representative sample. Although most archaeologists agree that the full range of archaeological phenomena must be investigated/preserved, apparent biases exist in what kinds of phenomena are considered significant. We investigate this disconnect between theory and practice by reviewing a random selection of survey reports from several states. We find a ubiquitous bias against small sites with low artifact density in favor of large, high-artifact-density sites with "intact deposits." The rationales offered for these practices are indefensible in terms of scientific theory, and we offer some suggestions for improvement.

[88] *First Chair*

Peacock, Evan [251] see *Greenlee, Diana M.*

Pearsall, Deborah (University of Missouri) [132] *Discussant*; [97] see *Jones, John G.*

Pechenkina, Ekaterina (Queens College of CUNY) and Wenquan Fan (Henan Provincial Institute of Cultural Relics and Archaeology)

[189] *Health Heterogeneity and Social Stratification during the Eastern Zhou*

The heterogeneity of the funerary contexts of more than 150 Eastern Zhou burials from Henan offers an opportunity to examine the interplay between an individual's social status at death and their health status during life. In a funerary assemblage from Xiyasi (476BC-221BC), the number and quality of grave goods varied considerably, as did the scale of the entombments. Testing for correspondence between a number of standard health markers and selected characteristics of the pertinent funerary contexts, we found that individuals from a few ostentatious burials exhibited greater robusticity and lesser development of DJD than expectable for their age.

Pederson Weinberger, Jennifer (Hopewell Culture NHP) and Kathleen Brady (National Park Service)

[244] *An Examination of Settlement Patterns at Two Sites in the Scioto Valley*

Archaeological research in the Eastern Woodlands, such as conducted by our advisor William Dancey, is greatly focused on the nature of settlement through time. Where and how people lived in Ohio's Scioto Valley changed significantly from the Woodland to Late Prehistoric periods. This presentation examines this shift by comparing data collected from the Hopewell Mound Group and the Voss Mound and Village Site. Both sites were studied using traditional and geophysical techniques to determine the nature and extent of settlement activity with the primary focus on the utility of magnetometry in addressing prehistoric settlement patterns.

[176] *Discussant*

Pederson Weinberger, Jennifer [176] see *Brady, Kathleen*

Pedler, David (Mercyhurst Archaeological Institute), Allen Quinn (Mercyhurst Archaeological Institute), Curtis McCoy

(Mercyhurst Archaeological Institute) and Todd Grote (Allegheny College)

[29] *Distribution of Prehistoric Archaeological Sites in the Pennsylvania Lake Erie Watershed*

Pennsylvania's Lake Erie watershed contains 209 prehistoric archaeological sites registered by the Pennsylvania Historical and Museum Commission. A crucial determinant in site location appears to be proximity to the well-drained, gravelly and sandy soils developed on former Pleistocene beach ridges—predominantly the Whittlesey and Warren III strands. Geographic information systems software was employed to determine the locations of those geologic features in relation to archaeological site locations. Analysis indicates that an overwhelming majority of the watershed's archaeological sites occur within 1 km (0.6 mi) of these features, which collectively account for only about 15 percent of the watershed's total area.

Pedler, David [247] see *Byrnes, Allison M.*

Pedrick, Kathryn (Bureau of Land Management), Connie Stone (Bureau of Land Management)

[75] *Preservation with Partners - the Agua Fria National Monument*

The Agua Fria National Monument celebrates its 10 year anniversary this year. Partnerships have been invaluable in meeting objectives for protection, preservation and understanding of the rich cultural and natural resources of the monument. Learn about partnerships that have enhanced our knowledge of the prehistoric and historic past of this truly wonderful landscape.

Pedrick, Kathy [223] see *Stone, Connie L.*

Peebles, Christopher (Indiana University)

[257] *A Precious Bequest: Version 2.0*

Angel site offers a large, coherent collection of material from more than 15,000m² of excavated area. Over the last two decades these collections have provided the foundation for an open-ended series of new questions about the Angel phase polity. Recent research has begun to address the shortcomings of this collection as an incomplete sample of the site and as an incomplete sample of the archaeological remains as they actually exist in the ground. The goal of this work is to create a more complete representation of the archaeological remains at Angel site and thereby write a more complete prehistory. [115] *Discussant*

Peebles, Giovanna (State of Vermont)

[180] *Vermont's New Internet-Based Archeology "Museum":*

Archeologists as Curators, with Information for Everyone
Vermont's new prototype Internet-based archeology "museum" transforms archeologists into museum "curators," allowing them to quickly build exhibits with various digital data sets now lying in hard drives and technical reports through the Drupal content management system. The Vermont Division for Historic Preservation was awarded a National Endowment for the Humanities Digital Start-up Grant to create a prototype for a sustainable virtual archeology "museum" to pave the way for other states and organizations to develop similar models. The museum invites contributions by all scholars, Indigenous people, and others; social networking tools provide opportunities to share information, to comment and participate.

Peelo, Sarah (University of California Davis)

[6] *(Sometimes) Low Fired Earthenwares, Daily Practice, and Identity: The Production and Reproduction of Indigenous Social Identities in Spanish California*

Archaeological studies of a ceramic type, commonly termed Colonoware, are frequently used to make interpretations about ethnic identity in the colonial New World. This body of research could benefit from a practice theory approach. Archaeological studies of patterned artifact style, described broadly as that seen at all stages of production (termed chaîne opératoire), including use, has the potential to illuminate how social identities were produced and reproduced through daily social practice. An example from the other side of the New World, from Spanish California, far away from

academic circles in which this pottery is usually discussed, may illustrate this argument.

[6] *First Chair*

Peoples, Matt (Arizona State University)

[200] *Social Boundaries and Ceramic Technology across the Cibola Region: AD 1150-1325*

The Cibola region of Arizona and New Mexico spans the gap between two traditionally defined archaeological cultures; Ancestral Pueblo and Mogollon. One distinction used to attribute sites to either of these archaeological constructs is the presence of either grayware or brownware ceramics typically interpreted as Ancestral Pueblo and Mogollon respectively. Recent research in the region has demonstrated that the distinction is not always so clear cut. In this poster, I use methods developed by quantitative morphologists for defining clusters among closely related biological species to explore variation in the technology of ceramic production across the Cibola region from AD 1150 to 1325.

Peles, Ashley (UMass Boston/Gray & Pape, Inc.) and Heather Trigg (UMass Boston)

[154] *Spanish New Mexican Foodways: Making Do in an Often Harsh Environment*

Since the late-16th century, New Mexico was the site of intense interactions among Spanish colonists and Pueblo and Apache peoples. Examinations of artifacts, documents, and archaeobotanical and zooarchaeological remains from 17th- through 19th-century Hispano sites provide an understanding of Hispano foodways and the basis of interactions among the communities in this ethnically diverse region. The 17th-century Hispano cuisine maintained Spanish practices, foods and preparation methods from Mexico, and the incorporation of Puebloan practices. Nineteenth-century Hispano foodways remained much the same. Knowledge of Native peoples' cuisines and relationships with their communities were necessities that provided security in an often harsh environment.

Penny, Dan [153] see *Buckley, Brendan M*

Perales Munguia, Manuel [114] see *Authier, Martin T.;* [138] see *Rutherford, Allen*

Peraza, Carlos [20] see *Milbrath, Susan*

Peraza Lope, Carlos [20] see *Delgado Kú, Pedro*

Pereira, David (Museo Arqueológico de Cochabamba)

[94] *Morris in Cochabamba: In Search of the Economic Foundations of the Inca Empire*

In this session I will present archaeological data pertinent to the Proyecto Arqueológico Cotapachi, directed by Craig Morris and me in the early 90s. The research in Central Valley of Cochabamba was aimed at further understanding the economic infrastructure of Inca economy as this polity settled in a very rich area of the valley. Witness to the grandiose land and ethnic management skills of the Empire is the storage site of Cotapachi, one of the largest complexes in the Inca-dominated Andean region. I will conclude by stressing the fundamental contributions of Craig Morris to our understanding of Inca political economy.

Pereira, Telmo (Universidade do Algarve)

[184] *The Quartzite Technology during the Portuguese Upper Paleolithic*

Flint, quartz and quartzite were the three main raw materials used during the Portuguese Upper Paleolithic of Portugal. Their quantities are usually balanced but several researchers considered quartzite as a secondary choice. It is however present in almost every site from Gravettian to Mesolithic reaching 90% of the collection (average around 35%). This means quartzite was of major importance to Paleolithic communities but, so far, its study has been very limited. This paper will focus on the study of quartzite technology based on attribute analysis and refitting, from a series of Upper Paleolithic

sites from central and southern Portugal.

Peres, Tanya (Middle Tenn State Univ) and Nicholas Dixon (Scottish Trust for Underwater Archaeology)

[34] *Rethinking Iron Age Subsistence at Oakbank Crannog, Loch Tay, Scotland*

Since 1980, archaeologists with the Scottish Trust for Underwater Archaeology have conducted underwater investigations at the Iron Age site of Oakbank Crannog, Loch Tay, Scotland. The cold waters and peat silt of the loch floor are responsible for the unprecedented preservation of organic remains. Recovery of these remains has resulted in a catalogue of specimens and samples that number in the cubic tons and provide valuable information about past lifeways of the crannog inhabitants. Recent analysis of the faunal remains from Oakbank suggest that the inhabitants were raising domestic livestock and hunting wild animals from the nearby Highlands.

[34] *First Chair*

Pérez Arias, Adolfo [47] *see Smith, Scott C.*

Perez Rodriguez, Veronica (Northern Arizona University)

[103] *Sustainability and Agricultural Production in Highland Urban Centers: The Case of Cerro Jazmín, Oaxaca*

I present the results of a survey and mapping project of Cerro Jazmín, an early urban center in the Mixteca Alta, Oaxaca. The results are contextualized in a broader discussion of highland urbanism and urban structure and function through time. I investigate the integration of agricultural areas within the ancient city to assess its agricultural potential and how it compares with estimated population figures. This comparison, along with the results of stratigraphic and soil studies of the surrounding area, are used as proxies to investigate the urban center's overall sustainability and immediate environmental impact throughout the Prehispanic sequence. In Spanish.

[174] *Discussant*

Perez-Juez, Amalia (Boston University) and Marta Ostovich (Boston University)

[34] *Medieval Archaeology in Al-Andalus: The Balearic Island of Menorca under the Muslim Rule*

A wealthy and sophisticated civilization developed on the Iberian Peninsula during the Middle Ages: Al-Andalus. In addition to its rich urban settlements, like Cordoba and Granada, Al-Andalus is famous for its agricultural technology and the exploitation of lands never before cultivated. Associated with these newly irrigated lands, farmers founded new settlements and reoccupied old ruins, as seen on the island of Menorca, Spain. This paper presents the current state of research on the Muslim period of Menorca, as well as our own research at the site of Torre d'en Galmès, where Boston University has excavated Muslim levels from the 13th century.

Perez-Juez, Amalia [34] *see Ostovich, Marta E.;* [82] *see Elia, Ricardo J.*

Perkins, Stephen [171] *see Drass, Richard*

Perlmutter, Ben [72] *see Bender, Susan J.*

Perry, Jennifer (Pomona College)

[127] *The Power of Place: Perspectives from California's Santa Barbara Channel*

The Chumash of the Santa Barbara Channel are best known for their coastal lifestyles, exchange networks, and organizational complexity. Far less attention has been given to interior spaces, terrestrial resources, and ceremonialism. Interweaving archaeological data sets, ethnography, and landscape theory, I consider the significance of place with respect to subsistence, economy, and ritual. Specifically, I compare evidence from the interiors of the mainland and Channel Islands to coastal contexts. I argue that holistic perspectives of the Chumash and other maritime societies require looking beyond coastal settlements and marine subsistence to community margins and

interfaces, interiors, and geographic sources of power.

[127] *First Organizer;* [127] *Second Chair*

Perry, Jennifer [56] *see Hoppa, Kristin M.*

Perry, Lauren (Bureau of Reclamation, Lower Colorado Region)

[211] *Connections Across the River Mountains: From the Colorado River*

Seemingly sparse on cultural, subsistence, and other resources, the River Mountains are smattered with a wide variety of site types that present a view of the cultural diversity moving to and from the lower Colorado River and the Las Vegas Valley. Middle Archaic projectile points, a cached pot, Puebloan, Paiute, and Lower Colorado pottery, rock shelters, a worked bedrock outcrop, a geoglyph, tales of bootlegging trips during Prohibition, and 1930s transmission lines indicate long periods of use by various people. Evaluating the evidence in a broader context provides an understanding of the cultural and periodic links provided by these mountains.

[211] *see Slaughter, Mark C.*

Perry, Michael (University of Notre Dame) and Donna Glowacki (University of Notre Dame)

[200] *Developing Methods for the Application of PIXE Analysis on Mesa Verde Black-on-white Paints at Aztec Ruin, New Mexico*

Using the nondestructive technique of Particle-Induced X-ray Emission (PIXE), we analyze the composition of the paints used on Mesa Verde Black-on-white bowls to examine pottery production and exchange at Aztec Ruin. Previous analysis has shown this technique to be effective in identifying distinct paint recipes, but further refinement of the application is necessary. Here, we use multiple shots per sample to account for compositional variation, which affects the interpretability of the defined compositional groups. We also analyze Beeweed samples in order to link the identified recipes with a specific constituent.

Persons, A. Brooke (University of Alabama)

[116] *Prehistoric Polities and Interaction in Eastern Cuba: A GIS-Based Approach*

Chiefly societies existed in eastern Cuba prior to Contact, yet little is known about the political, social, and economic factors that integrated late Ceramic Age societies in Banes. While settlement patterns are key indicators of such integration, the relationship between chiefly centers and hinterland sites has never been empirically demonstrated in eastern Cuba. Using survey and site file data, this study models polity boundaries and regional integration through a GIS-based cost-distance analysis and proposes a revised site hierarchy. The end result is a more informed rendering of prehistoric settlement and interaction, specifically as reflections of the operation of political economy.

Pertermann, Dana (Texas A&M University)

[144] *The Why and How of Battlefields: Conflict Event Theory, Site Formation Processes, and Geophysical Investigations of the San Jacinto Battleground and Washington-on-the-Brazos, Texas*

Conflict event theory has the potential to completely change how archaeologists investigate battlefield sites. Our methodology incorporates two phases: we develop a classification model of battlefield-related artifacts based on target identification work with the EM63 electromagnetic system at the San Jacinto Battleground, and then test the model at Washington-on-the-Brazos, due to the potential for large quantities of artifacts of similar time-frame as SJB. This data allows us to focus on conflict event theory and site formation processes occurring at SJB.

Pestle, William (Univ. of Illinois Chicago)

[97] *Intra-societal Dietary Variation in Pre-historic Puerto Rico*

Stable isotope analysis provides one of the only means of reconstructing ancient dietary variation at the scale of the individual. Given that dietary differences often inform, and are informed by, a variety of socio-cultural processes, the reconstruction of intra-societal dietary variation provides otherwise unattainable insights into the

inner-workings of past societies. The results of an ongoing stable isotope study of paleodiet at three prehistoric Puerto Rican sites (Paso del Indio, Punta Candelerio, and Tibes) are presented, with dietary variation related to age, sex, and social status as a special focus. Dietary changes related to nascent political intensification are also examined.

[122] *see Torres-Rouff, Christina*

Peter, Duane (Geo-Marine, Inc.)

[180] *Recreating the Box - Thinking from the Inside Out*

Our profession has long realized that its work needs to be of public benefit. While significant progress has been made, we continue the production of dry tomes for our own profession. It is time to rethink what constitutes proper reporting of archaeological investigations. After all, how is a technical report that is never read relevant to the public benefit? Reporting of our work needs to be re-crafted in a manner that provides public benefit. Therefore, I propose a new approach to reporting that involves databases (technical audience), a compliance document (for regulators), and a story format that the public appreciates.

[231] *First Chair*

Peter, Duane [235] *see* Beasley, Virgil; [231] *see* Fullerton, Ben L.;

[231] *see* Wurtz, Michelle D.

Peterson, Christian (University of Hawai'i at Manoa), Robert D. Drennan (University of Pittsburgh) and Xueming Lu (Liaoning Province Institute of Archaeology)

[155] *Hongshan Chiefly Communities in Neolithic NE China*

NE China's Hongshan societies are known for their jade-yielding burials and ceremonial architecture. The most monumental remains are concentrated into a "core zone." Only in regions peripheral to the core zone have residential remains been much investigated. Recent regional settlement survey around the Dongshanzui ceremonial site has begun to document the communities that built and used core zone monuments. Both the core zone and the periphery were organized into several small politically-independent chiefly districts within which ceremonial activities were important integrative forces. District populations were similar in both areas and thus the core zone's greater monumentality is not attributable to greater demographic scale.

Peterson, David and John Dudgeon (Idaho State University)

[175] *The Promise of Social Archaeometry: Building an Anthropologically-Relevant Archaeological Science*

The ongoing expansion of archaeological science benefits archaeology as a whole, but the lack of adequate research funding and scientific preparation of archaeologists in North American anthropology departments is extremely troubling. While some attribute this to the antipathy of many anthropologists to the physical and natural sciences, the solution lies in the formulation of new approaches to questions of anthropological significance, especially those that are unresolved from a traditional anthropological perspective. As this session's papers demonstrate, researchers continue to find innovative applications of scientific technique and method, and new and more compelling understandings of the social.

Peterson, David [175] *First Organizer*; [175] *First Chair*; [175] *see* Dudgeon, John V.

Peterson, Staffan (Indiana University – Bloomington) and Timothy Pauketat (University of Illinois - Urbana Champaign)

[15] *Archaeoastronomy and the Angel-Cahokia Connection*

Detailed geophysical survey at the Angel site, in southwestern Indiana, and excavations at upland settlements in the greater Cahokia region, in southwestern Illinois, have produced a windfall of feature orientation data that point toward an 11th century Angel-Cahokia connection. Important monumental and domestic feature alignments at all of these sites seem to violate Cahokia's cardinal, or solar, grid system. However, we argue from multiple lines of evidence that Cahokia's plan, as laid out in AD 1050, extended beyond the city

into the hinterlands and involved lunar and stellar alignments. In practice, such alignments belie promulgations of specific ancestral narratives that probably also played out as pilgrimages between Cahokia, a series of upland lunar shrines, and far-off Angel.

Peterson, Steven [160] *see* Balzotti, Chris

Peuramaki-Brown, Meaghan (University of Calgary)

[54] *Characterizing the Life Trajectory of a Maya Centre: Three Seasons of Community and Household Archaeology at Buenavista, Belize*

This paper presents initial findings from three seasons of household/community archaeology at the Maya centre of Buenavista, Belize. Work conducted by the Mopan Valley Archaeological Project has focussed on a block of settlement within the site core and aims to characterize the life trajectory of a potential community of daily interaction, as it is reflected through group agency/household identity. While research is ongoing, significant observations can be made at this time and compared with similar community-focussed studies within the region to understand the complex processes of centre and regional development and eventual abandonment through a more intimate lens of perspective.

Pevny, Charlotte (Texas A&M University), Daniel Welch (Texas A&M University), James Wiederhold (Texas A&M University) and Tim Riley (Texas A&M University)

[4] *Usewear and Residue Analyses on Tools from the Lower Pecos Canyonlands: Exploring Tool Function through Experimental Comparison*

Usewear and microscopic residue analyses were conducted on experimental replicates of tools recovered from rockshelters in the Lower Pecos Canyonlands of Texas. In prior studies, analysis of well-preserved, visible residue on unifacial tools was successful in determining which subsistence resources were processed. Building on these studies, as well as ethnohistoric literature from the region, several processing activities were evaluated for usewear patterns and residue buildup. These congruent lines of evidence add strength to inferences regarding tool type and use. Experimental results were compared with archaeological specimens from the Lower Pecos to evaluate correlations between tool form and function.

Pevny, Charlotte [21] *see* Jennings, Thomas A.

Pezzarossi, Guido (Stanford University), Heather Law (University of California-Berkeley) and Ryan Kennedy

[48] *Hoe Cakes and Pickerel: Cooking, Eating, and Entertaining at the Sarah Boston Farmstead*

A synthesis of multiple data sets facilitates the study of cuisine and the overtly social meaning and role of food and entertaining at the Sarah Boston Farmstead; an important 18th-19th century gathering place for the Nipmuc community in Grafton, MA. Ceramics, glass, cutlery, iron kettles, faunal remains, and documentary evidence serve as the disparate datasets for this paper from which a multi-scalar perspective is used to approach cuisine and the meaning of food at the site. Ultimately, archaeology allows the exploration of mediating qualities of food and food's relation to Indigenous community persistence and "residence" in a colonial context.

[48] *Second Chair* [48] *Second Organizer*

Pezzutti, Florencia (Colorado State University), Christopher Fisher (Colorado State University)

[135] *The Steps of Kings: Terraced Landscapes in the Lake Pátzcuaro Basin, Michoacán, México*

Agricultural landscapes are a critical, and often overlooked, component of Mesoamerican statecraft. Recent archaeological investigation within the Lake Pátzcuaro Basin, Mexico, has documented an extensive terraced landscape. Here I explore the function, development, and socio-political implications of this recent work using data derived from full-coverage survey, geoarchaeology, and remote sensing/ARC GIS.

[135] *Third Organizer*

Phillips, Shaun [87] see *Ward, Christine G.*

Phillips, Stephen (University of Washington) and Erik Gjesfeld [113] *Exploring Raw Material Procurement and Network Relationships in the Kuril Islands of Far Eastern Russia*
Social networks created from source provenance studies often trace the movements of artifacts and raw materials across the landscape and among groups of people, but lack depth as explanatory frameworks for human relationships in the past. This paper focuses on using provenance data and other archaeological data sets in conjunction with social network analysis methodologies to explore procurement of key raw materials in an ecologically constrained environment. This research combines quantitative and qualitative network analysis approaches for modeling the evolution of social and economic network relationships in the Kuril Islands of Far Eastern Russia.

Picard, John [255] see *Levine, Mary Ann*

Picha, Paul (State Hist Soc of North Dakota)
[28] *Negotiating North Dakota Archaeology: Agenda, Assent, and Action, 1930-2010*
The National Research Council Archaeological Conference of 1929 set the national agenda (O'Brien and Lyman 2001). At the state level, State Historical Society of North Dakota council member George F. Will aimed to carry out the interdisciplinary agenda in accord with his Harvard University mentor Roland B. Dixon's address in St. Louis. Avocation and archaeology were negotiated over the next seven decades in North Dakota. In retrospect, these twin interdisciplinary pillars--archaeology and ethnohistory--remain the foundational legacy in North Dakota.

Pickering, Robert (Gilcrease Museum/University of Tulsa)
[173] *The Kampsville Model of Public Archaeology*
Kampsville archaeology and education programs in the late 1960's and early 70's, were characterized by creative thinking, resourcefulness, and risk-taking. Education programs reached thousands of people of all ages and very diverse backgrounds by incorporating aspects of numerous learning theories. The personal experiences in archaeology and related scientific fields over five decades are the long-term successes of CAA's education programs. Kampsville alumni are today's supporters of archaeology in its many forms. If archaeology as a discipline is going to thrive, not just survive in the future, it is critical to create passionate and engaged supporters in each new generation.

Picklesimer, John (Gray & Pape, Inc.) and Ruth Myers (Gray & Pape, Inc.)
[252] *Phase I Investigations of the Millennium Pipeline Project: An Archaeological Cross-Section of New York's Southern Tier*
Survey investigations for the Millennium Pipeline provided a linear archaeological cross-section of New York's Southern Tier. The survey extended across 12 counties moving west to east, covering a distance of approximately 676 kilometers, and crossing 5 drainage basins and 5 major physiographic provinces. Now, using GIS technologies, the information garnered during the survey can be analyzed. This paper addresses the success of the predictive model, and summarizes the quality of data obtained during the survey. Finally, information concerning the positioning of human occupations both through time and space will be addressed.

Piehl, Jennifer [77] see *Rich, Michelle E.*; [77] see *Marken, Damien Bernard*

Pike-Tay, Anne (Vassar College) [157] *Discussant*

Pillsbury, Joanne (Dumbarton Oaks) [67] *Discussant*

Pinhasi, Ron [82] see *von Cramon-Taubadel, Noreen*

Pinson, Ariane (University of New Mexico & Central New Mexico CC)

[118] *Diet Breadth, Risk, and the Early Holocene Landscape*
Early Holocene environments in the West transformed rapidly in response to post-glacial changes in climate and hydrology. These changes were spatially and temporally variable, affecting the abundance and permanence of surface water and associated habitats. For some human foragers, this spatio-temporal variation in landscape change may have increased foraging risk and uncertainty that, in turn, would have impacted both diet breadth and patch choice. This paper explores the role of risk and uncertainty in shaping regional subsistence strategies among early Holocene foragers in the Western U.S.

[41] see *Jarman, Nicholas L.*

Piperno, Dolores [151] see *Henry, Amanda G.*

Pirkil, Mary (Center for American Archeology), Beth Shea (Illinois State Museum), and Carey E Tisdal (Tisdal Consulting)
[215] *Evaluating Archeological Education: A Case Study from Kampsville*

The Center for American Archeology's education and public outreach programs introduce students to archeological concepts and the prehistoric cultures and environment of the lower Illinois River valley. Though we reach wide audiences, how much of a lasting impact do their experiences in Kampsville have on their educational and career choices, and their appreciation of prehistory as well as science? This presentation will highlight some of the CAA's efforts and specifically explore the role of professional evaluation and evaluative tools in crafting and improving programs geared for teenage audiences.

Pitblado, Bonnie (Utah State University)

[118] *Seeds of Change or More of the Same? The Early Holocene of Southeastern Idaho*

Of all regions of the American West, southeastern Idaho has among the least-known Pleistocene and Early Holocene archaeological records. Yet of all western regions, it is ecologically unique as a land of fluvial, faunal and floral plenty amidst the true "desert west," and we should not necessarily expect to see evidence for the "seeds of change" of this symposium's title. Because the archaeological record is depauperate, this paper explores the paleoecological record of southeastern Idaho and offers predictions and what few conclusions are possible about the expression of Early Holocene human adaptations in the region.

Pitezal, Todd (University of Arizona)

[40] *Reflections of Northern Mexico from the Journal Kiva*
Kiva: The Journal of Southwestern Anthropology and History is the flagship publication of the Arizona Archaeological and Historical Society. Not only is it the premier regional journal for scholarly publications from the southwest United States it is one of the only English language venues for publishing the archaeology and ethnography of northern Mexico. Our most popular issue of the past two decades was devoted to a contemporary potting community in Chihuahua, Mexico. This poster presentation reflects upon general interests and scholarly contributions made by Kiva authors to the anthropology, ethnography, ethnohistory, history, and archaeology of northern Mexico.

Pitluga, Phyllis

[89] *Andean Milky Way Model Tested on Nasca Zones 6-7-8*
Published conclusions so far on the huge Peruvian ground drawings include Zones 1-5 as a homogenous group of thirty identifiable contour-line figures etched into the landscape. By contrast, the figures at Zones 6 and 8 are created from heaps of stones shaped as two llamas (Zone 6) and an octopus (Zone 8). Zone 7 has contour-line figures but they are not readily identifiable because of car tracks upon them. The hypothesis now tested is that data from Zones 1-5 can predict the celestial associations for Zones 6, 7 and 8 and the identities of the damaged Zone 7 figures.

Pitter, Sharmini (Stanford University) and Richard Evershed (University of Bristol)

[48] *Fatty Acid Residue Analysis of Pottery of Çatalhöyük, Turkey: Understanding the Relationships Between Animal Domestication, Ceramic Technology, Environmental Variation and Changes in Subsistence Practices*

A recent study performed by Evershed et al. (2008) seems to indicate that milking may have taken place in the Near East as early as the seventh millennium BC, a date that pre-dates previous estimates of the secondary products revolution (Sherrat, 1983) by several millennia. By following the methodology utilized in the study performed by Evershed et al. (2008) we hope to contribute a greater understanding of the beginnings of the use of milk products at Çatalhöyük and the cultural and/or technological factors, including the development of pottery on site, that lead to the development of secondary product utilization.

Plager, Sharon [43] see Sayer, Camille

Plimpton, Christine

[92] *Determining Domestic Space Use Continuity Through Syntactic Analysis*

Culture influences the built environment and determines how people utilize the space. If a culture is subjugated by another, would the dominating culture influence the cognition of domestic space use? Egyptian culture is ideal for investigating this question because of its long cultural history consisting of periods of political stability, disintegration, and subjugation by other cultures. This paper presents syntactic analysis performed on house layouts from the Old Kingdom through the twentieth century. Initial analysis suggests that overall spatial configuration of Egyptian dwellings remained consistent, regardless of political dominance.

[92] *First Chair*

Plisson, Hughes [216] see Dubreuil, Laure

Plog, Stephen (University of Virginia) [93] *Discussant* [208] *Discussant*

Plourde, Aimee (CECD, Institute Archaeology UCL) and Elizabeth Arkush (University of Virginia, Charlottesville)

[127] *Landscape and Social Transformation in the Late Intermediate Period, Titicaca Basin*

The Late Intermediate Period (1000-1432 AD) in the south-central Andes saw intense social upheaval and transformation in the wake of the Tiwanaku state's collapse. In Tiwanaku's former heartland, the Titicaca Basin, this period was one of violent competition, environmental hardship, and increasing pastoralism. The landscape was claimed politically in new ways through prominent tombs and shifts in settlement to fortified outposts with strategic viewsheds. Here we interpret transformations in the use and meaning of landscape in the western Titicaca Basin, based on systematic survey surrounding Machu Llaqta, a major Late Intermediate Period center.

Pluckhahn, Thomas [217] see Cordell, Ann S.; [85] see Thompson, Victor D.

Plunger, Elizabeth (University of California, San Diego), Paul Goldstein (University of California, San Diego) and Sarah Baitzel (University of California, San Diego)

[226] *Clothing and Subgroup Identity in Moquegua Tiwanaku: The Burial Garments of the Chen Chen Style M43 and Omo Style M70 Cemeteries at Rio Muerto*

Clothing is often referred to as the "social skin" of humans, and therefore is a critical medium for the expression of social identity. Studies of Omo and Chen Chen style Tiwanaku occupations in the Moquegua valley have shown that these groups were characterized by different socioeconomic lifeways and used slight variations of the Tiwanaku corporate art style in their material culture to define themselves as separate subgroups. The research presented in this paper shows that these communities also used distinct types of

clothing and decorative techniques as means of expressing their unique identities within the Tiwanaku diasporic population.

Plunket, Patricia [136] see Robles-Salmerón, Amparo; [156] see Urunuela, Gabriela

Pocklington, Katy [193] see Eiselt, B. Sunday

Podrug, Emil [9] see Mendusic, Marko; [9] see Tykot, Robert H.; [9] see McClure, Sarah B.

Poister, Nicolas [232] see Marty, Johanna V.

Pokrant, Marie

[179] *The Pride of Red Lion: Abner Crane and the Early Settlement of Warren County, Ohio*

Abner Crane was an early settler in Warren County, Ohio. He founded a village in Clear Creek Township today known as Red Lion. His homestead, Site 33Wa823, is located southeast of the village. Although three generations of the Crane family lived on the site for nearly 143 years, this paper will focus on the occupation of Abner Crane (1812-1848). Features and deposits dating from the time of Abner's tenure reveal how an established New Jersey family adapted to life on the Ohio frontier.

Polanyi, Tamas (Northwestern University)

[149] *Ashes to Ashes, Dust to Dust: Cemeteries, Communities and Socioeconomic Organization in Bronze Age Hungary*

Practices surrounding death and burial are important means of social production and reproduction in human societies. Beyond exposing aspects of religion and cosmologies, mortuary practices help structure and reveal social order of living. My presentation investigates how mortuary practices articulate with socioeconomic and political institutions in emerging complex societies. I examine how ritual and symbolic aspects of mortuary practice were incorporated in the power-building strategies of prestige goods exchange and staple finance. By employing a contextual, regional and diachronic investigation of burial remains, this study focuses on social changes triggered by political and economic transformations in a broader, regional context.

Pollack, David (Kentucky Archaeological Survey) and A. Gwynn Henderson (Kentucky Archaeological Survey)

[105] *Return to Fox Farm: A Unique Middle Ohio Valley Fort Ancient Village*

Encompassing over 40 acres, Fox Farm is the largest Fort Ancient site in the middle Ohio valley. Fieldwork conducted in 2009 documented two plazas, and thick middle (A.D. 1200-1400) and late Fort Ancient (A.D. 1400-1750) midden deposits. This paper explores the possibility that these plazas do not represent temporally distinct villages, but instead, a single very large village. The internal organization of this community and its long occupational history reflect Fox Farm's importance within the regional Fort Ancient settlement system and possibly, the ability of its leaders to overcome the destabilizing nature of tribal factionalism.

[105] *First Chair*

Pool, Christopher (University of Kentucky) [133] *Discussant*

Pool, Michael (Austin Community College)

[235] *Is it or Isn't it?: Evaluating Prehistoric and Recent Rock Alignments*

Dating rock alignments in the American Southwest is notoriously difficult. Evaluating the age of such features is inherently subjective. Doolittle et al. (1993) proposed 13 objective criteria that help evaluate whether rock alignments are recent or prehistoric in age. These criteria provide objective data for the subjective evaluation of the age of rock alignments. This poster uses these characteristics to evaluate the age of a number rock alignments located by a survey of Upper Cameron Creek, southwestern New Mexico.

Pope, Melody and Rex Garniewicz Garniewicz (Indiana State Museum)

[239] *Archaeological Investigations at an Upland Mississippian Village in the White River Valley, East Fork, Dubois County, Indiana*

Upland Mississippian sites located outside of major alluvial valleys in the Midwest and Southeast are considered to be indicators of warfare or other social processes such as factionalism. The different views of upland settlements are considered in this paper in light of a recently documented upland Mississippian Angel Phase site located in the East Fork of the White River in south-central Indiana.

[239] *First Chair*

Popenoe Hatch, Marion (Univ. del Valle, Guate.), Carlos Alvarado (Universidad del Valle Guatemala) and Tomas Barrientos (Universidad del Valle Guatemala)

[229] *New Evidence on Northern Quiche and Western Verapaz Trade Relations*

In 2009 we outlined Preclassic trade routes in Guatemala that connected the South Coast, the Central Highlands, Motagua and Salama valleys and the Rio Negro/Chixoy drainage system, showing they were dominated by Kaminaljuyu and El Porton. In the Early Classic this control was seized by the Solano (Quichean) population. Recent excavations at El Soch indicate that trade routes during the Postclassic led from the northern Quiche area of Nebaj, El Soch and Alta Verapaz northward to the Peten and Mexico and that these were politically separate from those managed by the Quicheans in the Central Highlands of Guatemala.

Popova, Laura (Arizona State University)

[11] *Political Ecology and Pastoral Pasts*

Poverty and famine have often impacted mobile or semi-mobile pastoral groups, especially in Africa, more than other people in society. As development agencies have struggled to understand why these particular groups are so vulnerable, they have looked to political ecology for answers. With its focus on ecological, economic, social and political issues, studies that took this particular theoretical stance often lead to more effective development strategies. In this paper, I will look at the way in which the discoveries development agencies have made about pastoralists in the last 5 years can be used to better illuminate pastoral pasts.

Popper, Virginia (UMass Boston & MIT)

[154] *Comparing Colonial and Mission Neophyte Subsistence Systems in California*

Analyses of plant remains from several Mission period sites in California provide information on the dietary choices made by the colonial settlers and on changes in the subsistence practices of Native populations. This paper examines how the establishment and provisioning of missions and presidios, the introduction of domesticated plant foods, and colonial use of the local environment significantly altered Native foodways while providing a fairly uniform diet for the colonists.

Porcasi, Judith (Cotsen Institute of Archaeology at UCLA)

[31] *Trans-Holocene Exploitation of Cervidae and Leporidae on the California Coast*

Two families of prey animals--the cervidae and the leporidae--provided the majority of terrestrial mammal protein for prehistoric coastal Californians. However, exploitation of the highly-ranked cervidae differed markedly over time and distance, prompting on-going debate as to underlying causes. Here, nine coastal archaeofaunas are combined into coarse-grained patterns of trans-Holocene cervid and comparative small mammal (i.e., leporid) exploitation and flesh yield. While providing new images for the deer-hunting debate, these data reveal that the combined biomass of both these prey families declined linearly over time, marking a conspicuous reduction in nutritional contribution from these keystone resources.

Porraz, Guillaume (University of Tuebingen)

[157] *The Early Upper Palaeolithic in the Mediterranean Arc and the*

Question of the First Modern Human Dispersal into Europe: A Parallel with the Danube Corridor Hypothesis

This paper addresses the issue of the Early Upper Palaeolithic in the Mediterranean Arc and presents a comparison with recent data from the Swabian Jura. The approach taken is to draw a parallel between the Mediterranean Arc and the Danube corridor, the two alternative ways of the diffusion of the first modern humans into Europe. This paper presents new results from the study of the Grotte de l'Observatoire (Principauté de Monaco) and emphasizes the processes of colonisation in that region. Finally, the importance of integrating this perspective during interpretation of the EUP archaeological record is emphasized.

Porter, Benjamin [92] *see Fatkin, Danielle S*

Porter, Benjamin W. [259] *see Adelsberger, Katherine A.*

Potter, Ben (University of Alaska Fairbanks), Barbara Crass (University of Wisconsin Oshkosh), Charles Holmes (University of Alaska Anchorage) and Phoebe Gilbert (University of Alaska Fairbanks)

[27] *Recent Excavations at the Mead Site, a Late Pleistocene Multi-component Site in Central Alaska*

We report on extensive 2009 excavations at the Mead site, a multi-component site in central Alaska. This is the first year of a multi-year project at this site, one of the oldest in Northwest North America (dating to ~11600 RCYBP). Geoarchaeological context is described, including inferences on site formation and site disturbance. Well preserved faunal remains and distinct activity areas are also evaluated.

Potter, Ben A. [27] *see Coffman, Sam*

Powell, Gina (Missouri State University, Springfield, Missouri)

[38] *Missouri Avocational Archaeologists: A Small Sample of Great Work*

Like most other states, Missouri owes a debt to its avocational archaeologists for providing time, research, data, and support for furthering the knowledge of the state's past. In this poster, the author will present and honor the work of several avocational researchers, including one of the co-founders of the Council of Affiliated Societies, the late Earl Lubensky. The work of other individuals will be recognized, especially the tireless officers of local chapters of the Missouri Archaeological Society.

[172] *see Lopinot, Neal H.*

Powers, James [215] *see Berg Vogel, Michelle A.*

Powis, Terry (Kennesaw State University), Gyles Iannone (Trent University), Jaime Awe (Belize Institute of Archaeology), James Garber (Texas State University) and Paul Healy (Trent University)

[54] *The Function of Middle Preclassic Maya Greenstone Triangulates: A Unique Mesoamerican Groundstone Artifact Type*

Over the past twenty years our understanding of the Middle Preclassic period has become much clearer through archaeological investigations at a number of sites located in the Upper Belize River Valley region of the eastern Maya Lowlands. While the picture of Middle Preclassic Maya life, including their material culture, has sharpened, there are aspects that remain uninvestigated. One artifact type, identified as greenstone triangulates, has been found at several Belize Valley sites and in a variety of contexts. Although very few of these multi-faceted, polished groundstone items have been recovered, little research has focused on their distribution and function in the archaeological record. An evaluation of these items from primary contexts provides data for determining how they were used in daily social and/or ritual activities throughout the lowlands. Comparative data from other regions of Mesoamerica are also discussed.

[54] *First Chair*

Pozorski, Shelia and Thomas Pozorski (University of Texas-Pan

American)

[114] *Insult to Reverence: The Evolution of Prehistoric Intrusiveness within the Casma Valley of Peru*

When the powerful Sechin Polity dominated the Casma Valley during the Initial Period, the probable administrative center was the immense Sechin Alto main mound which measures 300 x 250 x 35 m tall. When the polity declined at 1400 B.C., a rival culture built an administrative structure on the mound to demonstrate its newly-achieved dominance. Subsequent Early Horizon inhabitants of the mound more deliberately destroyed friezes, leveled the mound top, and recycled construction materials to build a small village there. Later reoccupations through the Late Intermediate Period consisted of small structures and intrusive burials that reflect reverence for the mound's former importance.

Pozorski, Shelia [96] see *Pozorski, Thomas*

Pozorski, Thomas (University of Texas-Pan American) and Shelia Pozorski (University of Texas-Pan American)

[96] *New World Bureaucracy at 1500 B.C.: Evidence from the Casma Valley of Peru*

During the Initial Period (2100-1000 B.C.), the Sechin Polity built large, planned settlements, including the largest structure in the New World. A powerful bureaucracy was critical to the establishment and perpetuation of this polity over a 500-year span. A special modular architectural form with rounded corners, wall niches, and bar closures functioned as an emblem of authority. This "square-room unit" occurs repeatedly in administrative contexts that monitored craft production, intersite movement, and food production. A recurrent element in the local iconography shows this power symbol, and stamp and cylinder seals from Sechin Polity sites may also reflect bureaucratic activities.

Pozorski, Thomas [114] see *Pozorski, Shelia*

Prange, Erica (College of Wooster)

[73] *Learners in Clay: Experimental Studies in Eastern Woodland Ceramic Manufacture*

American archaeological studies, primarily in the southwest, provide evidence of child potters through quantitative data derived from ridge breadth measurements of fingerprints. Others attribute specific aesthetic values to products of child potters, associating lesser quality vessels with psychologically defined steps of cognitive development. I relate these studies to the archaeological record of Woodland ceramics from Ohio and Pennsylvania. I assess these methods and speculate how prehistoric learning of ceramic production may have taken place based on experimental recreating of the manufacturing process, archaeological data from several sites, and historical learning behaviors.

Pratt, Darrin (University Press of Colorado) [93] *Discussant*

Prentice, Andrea (University of Western Ontario), Christine White (University of Western Ontario), Elizabeth Graham (University College London) and Elizabeth Webb (University of Western Ontario)

[5] *Stable Isotope Dendroclimatology using Tropical Trees and Wooden Artefacts from Lamanai, Belize*

In this paper, we investigate the potential use of tropical wood to reconstruct short term climate change using variations in the oxygen-isotope composition of cellulose from modern trees at Lamanai, Belize, and a 5th century wooden object from the same site. Although many trees in tropical regions do not produce visible rings, the maximum isotope-values of cellulose were sensitive to rainfall amount in the dry season and correlated with maximum oxygen-isotope values of precipitation each year. Isotopic ring-widths were correlated with temperature, rainfall amount and annual variations in oxygen-isotope values of cellulose.

Prentiss, Anna (University of Montana) and Thomas Foor (The University of Montana)

[39] *Defining Emergent Inequality at the Bridge River Site, British*

Columbia: A Multivariate Statistical Approach

The development of status inequality is a fundamental topic of research in Pacific Northwest archaeology. Ethnographic house-groups relied upon production of surplus goods with which to compete socially through establishment of debt relationships within and between villages. Reconstruction of the history of this system has often proved illusory given the complexities of household archaeology in the region. Research at the Bridge River site offers the region's best opportunity to date for the study of social evolution. In this paper we develop a multivariate statistical analysis of data drawn from features, artifacts and faunal remains to test alternative models of emergent inequality.

[39] First Organizer; [39] First Chair

Prentiss, Anna [39] see *Cail, Hannah S.*; **[39]** see *Smith, Lisa M [203]* see *Yang, Dongya*

Pretola, John (Gray & Pape, Inc.), Donald Miller (Gray & Pape, Inc.) and Jacob Freedman (Gray & Pape, Inc.)

[252] *Four Orange County Phase III Sites: New Prehistoric and Contact Period Insights from the Walkkill Valley, New York*

This investigation provides new data concerning ancient Native American utilization, from Late Archaic through Contact Period, of the Black Dirt region, Walkkill Valley, New York. Four sites (ORA-9931, 9936, 9942, and 0550) yielded over 13,575 artifacts and 131 cultural features. Analysis of lithic, ecofactual, seriological, geoarchaeological and AMS dating results enable conclusions about site distributions, function, material culture and human adaptations for cultures in this region. This evidence demonstrates the importance to ancient Native Americans of these wetlands, ecotones, and upland forests where a diverse flora and fauna could sustain human groups living and moving through the Walkkill Valley.

Price, Gypsy (University of Florida), John Krigbaum (University of Florida) and Paul Thacker (Wake Forest University)

[214] *Inferring Sociopolitics Using Faunal Stable Isotope Data from the Late Woodland Donnaha Site*

The Donnaha site is a Late Woodland settlement located in the north central piedmont region of North Carolina. Here we report bone collagen and bone apatite light stable isotope values derived from a sample of recovered fauna. Bone collagen values for d13C and d15N range from -23.6 to -13.9‰ and 2.1 to 9.5‰ respectively, while bone apatite values range for d13C range from -6.9 to -0.9‰. Results contribute to taxon-specific regional paleoecology and offer a requisite baseline for planned human paleodiet studies. Specifically, our data inform on the distribution and management of exploited foodstuffs in the central piedmont.

Price, T Douglas (University of Wisconsin-Madison) [61]

Discussant [126] Discussant [9] Discussant; [214] see Burton, James H.

Priewe, Sascha (The British Museum / Oxford University) [95]

Discussant

Procopiou, Haris (University of Paris I (Panthéon-Sorbonne))

[216] *Grinding Tools in Bronze Age Crete: Raw Material, Manufacture, and Use*

This paper aims to reconstruct production and use of grinding tools during the 2nd millennium in Bronze Age Crete. During this period of emergence of the Minoan palaces, the raw materials employed and techniques of manufacture and use are diversified. In order to interpret this diversity we will apply an interdisciplinary approach which combines petrographical and use-wear analysis. The macroscopic analysis will be completed by a multi-scale quantitative analysis of surfaces by interferometry. By interpreting different technical choices, this methodology allows evaluation of the cognitive processes of prehistoric craftsmen.

[216] see *Roux, Valentine*

Procter, Rebecca (NM State Parks/RedVine Conslts.)

[222] *What Are We Saying and Who is Listening? Archaeology's Public Audience and the Impact of Social Change*
 Agency archaeologists spend at least some part of each day conveying the message of what they do and why they do it to a non-specialist audience. Politics, regulatory changes, and theoretical changes in academic disciplines have significant effects on the message. It has long been acknowledged that telling about the past is affected by recent history, but there has not been much explicit examination of how this occurs. This paper examines recent history and social change as they have affected communication about archaeology to a variety of audiences in New Mexico and beyond in the last thirty years.

Proebsting, Eric (Thomas Jefferson's Poplar Forest), Jack Gary (Thomas Jefferson's Poplar Forest) and Lori Lee (Thomas Jefferson's Poplar Forest)

[26] *Presenting Historical Archaeology with Digital Technologies at Thomas Jefferson's Poplar Forest*
 Recent efforts are conveying the results of archaeological research at Thomas Jefferson's Poplar Forest through a variety of new digital technologies. These include an interactive web based exhibit; podcasts that help explain the process of archaeological discovery; and collaborations with universities to create other archaeologically-based online and onsite interpretive aids. A new GPS-based self-guided tour has also been developed for visitors to use as they walk the Poplar Forest grounds. These handheld receivers are able to display a wide variety of audio and visual information about the written, archaeological, and environmental history of the property.

Proue, Molly (Northern Land Use Research, Inc.), Chris Wooley (Chumis Cultural Resource Services), Jason Rogers (Alaska Maritima), Joshua Reuther (Northern Land Use Research, Inc.) and Justin Hays (Northern Land Use Research, Inc.)

[27] *The Aangeyarwak Site: Recent Excavations Along the Kuskokwim River, Southwest Alaska*
 The Aangeyarwak site is a 2000-year-old site located along the middle Kuskokwim River near the village of Crooked Creek. The site is unique for the time period and location due to its large areal extent with several housepits and well-dated occupations spanning a period of at least 500 years. During the 2009 field season, Chumis Cultural Resource Services and Northern Land Use Research, funded by Donlin Creek, LLC, worked with community members to excavate one housepit. Over 300 artifacts were uncovered, including lithics and well-preserved organic materials. Work also included extensive three-dimensional mapping of intra-site microtopography and landform morphology.

Prufer, Keith (University of New Mexico) and Adam Nazaroff (Stanford University)

[148] *Applications of PXRf Spectrometry in Cave Research*
 Innovations in Portable Energy Dispersive X-ray Fluorescence (PXRf) spectrometry have increased the applications of PXRf for archaeological and geological research into the chemical characterization of geologic materials. We report on potential uses of PXRf in cave research for mineralogical characterization of speleothems. PXRf is a nondestructive technique for in-situ analysis, potentially allowing for sampling multiple speleothem surfaces without damaging fragile cave contexts. Our infield study of strontium values of stalagmites was done to test PXRf for differentiating calcite and aragonite used in paleoclimate reconstruction. Discerning these minerals on surfaces of stalagmites allows for targeted sampling of speleothems, maximizing cave conservation.

Prufer, Keith [230] see McCoy, Mark D.; [148] see Moyes, Holley

Pruitt, Tera (University of Cambridge)

[106] *Knowledge Production and Local Communities: Socio-politics and Alternative Accounts of the Past*
 In the field of archaeology, the production of knowledge is a particularly contested space when local community needs mix with standards of archaeological practice. This paper presents an unusual

and very contested case of archaeological practice in Visoko, Bosnia. It addresses how a case of alternative archaeology, popularly called The Bosnian Pyramids, is satisfying very important socio-political needs in a small community, and it addresses very important concerns and issues this situation raises about professional archaeological practice—both in our own excavation and publicity practices, as well as how we engage with local communities and worldwide alternative archaeological communities.

Pugh, Daniel (University of Michigan)

[111] *Plains Oneota Ceramics - The Swantek Collection*
 Excavations at the Swantek Site in central Nebraska produced an unexpected collection of ceramics with obvious affinities to Oneota wares from the Midwest. Plains Oneota sites are known elsewhere, particularly the White Rock sites of northern Kansas. The ceramics from the Swantek site provide an interesting point of comparison between Midwestern Oneota and White Rock collections. This paper provides a brief description of this new collection and some thoughts on the implications for Late Prehistoric social interaction between Midwestern and Plains peoples.

Puleston, Cedric [197] see Culleton, Brendan J.

Pullen, Daniel (Florida State University) and Thomas Tartaron (The University of Pennsylvania)

[101] *Enlarging Small Worlds: The Saronic Gulf and Mycenaean State Expansion*
 The "small world" of the Saronic Gulf in southern Greece, dominated by Kolonna during the Aegean Middle Bronze Age (c. 2000–1600 BC), effectively prevented development of hierarchical social-political systems in the surrounding coastal regions. During the Late Bronze Age (c. 1600–1070 BC) Mycenae expanded its power, when it came into conflict with Kolonna in the coastal regions. The Saronic Harbors Archaeological Research Project is documenting this contested periphery through fieldwork at the walled harbor town of Korphos: Kalamianos and its surrounding region. Kalamianos represents a substantial investment by Mycenae in its bid to control the Saronic Gulf.

[101] First Chair

Pullins, Stevan (Cultural Resource Analysts, Inc.)

[150] *Ceramics, Chronology, and Cultural Affiliation at a Late Woodland Site in the Southern Sny Bottom, Illinois*
 Site 11PK1791/1792 is located in west-central Illinois, situated in an agricultural field that is part of a system of low-gradient coalescing alluvial fans against the eastern bluffs of the Mississippi River in south-central Pike County. Three geographically distinct subsets of cultural phases have been identified in the vicinity, including the Sny Bottom along the Mississippi river, the lower Illinois river valley, and the Salt River valley in northeast Missouri. Ceramic fragments recovered from a Late Woodland activity area, including some with adhering residue, were examined using multiple analytical approaches to address issues of cultural affiliation and chronology in the region.

Punke, Michele

[108] *Geoarchaeological Investigations of Repeated Site Occupation in the Uplands of the Portland Basin following the Catastrophic Late Pleistocene Missoula Floods*
 Archaeological deposits discovered at three sites near Vancouver, Washington, challenge the accepted view of the depositional history of the Portland Basin since the late Pleistocene. Deep, intact archaeological features and deposits dating to as early as ca. 8,000 cal yr BP were discovered during archaeological excavations and construction monitoring. The archaeological and stratigraphic records found at the sites suggest that sediment accumulation in some upland areas of the region did not cease after the deposition of late Pleistocene catastrophic flood sediments, but continued well into the Holocene in the form of eolian deposition.

Punzo, Jose (Instituto Nacional de Antropología e Historia) and David Arturo Muñiz García (INAH)

[242] *Mountains, Caves and Rivers as Social Agents in the Rituals of the Chalchihuitan People, in the Guadiana Valley, Durango, Mexico*
The construction of the prehispanic town of La Ferrería/Schroeder, toward the year 600 AD, was executed in a planned way, guiding their main buildings toward relating important landscape markers, as the sunrise, rivers, caves or outstanding mountains in the landscape that surrounded it. It was from that way, like the chalchihuitan people with the orientation of their buildings integrated, the elements of the landscape into their rituals in an active way, making the lively and inanimate beings participated of their social world, structuring them mutually.

Punzo, Jose [242] First Organizer

Punzo Díaz, José Luis [57] see Muñiz, David A.

Purcell, David (Logan Simpson Design, Inc)

[253] *The Past Through Tomorrow: Results of the 1962-1964 Arizona State Route 213 Highway Salvage Project*

The Museum of Northern Arizona excavated 16 prehistoric sites along Arizona State Route 213 (now 389) between Fredonia and Colorado City in 1962-1964. Representing nearly one-third of the sites excavated on the Arizona Strip, the sites exhibit nearly the complete Basketmaker-Virgin Anasazi culture history for the region. Previously available only in a Bureau of Land Management overview, the project results were finally published last year. The basic patterns of settlement, architecture, and ceramic production are described, with data gaps identified that could be addressed by a new project along the same route - the Lake Powell Pipeline.

Purdy, Barbara [26] see Church, Krista

Puseman, Kathryn (Paleo Research Institute), Linda Scott Cummings (PaleoResearch Institute) and Melissa Logan (PaleoResearch Institute)

[4] *Organic Residues: Prehistoric Signatures and Curation Contamination*

Organic cooking residues are, by their very nature, complex. Experiments cooking individual and mixed foods provide greater understanding of these signatures using FTIR. Identifying bonds between molecules identifies compounds (fats/lipids, protein, carbohydrates) present. Comparing signatures from prehistoric/historic objects to reference material (single plants or animals) helps to identify elements of diet. Our modern technology also introduces potential for contamination of various forms. Curation labeling (essential for identification) and storage can both add signatures. White out, fingernail polish, PVA, plastics, adhesive labels, paper, aluminum foil, and especially petroleum-based compounds, are reviewed for their potential to mask original food signatures.

[10] Discussant

Pye, Jeremy (University of Florida)

[232] *Faithful To Their Trust, Even Unto Death: Expressions of Identity and Change in an Oklahoma Cemetery Landscape*

In March of 2007, a documentation survey was conducted at Diamond Cemetery, Stephens County, Oklahoma. One hundred and fifty-seven grave markers and monuments were recorded during this survey, ranging from formal stone monuments to homemade markers. Individual grave markers often reflect temporal stylistic variation. Furthermore, size differences may directly relate to supposed economic wealth. Beyond these traditional concerns, however, analysis of gravestone symbolism and epitaphs shed light on belief systems, backgrounds and social identities of individuals and families through time. More importantly, analyses of this type allow for inquiry into the cultural structure of the community as a whole.

Qin, Ling (Peking University), Guoping Sun (Zhejiang Provincial Institute of Archaeology, Hangzhou, China), Hui Zhao (School of Archaeology and Museology, Peking University, Beijing, China) and Shin'ichi Nakamura (Kanazawa University, Japan)

[155] *From Foragers to Farmers: Current Results from Tianluoshan project in Zhejiang Province*

Tianluoshan is a Neolithic site of the local Hemudu-culture (4900-3800BC) in Zhejiang Province. The site has a high water table that has preserved water-logged remains in most of the early contexts. Peking University collaborated with the Zhejiang Institute and various specialists from the UK, Japan, and China to investigate the eco-remains from this site for the past three years (2005-2008). The current results include data from fauna, plants, geoarchaeological studies and isotope analysis. This project provides the new evidence for understanding the subsistence of mid Neolithic in south China, especially for Hemudu culture.

Quesenberry, Melisa

[99] *The Virgin of the Cenote: Yucatán's Goddess in the Well*

Since the early Colonial period the Christian Virgin has been an important part of religious culture in Mexico's Yucatán. Often the Virgin retains conceptual vestiges of an association with pre-Hispanic Maya female deities. This paper surveys colonial structures dedicated to the Virgin which are uniquely situated adjacent to cenotes. Conceived as portals to the underworld, the dwelling place of the rain gods and the moon goddess, the cenote also became a locus of power for the Christian Virgin as well. Ethnohistoric sources and modern folklore reveal that the association of the Virgin with the cenote is both pervasive and persistent.

Quinlan, Angus (Nevada Rock Art Foundation)

[211] *Southern Nevada Rock Art as Symbolic Culture*

Rock art is perhaps the most visible record of the social and economic lives of southern Nevada's prehistoric and ethnohistoric peoples. Rock art's enduring cultural resonance is a property of the social memories expressed and reproduced through its visual imagery and associated actions performed at rock art locales. This paper explores a social archaeology of identity through southern Nevada rock art and the role that its rock art can play in the study of the ideological presentation of past social and cultural identities.

Quinn, Allen [29] see Pedler, David

Quinn, Colin (University of Michigan), Benjamin Thebaudeau (Trinity College Dublin), David Harrison, Ian Kuijt (University of Notre Dame) and Ian Kuijt (University College Dublin)

[185] *Hunting Down Huts: Multi-Scalar Approaches to Residential Sites on Inis Airc, Co. Galway, Ireland*

Features observed during pedestrian survey are not always what they seem, and this is problematic for archaeologists on the west coast of Ireland where systematic subsurface survey and testing has been significantly underutilized and existing chronological and typological classifications are often held as fact, not as testable hypotheses. Using a combination of aerial photography, surface survey, GPS mapping, subsurface geophysical survey, and test excavations, this project has explored an exposed residential landscape with a multiplicity of approaches and a level of resolution that is often not utilized in an Irish context. Based on the case study of Inis Airc, Co. Galway, it is possible to evaluate archaeological techniques and challenge existing assumptions about landscape use on the west coast of Ireland.

Quinn, Rhonda (Loyola University Chicago), Sharyn Jones (University of Alabama at Birmingham) and Susan C. Antón (New York University)

[206] *Detecting Cannibalism with Stable Isotopes?*

Stable isotopic (d13C, d15N) analysis has been used extensively to infer aspects of past human diet from skeletal material in archaeological contexts. Few studies have applied the methods to questions of cannibalism, and of those, all have focused on potentially cannibalized individuals. Clearly, very few modern analogs

of known cannibals are available to test the sensitivity of stable isotopic systems. However, by reconstructing diet categories from known food resources in a specific environment, a cannibalistic isotopic signature may be constrained. In this study, we model a cannibalistic diet category for Holocene Pacific Islanders and identify specific conditions of isotopic equifinality.

Quiroz Ennis, Rossana (Posgrado del IIA / FFyL / UNAM)

[89] *Eclipses and the Southern Cross at Cañada de la Virgen*
Cañada de la Virgen Archaeological site belongs to the Sunken Patio Tradition of El Bajío cultural region and presents an orientation of 80° - 85°. No sites along the basin of Rio Laja, such like this, have been reported with pyramids at the south of the platforms. The pattern suggests an alignment with the Southern Cross and an eclipse cycle count. Ethnohistoric records describe the importance of the Southern Cross and eclipse phenomena for the Otomi peoples.

Quitmyer, Irvy (Florida Museum of Natural History) and Douglas S. Jones (Florida Museum of Natural History - University of Florida)

[250] *Annual Incremental Shell Growth Patterns in Hard Clams (Mercenaria spp.) from St. Catherines Island, Georgia: A Record of Seasonal and Anthropogenic Impact on Zooarchaeological Resources*

Hard clams grow by mantle mediated precipitation of calcium carbonate forming a predictable alternating pattern of light (white) and dark (gray) shell increments that correspond to seasonal changes in water temperature. This research applies sclerochronological techniques to document the annual periodicity of shell formation in modern populations of hard clams from St. Catherines Island and applies this model to Archaic period zooarchaeological assemblages. The data show that hard clams were intensively harvested during the late winter and spring seasons at the St. Catherines Island Shell Ring and the McQueens Shell Ring.

[250] *Third Organizer*

Quitmyer, Irvy R. [250] see Jones, Douglas S.

Raab, Annabel (University of Denver)

[99] *Evidence of a pan-Mesoamerican Oracle/Priestess Complex*
This paper offers evidence of a gender-specific, pan-Mesoamerican oracle/priestess complex among mature, elite women using Classic/Postclassic period evidence. Archaeological and textual data reveals that these women were elaborately interred with grave goods marking them as weavers, as well as connecting them with both bloodletting and cosmological events. The evidence used varies both temporally and geographically; however the methodology used will both uncover and link the patterns of this pan-Mesoamerican complex. Glyphic and figural representations of Lady K'ab'al Xook from the Maya site of Yaxchilán will serve as a basis for the argument.

Raczek, Teresa (University of New Hampshire)

[189] *Chai and Collaboration: Making Agreements in Northwest India*
Collaboration with local and descendent communities has been an important aspect of archaeological research for the past few decades. The benefits and challenges of such work have been well discussed and debated in New World contexts; however, such conversations in the Old World have taken place on a more limited scale. Just as the impact of colonialism and the history of archaeology has differed between the New and Old worlds, so too has the method and meaning of archaeological collaboration. This paper will evaluate some of the unique factors that influence collaborative excavation in South Asia, focusing on recent work at the site of Chatrikhera in Rajasthan, India.

Raff, Jennifer [239] see Kaestle, Frederika A.

Rafferty, Janet (Mississippi State University)

[219] *Protohistoric to Historic in a Part of the Choctaw Homeland:*

Settlement Continuity or Replacement?

Archaeological survey of ca. 20,000 acres in central Mississippi has recorded about 55 sites with Protohistoric components, marked by aboriginal ceramics tempered with shell, mixed shell-and-grog and grog. Some have combed or incised decorations associated with Choctaw populations. About 50 early-to-mid nineteenth century components also have been found, identified by mostly English-made transfer-printed and edge-decorated pearlware (four assemblages) and whiteware. Only five sites show evidence of both Protohistoric and early Historic occupation. Hypotheses postulating rapid technological change among the Choctaws or replacement of their settlements by those of incomers are tested.

[219] *First Chair*

Rafferty, Kevin (College of Southern Nevada)

[211] *The Valley of Fire in Southern Nevada Prehistory*

Known locally as an incredibly rich archaeological region, Valley of Fire has received only limited archaeological attention since Mark Harrington first examined the area in the 1930s. Since 2003 the College of Southern Nevada has conducted four intensive block surveys in the area. Cultural resources recorded by the surveys include lithic scatters, rockshelters and overhangs, campsites with associated petroglyph panels, and historic remains including one of the earliest historic roads in southern Nevada. The research has extended our knowledge concerning both the time depth and the intensity of occupation of the region.

Rafferty, Sean (University At Albany, SUNY)

[55] *Analysis of Tobacco Pipe Residues through GC/MS and Raman Microscopy*

This paper presents ongoing research into the identification of tobacco residues in ancient smoking pipes. Two techniques have been used so far: gas chromatography/mass spectroscopy (GC/MS), and Raman microscopy. GC/MS has been used successfully in the past by the author to identify ancient tobacco residues, and the results of this round of analysis support prior research. Raman microscopy, which has the advantage of working on dry samples without solvents, was not successful. It appears that combustion products overwhelm any useful signal that would identify the substance smoked. We are pursuing the use of Raman in non-combusted samples.

Railey, Jim (SWCA - Albuquerque) and Matthew Bandy (SWCA Environmental Consultants)

[87] *Demography and Subsistence-Settlement Trends in the Permian Basin Study Area, Southeastern New Mexico*

Radiocarbon dates from the BLM's Permian Basin study area (southeastern New Mexico) show a dramatic spike beginning in very late pre-ceramic times, peaking in the Early Formative period, and then dropping off again in the Late Formative. The trend line is consistent with numbers and distributions of diagnostic artifacts. These data suggest settlement and subsistence patterns may be similar to those evidenced in the Fort Bliss area to the west, where extensive land use by mobile hunter-gatherers was followed by a shift to farming and more concentrated occupation in better-watered riverine areas and alluvial-fan margins of the desert floor.

[87] *First Chair [87] Second Organizer*

Railey, Jim A. [87] see Turnbow, Christopher A.

Raina, Shagun [163] see Troccoli, Ruth

Rakita, Gordon (University of North Florida)

[158] *Mortuary Rituals, Performance, and Social Identity in the Post-Chacoan World of the Middle San Juan Region*

In the past, archaeologically recovered mortuary remains were viewed as statically reflecting the deceased's social identity. Recent approaches have emphasized the dynamic aspect of mortuary rituals as venues for social negotiations by the living. From this perspective, mortuary practices constitute a performative arena for the adjudication of power and identity. In this paper, I examine burials

from Middle San Juan Region that date to the post-Chacoan period. These mortuary remains have the potential to shed light on migrations, identity and ethnicity, and social re-organization in the aftermath of the Chaco phenomena.

Rakita, Gordon [235] see *Van Pool, Todd L.*

Ramenofsky, Ann (University of New Mexico) and Adam Okun (University of New Mexico)

[200] *OHD and Glaze-Paint Ceramics: Multiple Chronologies, One Solution*

Because of the criticisms of obsidian hydration dating (OHD) as inexact and unreliable especially at an interval scale, it tends to be under-utilized, especially where other temporally sensitive materials are available. This study evaluates the validity of this assumption, exploring the use of multiple relative chronologies to establish temporal patterns of discard across different artifact classes. Over 500 pieces of obsidian from surface middens at San Marcos Pueblo were sourced by Jeff Ferguson of the University of Missouri Research Reactor (MURR) and hydration values calculated for 320. The resulting relative OHD chronology of midden use is compared to that of glaze-paint ceramics.

Ramirez, Jose-Miguel [68] see *Matisoo-Smith, Lisa*

Ramirez, Nicole (California State University, Chico) and Frank Bayham (California State University, Chico)

[120] *Human Impacts on Prehistoric Fauna in the Great Basin: an Evaluation of the Lagomorph Index*

Species of Lagomorphs, rabbits (*Sylvilagus* spp.) and hares (*Lepus* spp.), occupy specific niches in an environment. The Lagomorph Index has been used to examine changes in Lagomorph species in xeric environments such as the Southwestern United States. A change in the proportionate representation of these species may serve as a barometer for environmental change due to human impacts which can result in resource depression. In this paper we evaluate the Lagomorph Index from the Karlo Site (CA-LAS-7) in the Great Basin in order to evaluate the validity of Lagomorph species as an indicator of resource depression in the local environment.

Ramirez, Roberto [258] see *Kittel, Michelle*

Ramirez-Aliaga, Jose (Universidad de Valparaiso, Chile)

[68] *Transpacific contact between Polynesia and southern Chile: More than Chicken Bones*

A transpacific contact between Polynesia and the prehispanic Mapuche people has been sustained over a list of artefactual and linguistic data, for 200 years. Polynesian DNA on chicken bones from southern Chile has become the first hard evidence for a real contact, but the old hypothesis has new and better support. Some human osteological data suggest the contact was more than a brief encounter, the only way to explain some oral history, linguistics and material culture, since adoption and adaptation by a local population requires a long term relationship. An assessment of the old and new data involves a reconsideration of the diffusion process and contact situations, which supports a new hypothesis for the transportation of Southamerican products back to Polynesia.

Ramon, Gabriel [18] see *McEwan, Colin*

Randall, Asa (University of Florida) and Kenneth E. Sassaman (University of Florida)

[61] *Monumental Transformations on Both Sides of the Atlantic* Hunter-gatherers of the eastern United States and farmers in northern Europe are credited with some of the earliest monumental constructions in the world. Underwritten by fundamentally different subsistence economies, monuments in both cases emerged as transformations in root metaphors of community in which habitation spaces were converted to commemorative landmarks. Our examination of the long-term histories of capping and renewal events at Archaic shell mounds in northeast Florida suggests that they

provided a means to interfere with the reorganization of regional populations. We explore how similar histories on both sides of the Atlantic register contingent social and cultural change.

Randklev, Charles (University of North Texas), Benjamin Lundeen (University of North Texas), James Kennedy (University of North Texas) and Steve Wolverton (University of North Texas)

[235] *A Late Holocene Freshwater Mussel (Family Unionidae) Assemblage from the West Fork of the Trinity River, Texas*

A recent excavation of an archeological site near the West Fork (41TR198) of the Trinity River in North Texas has produced freshwater bivalve (Family Unionidae) remains that date to the late Holocene. In total, 2,500 valves representing a minimum of 15 species were identified, including several species thought not to have occurred in the upper Trinity River drainage in modern times. A comparison of the West Fork late Holocene mussel fauna with historical and modern survey data documents dramatic changes in community composition corresponding to modern human impacts in this drainage.

Ranere, Anthony (Temple University) and Patricia Hansell (Temple University)

[136] *Landscape Management in Prehistoric Central Pacific Panama: the First 12,000 years*

Archaeological and paleoenvironmental data from Central Panama document an increased focus on cultivation coinciding with the introduction of maize into the region 7600 years ago. This initiated a process of deforestation and erosion that ultimately created a landscape no longer capable of sustaining the shifting cultivation strategy that produced it. The abrupt shift in land use patterns beginning around 2200 BP was accompanied by the establishment of large agricultural villages and increased social complexity— indicated by status differentiation, craft specialization and long-distance exchange—a sharp contrast to the small-scale self-sufficient hamlets that characterized the region for the previous 5000 years.

Rankin, Adrienne (Goldwater Range East, Luke AFB), Joseph Joaquin (Tohono O'odham Nation) and Lorraine Eiler (Hia C'ed O'odham)

[164] *Landscapes of Knowledge: Native American Perspectives and Integrated Natural-Cultural Resource Management on the Barry M Goldwater Range East*

Management and stewardship of the environment on the Barry M Goldwater Range East is essential to sustaining military training. Various Native American tribes have a living connection to this landscape; their cultural and spiritual values are based on the interwoven nature of plants, animals, physical aspects of the landscape, and people. Natural water sources, important for the management of game animals, are sacred places. Likewise, some "Endangered Species" may be good to eat and "common species" may be culturally significant as indicated by oral histories. Identification and incorporation of this knowledge is critical for research and integrated natural-cultural resource management.

Rapp Py-Daniel, Anne (Universidade de Sao Paulo)

[142] *What do the burials belonging to the Paredão phase tell us about the Hatahara site?*

The Hatahara site, in Iranduba, Amazonas/Brazil, has been studied since 1999 and was at the heart of many papers (Machado, 2005; Neves & Petersen, 2006; Tamanaha, 2006; Rebellato, 2007; Lima, 2008). This is an exceptional site because of: size, content, number of occupations, earth mounds and conservation of organic material. In the last few years an analysis has been conducted on the burials belonging to the Paredão phase (7th to 13th century) found in this site with the purpose of obtaining information on the life of past societies, funerary rituals and the context in which they were inserted.

Rapu, Sergio [62] see *Nicolay, Scott*

Rasic, Jeff [79] see *Shirar, Scott*

Rasmussen, Barbara (Preservation Alliance of West Virginia)[167] *The Blair Mountain Task Force*

The Battle of Blair Mountain was the largest and most serious civil insurrection in the United States' history, besides the Civil War. The preservation community needs to embrace sites of historic conflict to fully interpret all of America's history. Archaeology is a critical tool in advancing this cause. Politics has played a major role in the mountain's future. Listed as one of the National Trust's Eleven Most Endangered Places in 2006, the site was finally listed on the National Register in March of 2009, only to face an immediate challenge from the coal industry.

Rauch, Rebecca (The University of Utah Press) [93] *Discussant***Rautman, Alison (Michigan State University) [174] *Discussant***[110] *First Organizer*; [110] *First Chair*; [110] *see Chamberlin, Matthew A.***Raviele, Maria (Michigan State University)**[4] *The Implications for Maize Microbotanical Taphonomy via Experimental and Archaeological Residues*

A series of experimental residues utilizing various forms of maize (*Zea mays*) were created to assess the presence/absence of maize microbotanical indicators, primarily starch and phytoliths. The results of these analyses are presented here in conjunction with preliminary data derived from archaeological ceramic residues from sites located within the Saginaw River valley of Michigan. The results from these experimental residues have implications for the interpretation of archaeological residues in regards to how people were utilizing maize over the past two millennia.

[4] *First Organizer*; [55] *First Chair***Ray, Jack (Missouri State University), Neal Lopinot (Missouri State University) and Rolfe Mandel (University of Kansas)**[146] *Late Paleoindian Occupations at the Big Eddy and Alley Mill sites in Southern Missouri*

Recent investigations at the Big Eddy site in southwest Missouri and the Alley Mill site in southeast Missouri have provided new insights into Late Paleoindian occupations in the northern Ozarks region. Dalton and San Patrice points from buried horizons at each site indicate contemporaneity of Dalton and San Patrice occupations. Most tools were made from local Ozarks cherts. However, several tools and preforms made from exotic cherts from multiple regions, but primarily to the south, suggest frequent contact and perhaps exchange of material goods and ideas between groups considered native (Dalton) and extralocal (San Patrice) to the northern Ozarks.

Ray, Molly [235] *see Tyson, Erin R.*Read, Dwight [6] *see Merrill, Michael L.***Reber, Eleanora (UNC Wilmington)**[55] *Absorbed Residue Analysis from the George Reeves site (11S650), an Emergent Mississippian Blufftop Settlement*

Absorbed residue analysis was performed on a variety of forms of pottery from the early Emergent Mississippian component at the George Reeves site. The results of this analysis are compared in terms of vessel form and function and similarity to residues at neighboring sites. The increasing depth of data on absorbed pottery residue analysis allows a more thorough understanding of the relationship between pottery form and function in the Emergent Mississippian of the American Bottom, and of a pattern of what might be termed 'consistent changes' in the Emergent Mississippian diet.

Reckner, Paul (Binghamton University (SUNY))[167] *Why We Dig, Why We Remember, Why We Struggle (And Who is This "We" Anyway?): Reflections on the Encounter Between Archaeologists and the Local Labor Community of Southern Colorado* The Colorado Coal Field War Archaeology Project was conceived as an effort to place archaeological research at the service of working class interests while producing meaningful historical interpretations

regarding the little known coal miners' strike of 1913-14. The project spanned five field seasons, numerous public programs, and continues through ongoing research. In the course of this work, project staff and members of the local community encountered a wide array of conflicts, successes, and disappointments. This paper reflects on the challenges of doing engaged archaeology within a working-class community, and assesses the project in terms of contributing meaningfully to local labor struggles.

Reddy, Seetha (Statistical Research, Inc)[154] *Feeding the Ancestors: Insights into Native American Mortuary Offerings during Spanish Contact in coastal Southern California* Mortuary contexts offer unique insights into the cultural perceptions of the relationship between food, ritual and ideology. Well-preserved macrobotanical remains from recent excavations along Santa Monica Bay in coastal Southern California have provided an extraordinary opportunity to study the role of food in Mission period Native American mourning practices. Analysis has revealed valuable insight into the selective use of wild and domesticated plants in ritual contexts, and how offering size varied between species and which plants were offered together in baskets. This research is paving a path to address ritualization of foods and cultural food preferences among complex hunter-gatherer populations.[154] *Second Chair* [154] *Second Organizer*; [154] *see Douglass, John G.***Redmond, Brian (Cleveland Mus Nat History)**[46] *Long-Distance Acquisition of Marine Shell and Cotton Fiber by Late Woodland Societies of Northern Ohio: New Evidence from the Danbury Site*

Recent salvage excavations at the Danbury site (33OT16), a Late Woodland (ca. A.D. 700-1100) warm-season base camp on the south shore of Lake Erie, document the intensive exploitation of aquatic faunas, incipient maize horticulture, and the creation of a large corporate cemetery. Whelk shell ornaments accompanying certain burials indicate long-distance interaction with southeastern societies as well as the development of elite social statuses. Preserved fibers of cotton (*Gossypium* spp.) in the dental calculus of several elite individuals appear to represent previously unrecognized social or economic linkages with distant societies of the Southwest or northern Mexico.

[46] *First Chair***Reed, Charles, Kyle Bocinsky (Washington State University) and Ryan Lash (University of Notre Dame)**[235] *The Archaeology of Morefield Canyon: An Ancestral Puebloan "Community Center"*

Combining in-field ceramic analysis with GPS mobile mapping technology, survey conducted in Mesa Verde National Park during the Village Ecodynamics Project II (VEPII) has allowed for the most detailed reconstruction of the occupational history of the Ancestral Puebloan community at Morefield Canyon yet possible. Evidence for a central locus of social life focused on a concentration of public architecture (including a plaza and two great kivas) on a finger ridge on the canyon's eastern slope, when combined with the new evidence for extensive communal investment in hydrological control, suggests that Morefield was a locale of considerable significance within the canyon.

Reed, Charles [19] *see Glowacki, Donna M.*Reed, Denné N. [129] *see Barr, W. Andrew*Reed, Kelly [9] *see Moore, Andrew M T***Reed, Paul (Center for Desert Arch.) and James Snead (George Mason University)**[110] *Explaining the Burn at Salmon Pueblo: Warfare or Ritual??*

Like many late Puebloan sites across the San Juan Basin, Salmon Pueblo in the Middle San Juan region was burned coincident with its abandonment in the AD 1280s. Prior explanations of burning at

Salmon have focused on warfare and other conflict-related behaviors. Ritual destruction by fleeing inhabitants has also been considered. Missing from this equation, however, is a comprehensive review of burning at Salmon across its 200-year history. In this paper, we undertake such a review in the course of exploring Salmon's complicated relationship with fire.

Reed, William (USDA - Forest Service) [130] Discussant

Reeder, Leslie (Southern Methodist University), Jon Erlandson (University of Oregon) and Torben Rick (National Museum of Natural History, Smithsonian Institution)

[224] *Archaeology of the Younger Dryas on the Pacific Coast of North America*

From coastal Alaska to Baja California, the Younger Dryas was one component of dynamic Late Pleistocene environmental changes. Sea level rise, alpine glaciation, isostatic uplift, and tectonism created rapid ecological shifts for ancient coastal peoples, and pose significant challenges to archaeologists. We examine how the Younger Dryas fits into these larger-scale environmental changes, including its differential impact on marine and terrestrial ecosystems and the adaptations of people foraging or living in those environments. We also explore some innovative approaches to finding early coastal archaeological sites, and consider the impact of a fragmentary archaeological record on interpretations of Younger Dryas adaptations.

Reeder, Robert

[172] *Missouri's Avenue of the Saints Archaeological Project and Tribal Consultation*

The fifteen years of archaeological investigations associated with Missouri's Avenue of the Saints project witnessed substantial changes in the Missouri Department of Transportation's approach to tribal consultation. While initial archaeological surveys were conducted without tribal input, final archaeological excavations began only after extensive consultation with several Tribes. By the completion of all archaeological fieldwork, tribal consultation included project visits by tribal representatives, development of a protocol for the discovery of human remains that resulted in some remains being avoided by highway redesigns, some preserved in place, and others excavated and removed, and agreement on a plan to rebury excavated remains.

Regnier, Amanda (University of Oklahoma), Patrick Livingood (University of Oklahoma) and Scott Hammerstedt (University of Oklahoma)

[59] *WPA Archaeology in Southeastern Oklahoma: The Clement and McDonald Sites*

The WPA maintained an active archaeology program in Oklahoma, primarily in the eastern half of the state. A portion of these investigations were focused on Caddo sites in southeastern Oklahoma, particularly in McCurtain County. However, except for river basin salvage work in the 1960s, little other work has been done and basic archaeological issues remain unresolved. In this paper we discuss 1940-1941 WPA excavations at two Caddo mound sites, Clement and McDonald, that have the potential to refine Caddo archaeology as it is known in eastern Oklahoma.

Reichardt, Stephen (Maya Research Program), Samantha Krause (Florida State University)

[91] *A GIS Approach to Managing Data from the Ancient Maya Civilization of Blue Creek*

Investigations at Blue Creek have resulted in large amounts of data in multiple repositories. To manage these data sets, we are developing a Geographic Information System using the ERSI ArcView platform. GIS consists of computer-based, spatially oriented systems that link locations and attributes to locations so they can be displayed on maps and allow users to archive, access, and analyze data and will become the archival standard for MRP. The first phase will involve the design, construction, and implementation of the database. The second phase involves on-line 'user friendly' interfaces to disseminate

information to scholars, researchers, teaching and informal learners.

Reid, J (University of Arizona) and Stephanie Whittlesey

[158] *Mortuary Ritual at Grasshopper Pueblo*

Grasshopper Pueblo was a large, 14th century pueblo with a multiethnic, coresident population consisting of Mogollon peoples from several areas of east-central Arizona and an enclave of Anasazi residents. Mortuary rituals at Grasshopper therefore provide a unique opportunity to examine treatment of the dead in a multiethnic setting. Differences between ethnic groups in mortuary ritual hint at ideological and cosmological distinctions, and the special treatment accorded ritual practitioners underscores the importance of belief systems in structuring daily life as well as mortuary ritual.

[50] Discussant [208] Second Organizer

Reifschneider, Meredith (University of Arizona)

[101] *Storage and Exchange in Bronze Age Greece*

This paper provides a quantitative comparison between storage facilities at Late Bronze Age Mycenaean sites. Total storage areas and volumetric capacities of storage containers indicate that centralization of agricultural resources at political centers was limited and that generally they were not financed solely on the basis of accumulation and distribution of staple goods. Textual and archaeological data indicate that besides supplying dependent and semi-dependent workers with payments, Mycenaean elites were largely concerned with conspicuous consumption and feasting involving certain kinds and quantities of agricultural commodities. Thus, agricultural commodities were utilized in a variety of manners dependent on varying social contexts.

Reilly, Frank (Texas State University)

[15] *Visualizing Primordial Creation: Art and Ideology at the Mississippian Site of Cahokia*

In the last two decades many scholars have investigated artistic production at the archaeological site of Cahokia. These investigations have demonstrated that Cahokia was the point of origin for a major pre-Columbian art style as well as for a crafting tradition that remains unequalled in eastern North America. Cahokia's craftsmen created objects ritually animated to embodied specific aspects of the sacred while visualizing several episodes of creation narratives. These objects not only portrayed specific cosmological viewpoints, but also served to define Cahokia as the center of a physical realm and the locus of extraphysical reality.

[115] First Chair [115] Second Organizer

Reilly, Kent [115] see Freidel, David A; [260] see Lytle, Whitney C.

Reinhardt, Eduard [29] see Sonnenburg, Elizabeth P.

Reinhart, David [24] see Cannon, Mike

Reininghaus, Lee (University of Montana)

[39] *An Inter-household Analysis of the Proto-historic Occupation at the Bridge River Site*

Recent investigations at the Bridge River site in British Columbia have yielded data ideal for testing the correlation between housepit size and household wealth. Household size has been suggested as a means for interpretation of status and wealth, implied from the ethnographies of the early 1900's, and utilized in recent research. To test the validity of this assumption I propose an analysis of the late component of the site emphasizing variability in several data sets between small and large house pits. This study provides a foundation for the testing of ethnographic claims and their implications for site analysis.

Reitz, Elizabeth (University of Georgia), Bruce M. Saul (Augusta State University), G. Denise Carroll (Georgia Southern University) and Jason W. Moak (Southeastern Natural Sciences Academy)

[250] *Interpreting Seasonality from Modern and Archaeology Fishes on the Georgia Coast*

Estuarine fishes are a mixture of endemic, marine, and freshwater species attracted to estuaries as nursery grounds and feeding areas. The potential of estuaries to fill these roles varies seasonally, raising the possibility that fishes can serve as proxies for seasonal patterning in human fishing strategies. In this study, the spatial and seasonal habits of modern and archaeological fishes are evaluated for evidence of seasonal fishing strategies. We find that fishing was highly selective and that some fish taxa in the archaeological record are not markedly seasonal, limiting the value of simple fish identifications to provide seasonal fishing information.

Reitz, Elizabeth [250] First Organizer; [250] First Chair

Reitze, William (University of Arizona)

[72] *Paleoindian Archaeology of the Estancia Basin, New Mexico*
This study presents initial results of reanalysis of surface collections made during the 1950s 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. Reinvestigation in the Estancia Basin allows for the reassessment of models of Paleoindian mobility, landscape use, and site distributions in a poorly understood region between the Southern High Plains and Middle Rio Grande Valley.

Renaud, Susan [3] Discussant

Reuther, Joshua [27] see Proue, Molly

Reynolds, Cerisa R. [234] see Hill, Matthew E.

Rhode, David (Desert Research Institute)

[118] *Early Holocene Subsistence Change in the Bonneville Basin, western North America*

During the early Holocene in the Bonneville Basin, hunter-gatherer subsistence practices underwent substantial diversification, as documented by changes in land use patterns, subsistence-oriented technology including groundstone and certain forms of basketry and stone tools, and archaeofloral and archaeofaunal evidence. Bonneville Estates Rockshelter, on the western margin of the Great Salt Lake Desert, provides a long sequence of episodic occupations that document subsistence change across the Early Holocene. Major trends in subsistence diversification are illustrated using results of archaeofloral analyses from Bonneville Estates, and from the archaeology of other localities in the Bonneville Basin.

Rhudy, Chelsey [258] see Hall, Lauren

Riccio, Jordan (American University) and Daniel Sayers (American University)

[225] *Discursive Murmurs, Diaphanous Pasts, and the Archaeological: Indigenous Americans and the Coming to Be of the Diasporic World of the Great Dismal Swamp after 1550*

The Great Dismal Swamp of Virginia and North Carolina has a Diasporic past that has only recently been explored through archaeological fieldwork. The social and political-economic histories of the swamp are poorly understood in contemporary discourses. Archaeological work has shown that the swamp was home to Indigenous Americans, African American maroons, and African American enslaved canal company workers who formed thriving communities. We will discuss and explore what archaeology can do to develop a more specific knowledge of the Indigenous contributions to that Diasporic world and inform the broader, often semi-muted, discourses on Indigenous histories in the Tidewater.

Rice, Erin (University of Illinois at Chicago) and Adam M. Longman

[186] *New Perceptions of Near Eastern Trade and Social Interaction for the Pre-Pottery Neolithic Using GIS*

There has been much discussion recently of the interaction between groups of the PPN in the Near East; however, while we understood that the topography of a region will influence the movement of peoples and goods, there has not been much exploration of this topic. This research uses GIS technology to map potential trade routes using topographic data of the Near East, with a particular focus on the South-Central Levant. The analysis tests a least-cost path model and examines the implications in terms of social exchange over subsequent temporal periods of the PPN.

Rice, Glen (Rio Salado Archaeology) [100] Discussant

Rich, Kelley (University of Alabama) and C. Fred T. Andrus (University of Alabama)

[5] *Oxygen Isotope Geochemistry of the Freshwater "Jute" Snail (*Pachychilus* sp.): A Potential Ultra-local Seasonal Paleoclimate Proxy for Tropical Mesoamerica*

This paper will present preliminary results of an oxygen isotope study of the freshwater gastropod *Pachychilus* sp., a fully aquatic gastropod from Mesoamerica. In areas where there is minimal seasonal temperature variation, such as Mesoamerica, it would be expected that $\delta^{18}O$ variation observed in shell carbonate would be a reflection of seasonal variation in rainfall and evaporation, rather than seasonal temperature variation. It is hoped that this snail may serve as a proxy to assess past drought in direct archaeological context, thus giving insight into the role of drought in Maya prehistory.

Rich, Michelle (Southern Methodist University) and Jennifer Piehl

[77] *The Unknown Ruler: Burial 39 at El Peru-Waka', Peten, Guatemala*

The tomb of an epigraphically-unidentified early Late Classic ruler of El Peru-Waka' was discovered and excavated in 2006, and data presented at the 2009 SAA addressed evidence for ancient re-entry of the chamber. This complementary presentation highlights the wide array of scientific material analyses carried out thus far on the rich and varied remains that are considered components of the original mortuary assemblage. Results will be briefly reviewed, synthesized and interpreted to tease out meaning embedded in the contents of the burial chamber, thus providing a glimpse into the life history and treatment at death of this unknown royal personage.

Richards, John (University of Wisconsin – Milwaukee), Seth Schneider (University of Wisconsin- Milwaukee) and Timothy Pauketat (University of Illinois at Champaign-Urbana)
[239] *Comparative Analysis of Red-and-White Pottery from Cahokia and Aztalan*

Excavations into the sub-Mound 51 borrow pit at Cahokia by Charles Baeris produced a treasure trove of floral and faunal remains, fossil insects, tools, magicoreligious items, and ceramics including a collection of red-and-white seed jars and bowls. Although red-and-white pottery is well known from the lower Mississippi River valley, such pottery is rare at Cahokia or elsewhere in the region. Currently, the only examples of red-and-white Mississippian pottery in the upper Mississippi River Valley come from the southeast Wisconsin site of Aztalan. This paper provides a morphometric and compositional analysis of the Aztalan and Cahokian assemblages.

Richards, John [70] see Jeske, Robert J.

Richards, Julian (University of York Archaeology Data Service)

[24] *Digging into Data: Text Mining of Archaeological Grey Literature*
On both sides of the Atlantic field projects undertaken in the course of commercial development generates vast numbers of reports that together constitute the unpublished 'grey literature' whose inaccessibility has long been an issue of major concern. Indexing this corpus by hand would be an expensive and time consuming process. The Archaeotools project has used Natural Language Processing to index the grey literature against standardised word lists for place names, period names, monument and artefact types. This paper will discuss the issues raised and the potential of NLP to automate the

process of archaeological information extraction.

[93] *Discussant* [12] *Discussant*

Richards, Michael [82] *see Nehlich, Olaf*

Richards, Michael P. [39] *see Cail, Hannah S.*

Richards, Patricia (Univ of Wisconsin-Milwaukee)

[124] *The Milwaukee County Institution Grounds Cemetery collection at University of Wisconsin-Milwaukee*

In May of 2008, volunteer staff and students from the University of Wisconsin-Milwaukee's Archaeological Research Laboratory moved close to 1600 individual human remains and associated artifacts to UWM. Subsequent efforts have focused on identification and purchase of archivally sound containers and bags in order to stabilize and permanently curate the collection. This poster documents the effort to identify, stabilize, inventory and curate the collection by involving interested graduate students and undergraduates participating in various UWM sponsored undergraduate research initiatives.

[124] *First Organizer*, [124] *First Chair*

Richards-Rissetto, Heather [24] *see Van Der Elst, Judith*

Richbow, Linsey (New Mexico State University) and Jordan Comanche (Mescalero Apache Reservation)

[42] *Voice and Vestige: The Record and Perspectives of the Inhabitants of the Black Range in the Late 1880's*

In 2009 students from different parts of the U.S. participated in the investigation of Hermosa, NM, a historic town established in the 1880's, and its surrounding environments. Of ongoing interest has been locating camp and battle sites pertaining to the Apache Wars that only ended in 1886 with Geronimo's surrender. Using information from historical documents, the archaeological record, and oral history, this poster will explore the attitudes of the Apache, the displaced occupants of the Black Range, as well as those of the Buffalo Soldiers and others who engaged the Apaches in order to protect this and other frontier settlements.

Richerson, Peter (UC Davis), Charles Efferson (University of Zurich) and Robert Boyd (University of California--Los Angeles)

[197] *Using a Lotka-Volterra Approach to Modeling Socioeconomic Change*

The Lotka-Volterra equations are an extension of logistic population growth to multi-species dynamics. We consider a system in which humans subsist on a renewable resource using a particular technology. The technology evolves in a density dependent fashion. Large populations accumulate technology and small ones lose it. Simple mathematical realizations of this system exhibit a great variety of behavior. The technology-population size feedback contains the potential for both slow and explosive growth of human populations, their resource, and technology ("intensification"). If the human population can invest in their biotic resource ("agriculture"), slow or rapid growth can be sustained for a substantial period. On the other hand, when human populations are large, and investments in the resource are limited or impossible ("foraging"), boom and bust dynamics occur. We argue that the Lotka-Volterra approach to modeling human systems is a promising approach to human ecology and evolution.

Richman, Rebecca [122] *see Kuzminsky, Susan C.*

Richter, Daniel (Max Planck Institute)

[157] *The Chronostratigraphy of the Swabian early Upper Palaeolithic*

The Swabian early Upper Palaeolithic is represented by several well defined stratigraphies, which were shown to be intact by micromorphological analysis. However, radiocarbon dating fails to show a coherent pattern. The data indicates the presence of problems in radiocarbon dating beyond simple contamination, which is especially evident for samples from Middle Palaeolithic layers which are clearly separated from the Upper Palaeolithic by sterile clay

sediments. Other chronometric dating methods are therefore required for historical interpretation. As a consequence the chronostratigraphy of the Swabian Alb is still mainly based on the stratigraphical succession of sediments and industries.

Rick, Torben (Smithsonian Institution) and Todd Braje (Humboldt State University)

[16] *What is Natural and What is Anthropogenic in the Historical Ecology of California's Channel Islands?*

Archaeologists have long dealt with equifinality, when fragmentary archaeological data provide patterns that seemingly result from multiple processes. With the rise of historical ecology and investigations into ancient human environmental impacts, zooarchaeologists, paleobotanists, and other researchers are again confronting issues of equifinality when interpreting changes in faunal, floral, and other data in light of human subsistence activities, climate change, and other events. Here we provide archaeological examples from our recent work on California's Channel Islands, demonstrating some challenges in interpreting long-term environmental and archaeological data, and strategies for delineating patterns which result from natural and/or anthropogenic processes.

Rick, Torben [224] *see Reeder, Leslie A.*; [56] *see Braje, Todd J.*

Riddle, Andrew (University of Toronto) and Michael Chazan (University of Toronto)

[230] *Three Dimensional Analysis of Handaxe Shape*

Morphological analyses of handaxes are based on the proportions of measurements of the artifact in plan view as well as ratios between the thickness of the artifact and measures of the plan view. These analyses are highly developed and include approaches that examine allometry and symmetry. The widespread availability of 3D scanning devices opens up the potential for three-dimensional analysis of these artifacts. This paper presents the results of a new method for analyzing and representing the three dimensional shape of handaxes and compares these results with the results generated by 2 dimensional analysis of shape. It is proposed that the strength of 3D analysis is that it provides insight into the distribution of mass that would have been relevant to the functioning of the tool and thus is a useful counterbalance to methods that emphasize the plan view.

Riederer, Josef [184] *see Wagner, Ursel*

Riehl, Simone (Tubingen University), Elena Marinova-Wolff (Center of Archaeological Sciences, Leuven), Katleen Deckers (Institute of Prehistory and Quaternary Ecology, Tubingen University), and Nicholas Conard (Institute of Prehistory and Quaternary Ecology, Tubingen University)

[157] *Vegetation and Plant Diet during the Upper Pleniglacial in southwestern Germany*

Results from macro- and microbotanical analyses at Hohle Fels Cave are presented, demonstrating local vegetation development and plant use during the Upper Palaeolithic. Palynological data of the cave sediments reflect the general development of vegetation during the late Pleniglacial. Phytoliths, vegetative remains and seeds document extensive use of the surrounding flora by the ancient hunter and gatherer groups. Of particular interest are bark fragments of *Arctostaphylos cf. uva-ursi* (bearberry), a medicinal plant, which compliments other activities related to cultural complexity, including the production of figurative art.

Rieth, Christina (New York State Museum)

[180] *Cultural Resource Management and Museum Archaeology: Stewardship and Public Outreach in a Museum Setting*

The New York State Museum's Cultural Resource Survey program has been completing cultural resource investigations for state and federal agencies since 1959. Since this time, the stewardship of archaeological data from threatened sites has been a key tenant guiding the program and afforded unique opportunities to integrate non-traditional avenues for educational outreach into archaeological projects through exhibits, behind the scenes tours, teacher

workshops, and undergraduate internships. This paper discusses how cultural resource management and public outreach can be integrated to create successful stewardship and public education programs and the challenges of integrating these in a museum setting.

Riggs, Casey (Texas A&M University) and Tim Riley

[55] *Resource Processing in the Chihuahuan Desert: A Microbotanical Analysis of Stone Tools from West Texas*
This paper presents initial results from a microbotanical study of stone tools recovered in excavations from both the Lower Pecos Canyonlands and the Trans-Pecos of Texas. The current study presents a starch grain analysis of groundstone implements recovered from a number of sites across the Eastern Trans-Pecos. There is a lack of understanding of the use of groundstone tools recovered from hunter-gatherer sites. This is complemented by a microscopic analysis of visible adhering residue present on flakestone tools recovered from the canyonlands of the Lower Pecos.

Riggs, John (Natural Resources Conservation Service, Arkansas)

[249] *Tracking Pennies: Experimental Archeology on the Movement of Artifacts by Cultivation*
Artifacts are disturbed by cultivation. However, the extent of that disturbance is virtually unknown. By placing coins with identifiable reference numbers on them in the plowzone of an ordinary farm field and tracking the movement with a metal detector, some general ideas regarding artifact movement over time, as well as basic recovery rates, can be recorded.

Righter, Elizabeth [23] see *Farnum, Julie F.*

Riley, Tim [55] see *Riggs, Casey W.*; [123] see *Riley, Timothy E.*; [4] see *Pevny, Charlotte D.*

Riley, Timothy (Palynology Laboratory Texas A&M University)

[123] *Coprolite Research in the Lower Pecos Canyonlands: A Record of Individual Dietary Decisions*
Coprolites present an unparalleled opportunity to study individual dietary decisions in the archaeological record. This poster combines data from a number of studies to evaluate patterns of diet breadth, seasonality, and forager mobility in the Lower Pecos Canyonlands. Models derived from behavioral ecology are used to explore the paleo-nutrition and ecology of the human populations utilizing Hinds Cave (41VV456). The congruent lines of dietary evidence from each biologically complex specimen are evaluated with Cluster Analysis. The poster will also highlight some current research and future directions for coprolite studies in the Lower Pecos Canyonlands.

Ringle, William (Davidson College)

[178] *Form and Function of Las Monjas, Uxmal*
Although one of the iconic examples of Maya architecture, the function of the Monjas Complex of Uxmal continues to be debated. This paper argues for its role as the central court of Uxmal, following our earlier identification, but proposes specific functions for each of the structures. Supporting this are parallels with Chichen Itza and with colonial descriptions of palaces. The implications of this interpretation for our understanding of Uxmal's political organization and its external relations with Chichen and the Puuc Hills are discussed.

Rink, W. Jack [90] see *Dunbar, James S.*

Riordan, Jennifer (US Army Corps of Engineers) and Michael Trimble (U.S. Army Corps of Engineers, St. Louis District)

[163] *Contributions to Archaeological and Forensic Sciences of the U.S. Army Corps of Engineers' Center of Expertise for Curation*
The Center of Expertise for Curation has provided leadership in Government Archaeology for 15+ years. In archaeological collections management, the Center has conducted first-ever curation assessments rehabilitation, archival processing, and NAGPRA compliance for many Federal agencies. The Center's work has

included treatment of human remains from the now-famous 17th century cemetery for enslaved Africans in New York City, the excavation of mass graves in Iraq, and the development of evidence for special tribunals prosecuting crimes against humanity by members of the former Iraqi regime. The poster will demonstrate the Center's leadership in curation, collections management, archival data research and preservation.

Riordan, Robert (Wright State University)

[176] *Within Fort Ancient*
Until recently, very few internal features had been located at Ohio Hopewell enclosures that might help to elucidate the nature of the activities or gatherings that occurred within them. The application of remote sensing technologies has, however, begun to change this picture. At Fort Ancient, magnetometry detected a 60m diameter circular feature labeled the Moorehead Circle in 2005, which has been under excavation since 2006. This paper discusses the features revealed to date, including wooden posts set around the perimeter, a central pit containing burned soil, and bands of embedded stones, and offers interpretive suggestions concerning their import.

Rios, Jorge (Zona Arqueologica de Monte Alban)

[103] *Sector Suroeste de Lambityeco: Nuevas Perspectivas Sobre su Contexto Urbano*
La plaza norte de la zona arqueológica de Lambityeco ha sido considerada durante la época prehispánica como un espacio de mercado debido a la ausencia de objetos rituales (Lind: 182 en Blomster, 2008), así mismo infiere que en el montículo 134 ubicado en el sector SW de la zona arqueológica, pudo ser un mercado (ibídem: 181). A partir de los rescates arqueológicos del 2007 al 2009 realizados en el área SW de dicho sitio se excavaron tres contextos funerarios complejos que muestran este sector tuvo una sola ocupación diferente al propuesto durante el Clásico Tardío.

Rios Ortega, Maria del Roble (UASLP)

[57] *Magistral del Oro: A Seventeenth Century Mining Town in Northern Durango*
The Spanish originally settled in northern Durango because of the rich mines they discovered in the area, modifying the cultural and natural setting. One such place is the mining town of Magistral del Oro in full use until 1968. Over the years, several foreign companies have been in charge of mineral extraction and this is reflected in the remains of the mining activity, including large machinery imported from Holland. My analysis describes the material record of the company town and I link this with issues of identity and industrial patrimony.

Rissetto, John (University of New Mexico)

[147] *Establishing an Inventory of Middle and Upper Paleolithic Chert Quarries across North-Central Spain*
This paper presents an inventory and discussion of chert quarries utilized in north-central Spain by Middle and Upper Paleolithic cultures. Even though northern Spain has a long history of Paleolithic investigation, only recently has the direct identification and characterization of utilized chert quarries become integrated into the research. Data collected from chert quarries in north-central Spain will be presented using a geographic information system through which synchronic and diachronic observations are discussed. The continued survey, characterization and dissemination of quarry data from this region will produce an increased understanding of these Paleolithic cultures.

Rissolo, Dominique (Waitt Institute)

[148] *Of Postclassic Temples and Cave Shrines: Connections and Continuities in Northern Quintana Roo*
The relationship between caves and surface architecture has received considerable attention over the past decade. Both the physical coassociation between cave and structure and its symbolic significance have gone largely unrecognized at a number of recorded and reported sites. A reassessment of this broadly shared pattern in northern Quintana Roo, including the consideration of more recently

identified examples, emphasizes a complementary or parallel tradition involving the incorporation of East Coast Style architectural elements characteristic of Postclassic temples into the construction of cave shrines. Such spatial and stylistic interrelationships reaffirm the integral role of caves in site configuration and ritual practice.

Rissolo, Dominique [212] see *Glover, Jeffrey B.*; **[109]** see *Amador, Fabio E.*

Ritter, Eric W. [255] see *Fenn, Thomas*

Rivera, Claudia (Universidad Mayor de San Andrés, La Paz, Bolivia)

[94] *Middle Horizon Trajectories in the Eastern Valleys of Bolivia*
This paper presents comparative data from several valley regions in eastern Bolivia. Particularly, my analysis will concentrate in comparing the nature of Tiwanaku influence in La Paz, Cochabamba and Chuquisaca regions. This approach will show how these regions, with different historical trajectories of development, interacted with Tiwanaku and formed part of its sphere of influence in very singular and varied ways, although sharing some elements basic to Tiwanaku religious ideology. This comparative approach is a result of my field research in all three regions of the South-Central Andes.

Rivera, Mario (Beloit College), Daniel E. Shea (Beloit College) and Jorge Moya

[23] *Dendroarchaeology in the Atacama Desert, Northern Chile*
This report represents a specific stage within the study on paleoenvironmental conditions of the Ramaditas village site (600 B.C.E.) located in the area of Guatacondo in the Atacama Desert, Northern Chile. Our goal is that by applying tree-ring analysis, we would learn more about the timing and seasonal patterns that characterized the region at the time of settlement. Using samples of *Prosopis tamarugo* Phil. (*tamarugo*), and *Prosopis alba* Griseb (*algarrobo*) we were able to develop three floating chronologies that will help us One for the Ramaditas archaeological site (already radiocarbon dated to 600 B.C.), and two additional ones based on the samples coming from living trees, and taken from elsewhere in the Atacama Desert. Overall, they correspond with similar dendrochronological studies from NW Argentina and the Bolivian Altiplano.

[94] *Discussant*

Rivera Estrada, Araceli (M.C.G.)

[242] *Loma el Muerto: Paisaje Ritual Prehistórico Construido por Grupos Cazadores Recolectores Avanzados del Semidesierto Neoleonés*

En el presente documento se analiza e interpreta el proceso por el que el "espacio sagrado" (de especial significación simbólica) fuera apropiado, ocupado y dominado (simbólica y culturalmente) durante la época prehistórica en la región central de Nuevo León, por grupos cazadores-recolectores ("avanzados" o "complejos") en forma cíclica, durante un largo período de tiempo, en vista de asegurar su reproducción y satisfacer sus necesidades vitales, que eran a la vez materiales y también simbólicas (correspondientes a su realidad material e imaginaria).

Rivera Guzman, Ivan (Instituto Nacional de Antropología e Historia)

[103] *Las vasijas efígie ñuiñe: iconografía, poder y jerarquía social durante el Clásico en la Mixteca Baja.*

Las vasijas efígie son un elemento diagnóstico del estilo ñuiñe de la Mixteca Baja, identificado por primera vez por Paddock en los 1960s. Los estudios de estos objetos se han concentrado en la imaginería, estilo y poca atención han tenido como referente a la organización social y religiosa. Aunque son pocos los ejemplares excavados en la región, como Cerro de las Minas y Cerro de la Codorniz, existe evidencia que ayuda a entender cómo estos objetos fueron indicadores del estatus social mostrando valores relacionados con la ideología y religión.

Rivers, Ray (Imperial College London), Carl Knappett (University of Toronto), and Tim Evans (Imperial College London)
[113] *Resilience and (In)stability in Social Networks: The Eruption of Thera and the Burning of the Palaces.*

In constructing social networks we need to distinguish between resilience and stability. A network is resilient if it is able to survive a shock to the system that damages it, in one way or another. A network is stable if, on changing it slightly, it will tend to revert to its original state. Equally, a network is unstable if a small change nudges it past its tipping point. We shall argue that the maritime network of the MBA S.Aegean is both resilient, in that it survives the loss of Thera and the immediate consequences of the eruption that destroyed Thera, and unstable, in that an aggregation of small changes following the eruption plausibly lead to a collapse of the system. Further, this collapse occurs because the development of strong ties weakens the system (the complement to Granovetter's strength of weak ties).

[113] *First Chair*

Rizvi, Uzma (Pratt Institute)

[181] *Archaeology of Time and Title: Labeling "Primitive" and "Tribal" and its effects in Contemporary Indigenous Communities in India*
Through the establishment of disciplines such as archaeology, a significant part of the colonial agenda included the control of time and categorization of human populations. Categories of time became synonymous with technological traits, which in turn defined human characteristics. The use of 'primitive' to define populations, and chronological markers such as 'Stone Age,' create an indelible link between time, technology, and human subjectivity. This paper examines how time was used to categorize people in colonial India, how those categorizations continue to haunt archaeological practice, and will query the role of indigenous politics in contemporary archaeology in India.

Rizzo, Florencia [22] see *Scheinsohn, Vivian G.*

Roache-Fedchenko, Amy (Syracuse University)

[255] *Adaptations of a Blacksmith: Maintaining European Expansion and Economic Growth on the North American Fur Trade Frontier*
The once-common idea of the one-sided effects of the intrusion of European goods to native communities has become antiquated, replaced by concepts that new and sustained interactions created cultural and material interdependencies between peoples. The presence of a blacksmith was necessary for European expansion and sustainability within the frontier environment, but how did blacksmithing change with time as Europeans adapted to the frontier and the various demands from the diverse populations of the fur trade? Using x-ray fluorescence technology to examine metal artifacts from Fort Michilimackinac serves as a case study for understanding the nature of European adaptations while balancing political agendas and maintaining social relationships on which they were dependent for survival.

Robart, Jessica [36] see *Holt, Julie Zimmermann*

Roberts, Heidi (HRA Inc., Conservation Archaeology) and Richard Ahlstrom (HRA Inc., Conservation Archaeology)

[248] *Farmers on the Go: A Forager-Farming Model for the Las Vegas Valley, Nevada*

Formative period sites in Nevada's Las Vegas Valley offer some unique contradictions. A pithouse occupied circa AD 500 lacks evidence of maize, yet two miles away maize (and mesquite) was stored in hundreds of pits between 200 BC and AD 1500. Las Vegas farmers adopted some Virgin Branch puebloan traditions, such as gray ware pottery, but not others, like slab-lined storage rooms. Did Las Vegas farmers remain highly mobile, farming only when foraging alternatives were poor? This paper examines Las Vegas' archaeological and ethnographic subsistence record using Renee Barlow's 2006 formal model for predicting agriculture among the Great Basin Fremont.

Roberts, Heidi [144] *see Eskenazi, Suzanne*

Robinson, Eugenia (Montgomery College)

[218] *The Other Late Classic Maya: Regionalization and Defense in the Guatemalan Highlands*

Following in the footsteps of Will Andrews, his students have carried out research outside of the Maya lowlands. Recent work indicates that the Late Classic Guatemalan Highlands had interregional cultural variation and territoriality expressed by defensive features. This paper will examine the settlement data from the Classic period in the Central highlands. It will consider the elite religious and political influence on residential and sacred sites, and consider the climatic evidence for the decline in populations at the end of the period. The paper will highlight the regionalization of highland cultures and contribute to the ongoing discussion of the Late Classic Maya.

Robinson, Francis (University at Albany (SUNY))

[60] *Early Woodland Mortuary Ceremonialism and Interaction Spheres: A View from three Middlesex Mortuary sites in Vermont*
Ongoing analyses of the environmental contexts, artifact assemblages, and extant documentation from three Middlesex sites in Vermont have provided evidence of significant variability despite the common presence of a small number of "diagnostic traits". While the interpretations of this variability are preliminary, the evidence thus far suggests that each site, in part, represents participation in overlapping, but semi-discrete inter-regional exchange networks. The geographic extent of these networks and the implications of the materials exchanged for aggrandizement and social differentiation within and between the groups studied are briefly explored.

Robinson, Kenneth [85] *see Pereira, Carlos M.*

Robinson, Lynn [87] *see MacDonell, George H.*

Robinson, William [40] *see Hartmann, Gayle*

Robles Garcia, Nelly (Instituto Nacional de Antropología e Historia) and Jack Corbett (Portland State University)

[103] *Manejo de Recursos Arqueológicos en Oaxaca*
Esta ponencia aborda los nuevos proyectos de investigación arqueológica realizados en sitios de Oaxaca como Atzompa, Mitla, registro de cuevas prehistóricas de Yagul y el pueblo viejo de Teposcolula, Yucundaa con un enfoque en los beneficios sociales que resultan a partir de la interfase generada entre sitio y comunidad. En especial se discute un análisis de los trabajos arqueológicos sociales y los beneficios que obtienen las comunidades a partir de los mismos.

Robles Garcia, Nelly [103] *see Tuross, Noreen C.;* [103] *First Organizer;* [103] *First Chair*

Robles-Salmerón, Amparo (Universidad de las Américas, Puebla), Gabriela Uruñuela and Patricia Plunket

[136] *Constructing Cholula's Great Pyramid: Production Costs of its First Monumental Stage and their Implications*

Towards the end of the first century, Cholula emerges as the political center of the Puebla-Tlaxcala Valley, materializing its power with the erection of the first monumental stage of its Great Pyramid, which required a significant mobilization of resources and manpower. Using a regional physiographic appraisal to identify raw material deposits and ethnographic data to estimate the human labor/effort invested, the chaîne opératoire and the specific tasks involved are reconstructed in order to quantify the energy input of the building process, thus contributing to our understanding of the local socioeconomic system for this poorly-known period of Cholula's history.

Rocek, Thomas (University of Delaware)

[87] *Jornada Huts and Houses: Implications of Formative Architectural Diversity in the Jornada Mogollon*

While researchers recognize substantial Formative architectural

variation within the Jornada Mogollon of southeastern New Mexico and extreme western Texas, much of the literature has focused on the Tularosa Basin and adjoining low-lying areas and has emphasized a single linear scale from small, shallow, ephemeral to large, deep, substantial pit structures to surface pueblos. In this paper I consider architectural diversity over a broader range of Jornada environmental contexts to examine economic, social, temporal, and possible ethnic differences underlying this diversity. I suggest that rather than a single continuum, architectural data imply multiple patterns of variation along these multiple cultural dimensions.

[87] *First Organizer;* [87] *Second Chair;* [87] *see Lynch, Shaun M.*

Rochette, Erick (Penn State University)

[156] *"Not All Wealth Goods are Made Alike": Examining Assumptions about Jade Artifacts among the Classic Maya*

In a 1992 article, Ken Hirth argued that archaeologists must "begin to examine the more specific ways in which primitive valuables are used in the formation of status hierarchies." In this paper, I follow Hirth's lead by examining the varied contexts of jade wealth goods and the implications these patterns have for their function within Classic Maya society. Using data from the Middle Motagua Valley, Guatemala and elsewhere, I argue that current models of Classic Maya wealth goods production and use remain incomplete by failing to recognize the diverse ways in which particular artifact forms were employed.

Rockwell, Heather (University of Tulsa)

[25] *Use-Wear Analysis of the Potter Site: A Paleoindian Site in New Hampshire*

This poster will present the results of a use-wear analysis of 1000 artifacts from the Potter site, a paleoindian site in New Hampshire. The results of this analysis will help illuminate activities undertaken at this site and may help interpretations of paleoindian settlement patterns within New England and the Canadian Maritimes.

Rockwell, Tom [122] *see Erlandson, Jon McVey*

Roddick, Andrew (University of Victoria)

[47] *Formative Period Taskscapes on the Taraco Peninsula, Bolivia*

Andean archaeologists working in the Lake Titicaca Basin have long focused on social boundaries. Researchers have drawn on a wide array of material culture to define political, religious and ethnic boundaries. In this paper I consider the role of daily tasks in the creation of social boundaries and constituting regional prehistories. I explore the applicability of Timothy Ingold's notion of the "taskscape" for studying the palimpsest of practices that defined Titicaca Basin landscapes and social relations. I then develop Ingold's approach with Formative Period data from the Taraco Peninsula, Bolivia.

[47] *First Chair*

Rodell, Roland (University of Wisconsin Rock County)

[105] *Oneota Ceramics: Jar Size and Settlement Patterns in the Northern Mississippi Valley*

Oneota culture in the northern Mississippi Valley is identified with settlements concentrated in two localities: Red Wing–Pepin (AD 1000–1300) and La Crosse–Trempealeau (AD 1250–1600). Manifest in the temporal separation of these localities are variations in ceramic motifs and a significant expansion in house size. Ceramic data from nine sites reveal that another sequential disparity between the localities is an increase in the size of jars along with a reduction in stylistic variability. It is inferred that the ceramic data correlate with the social restructuring of Oneota communities within the northern valley.

Rodman, Julie-anna (Salmon-Challis National Forest)

[43] *Fire Protection for Heritage Resources in the Frank Church River of No Return Wilderness*

The management of heritage resources during a fire event presents a host of unique challenges in the Frank Church River of No Return Wilderness. Fire protection methods for historic properties have included fuel reductions surrounding structures, wrapping with fire resistant materials and installation of sprinklers. Compounding the

challenges are federal policies, fire management concerns and heritage issues. To be active participants in the fire protection of heritage resources managers need to be involved in fire planning before, during and after an event. Fire management will continue to influence the management of heritage resources on the Salmon-Challis National Forest.

Rodning, Chris [52] see *Beck, Robin A.*

Rodning, Christopher (Tulane University), David Moore (Warren Wilson College) and Robin Beck (University of Michigan)

[52] *Spanish Entradas in the Southeast, the Juan Pardo Expeditions, and Spanish Contact in the Western North Carolina Piedmont*
The Juan Pardo expeditions (1566-1568) were the last major Spanish entradas in the interior of La Florida, in what is now the southeastern U.S. Compared with preceding entradas, the Pardo expeditions devoted more effort towards diplomacy, gift giving, and prospecting, and they were more successful at establishing settlements. One of those settlements was Fort San Juan, built beside the Native American town of Joara, at the Berry site, in the upper Catawba River Valley in western North Carolina. This paper reviews sixteenth-century Spanish expeditions in the Southeast and the assemblage of sixteenth-century Spanish artifacts from the Berry site.

[52] *Second Chair*

Rodning, Christopher [52] see *Moore, David G.*; [52] see *Sanders, Merritt M.*

Rodriguez, Enrique (University of Texas) and Sarah Graff (University of Chicago)

[48] *Beyond the Biological Need to Cook: Archaeologies of Food Preparation*

Cooking and food preparation are related to subsistence by rendering many ingredients edible and increasing their nutritional quality. But focusing only on the nutritional aspects of cooking ignores much broader social and cultural processes that surround food preparation. In this paper, we argue that cooking should be taken seriously as an aspect of social, cultural, political, and economic life, and we examine the relevance of cooking for different models about the past focusing especially on archaeological studies that have derived unique insights from the study of food preparation beyond subsistence.

Rodriguez, Juan

[196] *Providing Access to "La Cultura" to Marginalized Communities in the Dominican Republic*

In developing countries the economic and cultural policies are traditionally concentrated in metropolitan areas. The Dominican Republic is not an exception. Due to the fact that most institutions are currently concentrated in the Capital city of Santo Domingo, more than 90% of the population has no access to "La Cultura:" museums, public libraries, art schools, theaters, and cultural events. By working together with the people of small villages to establish community museums and a "mobile museum" under development, these efforts serve to empower the people of rural localities, reinforce individual and community identities, and bolster economic development of the area.

Rodriguez Ramos, Reniel (Universidad de Puerto Rico-Utuado)

[116] *On the Ideological Origins of Tainoness*

The superstructural foundations of the late (post-AD 1000) indigenous societies of the Greater Antilles have traditionally been conceived as being erected upon an amazonian template. It has been argued that these ideological principles were brought by the Arawak immigrants that ventured into the islands from northeastern South America, being reinterpreted and elaborated within the Antilles by the indigenous groups that eventually developed the cultural manifestations that have been erroneously homogenized with the homonym of "Taínos." However, recent evidence that demonstrates the marked influence of the pre-Arawak societies of the islands in the developments that took place in late contexts in combination with the pan-regional interactions established between Antillean indigenous peoples with

those from other surrounding Circum-Caribbean regions, demand that we drastically revise our notions about the ways in which ideologies were articulated, negotiated, and consumed in the insular Caribbean. [116] *Second Chair*

Roebroeks, Wil [184] see *Kindler, Lutz*

Rogers, Alexander (Maturango Museum) and John Swigart (Valles Caldera National Preserve)

[41] *Hunting and Gathering in the Southwest? A Possible Game Trap on the Valles Caldera National Preserve*

The peoples of the American Southwest are typically associated with intensive agriculture, particularly in the Formative period. However, during a survey on the Valles Caldera National Preserve (VCNP) at Cerro La Jara in the Valle Grande a feature of stacked and aligned stone was observed which resembles a game trap and may be indicative of hunting and gathering. This poster reports the characteristics of the VCNP feature, and compares it with known game traps from the Great Basin and Eastern California.

Rogers, Jason [27] see *Proue, Molly*

Rogers, Richard (USDA-NRCS)

[249] *Prehistoric Ridged Fields in Iowa*

The recent discovery of 2 prehistoric ridged fields, brings the number of well preserved examples of this form of agriculture known in Iowa to 3. The topographic settings range from a loess ridge top, to an alluvial terrace, to a glacial wetland. Two of the ridged fields are near burial mound groups. Two ridged fields exhibit high phosphorus, suggesting the use of ash as fertilizer. The wetland ridged field did not have high phosphorus, possibly because the soil was already highly fertile. The probable reason for constructing ridges is to reduce the moisture level which can increase the length of the growing season, and in some cases allow the use of hydric soils.

[249] *First Organizer*

Rogoff, David (University of Pennsylvania)

[258] *Late and Terminal Classic Jute Use, Middle Chamelecon Drainage, Northwestern Honduras*

Excavations at and around Las Caleras, Honduras during the 2008 field season revealed extraordinarily high concentrations of jute shells. Recent artifact analysis comparing the second and third-tier sites' assemblages have reduced myriad possible explanations to one leading hypothesis. This latest work suggests that Las Caleras and the smaller sites in close proximity were engaged in specialized production of lime for use in food preparation.

Roney, John [248] see *Hard, Robert J.*

Roos, Christopher (University of South Florida)

[228] *Fire and the Making of Western Apache Landscapes in the Mountains of Eastern Arizona*

Keith Basso's *Wisdom Sits in Places* articulates the importance of natural landscapes in the transmission of Western Apache culture. I suggest that this relationship is also recursive; evidence from oral tradition, ethnography, dendrochronology, and geoaerchaeology suggest that Western Apaches actively shaped their landscapes through the use of fire, simultaneously creating Western Apache cultural environments and the "natural" landscapes appropriate for teaching Apache lifeways. This was particularly true for upland environments dominated by ponderosa pine forests. There is tantalizing evidence that this practice of Western Apache pyrogenic placemaking in upland pine forests may have great antiquity and predate Athapaskan migrations to the Southwest U.S.

[198] see *Hollenback, Kacy L.*

Roosevelt, Anna (Univ. Illinois, Chicago) [126] *Discussant*

Roper, Donna (Kansas State University)

[111] *Examining Variation in Late Prehistoric Pottery from the Central Plains*

Central Plains tradition pottery has been studied for over a century, but it is fair to say that it has been vastly understudied. A current research program seeks to move away from traditional typological and chronological concerns and moves toward an understanding of past behavior materialized in the pottery. To this end, vessel form, ceramic composition and production technology, style variation, and the geographic variation within these domains is being studied. The research is showing how the geographic variety of the Plains affects ceramic technology and empirically documenting the social landscape of the region in the early second millennium.

[111] *First Chair*; [72] see *Adair, Mary J.*

Rorabaugh, Adam (Washington State University)

[203] *Investigating the Cultural Transmission and Variation of Barbed Bone and Antler Technologies in the Gulf of Georgia, Northwest North America*

While anthropologists have long discussed the evolution of social complexity on the Northwest Coast, the relationship between material culture and complexity is a less-explored topic. Viewed from the perspective of Boyd and Richerson's dual inheritance theory, the development of social stratification and systems of deference may influence the contexts of social learning. Prestige-based indirect bias was predicted as a factor in the learning of technologies tied to systems of resource procurement and prestige-based status as complexity developed. Barbed bone and antler points are examined as a technology tied to these resource systems and prestige-based status. Point functional and culture-historic hypotheses are also assessed.

Rosania, Corinne (University of Missouri, Columbia)

[123] *Paleozoology and North American Black Bear (Ursus americanus) Ecology*

Born from the fusion of archaeology and zoology during the 20th century, zooarchaeology (paleozoology) draws on the resources of myriad fields (i.e., archaeology, paleontology, chemistry, geology, zoology and conservation biology) to investigate past cultures and past environments. Likewise, temporally deep ecological knowledge culled by paleozoologists is increasingly applied to modern wildlife management and conservation ecology. Herein, stable isotope analysis reveals late Holocene North American black bear (*Ursus americanus*) diet in Missouri. Documentation of native ursid diet which is not historically known should influence modern conservation efforts that seek to restore this once-extirpated species to the region.

Roscoe, Paul (University of Maine)

[206] *The Conditions for Cannibalism*

Cannibalism is a topic avoided in social anthropology and a matter of controversy in archaeology. On the premise that cannibalism is a human trait but its appearance a product of circumstance, this paper investigates the distribution of exocannibalism in 120 New Guinea societies, and finds that it is almost exclusively limited to low-density communities. Only in low density societies, the paper proposes, is butchery of a corpse following an assault militarily practical, a circumstance that fuels a spiral of revenge-cannibalism.

Rose, John (Salmon-Challis National Forest)

[43] *Homestead Economics: Household Economic Decisions in Historic Construction*

This poster presents a model for examining how historic homesteaders balanced labor versus capital expenditures when they built their dwellings, fences, and other improvements. In the Frank Church River of No Return Wilderness, most homesteads were small farms built by their owners employing simple tools and methods. Today, the construction techniques and materials found in these historic features reflect the economic decisions made by historic households. This poster applies the model to log cabins and fences within the Frank Church River of No Return Wilderness.

Rose, Timothy [151] see Henry, Amanda G.

Rosebrough, Amy

[70] *Power from the Earth: Effigy Mound Social Landscapes*
Recent spatial studies of ceramic and mound style have shed new light on Late Woodland social landscapes in Wisconsin. Data concerning ceramic style is consistent with previous models of effigy-building populations as mobile and socially-fluid. Data concerning mound style, on the other hand, hints at territoriality and the existence of multiple internal social divisions. This contradiction may be resolved by postulating the existence of territorially-bound ritual specialists, standing at the heart of each Effigy Mound community and competing for the allegiance of other community members.

Rosenberg, Danny [147] see Nadel, Dani

Rosenstein, Dana (University of Arizona) and James Feathers (University of Washington)

[182] *Luminescence Dating of Samples from Recent Contexts in South Africa*

The last 500 years was a formative period of the southern African past, during which hunter-gatherers, agropastoralists and colonists interacted frequently and intensely on the shared landscape. A fine-grained historical understanding of this period requires the chronological sequence of archaeological site settlement and abandonment to be highly resolved. Because of acute De Vries effects, radiocarbon dating is inadequate over the last 500 years. Using luminescence dating, chronometric results with high precision have been obtained for South African sites. These results contribute to current research developing methodologies for measuring luminescence and calculating ages of samples from recent contexts (Pietsch 2009).

Rosenswig, Robert (The University At Albany – SUNY), Daniel Seinfeld (Florida State University), Sean Higgins (University at Albany) and Wilberth Cruz Alvarado (Universidad Autonomo de Yucatan)

[5] *Ancient Maya Food from Formative Period San Estevan, Belize*
In this paper, macrobotanical, faunal and ceramic data are used to reconstruct the evolving foodways of San Estevan's residents from the Middle through the Late Formative periods (800 BC – AD 200). During the course of this millennium, a small community developed into a local political center and monumental architecture was built for the first time. Macrobotanical and vertebrate faunal evidence allow us to reconstruct changing diet of the site's residents and ceramic remains inform us about food preparation and presentation. These patterns are employed to explore the relationship between changing economic and political patterns at the site.

[5] *First Chair*

Rosenthal, Jeffrey [197] see Whitaker, Adie

Rosenzweig, Melissa (University of Chicago)

[11] *Under the Green Thumb of Assyria*

This presentation examines the role of agrarian production and consumption in power relations at the historical site of Tushan (Ziyaret Tepe), a military garrison and provincial center for imperial activity on the northern frontier of Assyria. In particular, this paper utilizes the latest results of macrobotanical analysis from samples of the "Bronze Palace" on the high mound of Ziyaret Tepe to explore the politics of agricultural practices in southeastern Turkey during the Late Assyrian imperial period (ca. 900-600 BCE). Analysis of the Bronze Palace paleobotanical assemblage will focus on indications of resource disparities, in order to discern whether agrarian practices have the potential to create and/or maintain social differentiation and political inequality.

[11] *Second Chair* [11] *Second Organizer*; [11] see *McLeester, Madeleine*

Rossen, Jack (Ithaca College)

[247] *The Dating Game: The Politics of Repatriation in Haudenosaunee (Iroquois) Country*

The politics of repatriation in Iroquois (Haudenosaunee) country are based on new stratigraphic excavations to better date cultural

horizons and materials and culturally connect them with present-day Iroquois peoples. Resistance to NAGPRA-based repatriation in New York state has taken several forms, including obfuscation of archaeological data and misinformation campaigns designed to discredit archaeological research. The implications for research conducted over the last three summers at the Levanna site are discussed. This issue lies at the core of reasons for performing and transforming archaeology in the 21st century.

[66] *Discussant*

Rostoker, Arthur (Proyecto Ipiamais)

[23] *A pedestrian approach to Tropical Forest Archaeology: in advance of magic bullets.*

For archaeologists trained in the past 50 years, collaboration with technicians and scientists from related disciplines is routine. Recently, archaeometric equipment, particularly for remote sensing, has become portable and user friendly. Students are routinely trained to use it, yet remote sensing is not a magic bullet for all seasons. In the mud and broken terrain of the eastern slope of the Andes, with buried anomalies few and far between, reconnaissance and survey are best carried out on foot, probing with hand tools. An ancillary benefit of this simple methodology is that most available funds are expended within rural host communities.

Roth, Barbara (UNLV)

[248] *Were They Sedentary and Does it Matter? Early Farmers in the Tucson Basin*

Much of the recent literature on the Late Archaic/Early Agricultural period in the Tucson Basin has focused on establishing whether these groups were sedentary irrigation agriculturalists or practiced some level of mobility, at least during part of the year. I argue here that the question "were they sedentary?" limits our understanding of these early farmers. It appears that they were flexible in their responses to both environmental and social conditions, sometimes aggregating into larger, more stable communities and other times moving seasonally. I discuss the implications of this for our interpretations of early farmers throughout the Sonoran Desert region.

[248] *First Chair* [248] *Second Organizer*

Roth, Barbara [128] see Schriever, Bernard; [51] see Berg, Caryn M.

Rothenberg, Kara (University of South Florida) and E. Christian Wells

[259] *Using Soil Chemical Residue Analysis to Prospect for Ancient Activity Loci at the Prehispanic Site of Palmarejo, Northwest Honduras*

This research compares various soil properties, including pH, organic matter, and extractable phosphate, from a prehispanic archaeological site in Honduras to broaden our reach in prospecting for activity loci using soil chemistry. Recent studies tend to rely on spatial differences in elemental concentrations for identifying activity patterns in the archaeological record. However, other related soil properties, including pH and organic matter, sometimes correlate with chemical residues, especially phosphates. The research presented explores these interconnections with the greater goal of identifying the ways and extent to which various soil properties are linked in the formation and preservation of ancient activity loci.

Rothman, Mitchell (Widener University) [96] Discussant

Roth-Murray, Carrie (University of Wales, Lampeter)

[82] *Artefacts and Ecofacts: Questioning the Social Role of Material Culture*

In Classical Archaeology, material culture is seen as being emblematic of complex societies. As a result, material culture is often viewed in economic terms, identifying groups of producers, traders, and consumers, as well as in artistic terms, identifying which groups are the "better" producers. The discovery of unworked ecofacts, particularly seashells, in burials and votive deposits indicates that other symbolic elements are at work in the exchange and function of

materials. Social and symbolic dimensions concerning the use of ecofacts and artefacts in Mediterranean contexts must be considered. Cross-cultural comparanda from North America will be considered to inform this discussion.

Rothschild, Nan (Barnard, Columbia univers) and Heather Atherton (Columbia University)

[181] *Material Manifestations (or Not) of Ethnic Identity*

Initially concerned with addressing constructions of ethnicity and identity, research at the late 18th-century Spanish Colonial village of San José de las Huertas, NM revealed that a complex relationship existed between multiple ascribed and elective identities, many of which are not visible in the material record. Using Las Huertas as the principal case study, this paper examines the disjuncture between material objects and *casta* or ethnic identifications described in oral and historical accounts of Spanish Colonial America. It also seeks to explore the legacy, if any, this disjuncture has had on the present-day descendant community.

Rouse, Lynne (Wash U in St. Louis)

[222] *Risking It All: The Long-Term Effect of Economic and Political Strategies in the Oasis Communities of Bronze Age Turkmenistan*

An essential component of our understanding of diachronic change in any ancient society is to ascertain the factors that drove decision-making processes. Both on the individual and the community level, decisions based on risk-minimization rather than production-maximization affected the trajectory of economic and political strategies. This paper focuses on the Bronze Age of southern Turkmenistan (ca. 2200 – 1500 B.C.). Specifically, I examine the available archaeological data for the developed agricultural societies of the Murghab delta, focusing on their relationship with independent mobile pastoral groups. I assess this data for indications of either risk-minimization or production-maximization approaches to decision-making and examine their long-term effects.

Routledge, Bruce [259] see Adelsberger, Katherine A.; [92] see Fatkin, Danielle S

Roux, Valentine (CNRS) and Hara Procopiou (University of Paris I)

[216] *Arkeotek Publications: Improving the Process of Accumulating Knowledge*

Several articles on grinding materials have been published according to the logicist model in the Arkeotek Journal (www.thearkeotekjournal.org). The logicist model consists of defining the set of basic data (archaeological and other) and the sequence of inferences made to support a hypothesis, followed by use of this data. It enables us to progressively constitute a logicist corpus that is a thematic knowledge base on grinding material. As we shall see, such a basis contributes directly to the process of accumulating knowledge as well as to the dynamic of research.

Rowan, Yorke (University of Chicago) [216] Discussant

Rowe, Marvin [104] see Boyd, Carolyn E.

Royce, Karen (The Ohio State University)

[244] *The Water Plant Site: Thirty Years Later and Still Providing Us with New Insights*

Geophysical surveys using fluxgate gradiometer and magnetic susceptibility instruments were conducted at the early Late Woodland Water Plant site. The site was first investigated through archaeological survey and excavation under the direction of Dr. William S. Dancey approximately thirty years ago. The re-examination of this site using different investigative techniques has yielded additional, illuminating information. Most importantly, the site does appear to be definitively defensive in nature based on two sets of earthen ditches and wooden palisade features encompassing roughly an 8-acre area. Use of geophysical methods combined with excavation and radiocarbon dating has produced a possible site construction history.

Ruby, Allika (Far Western Anthropological Research Group) and William Hildebrandt (Far Western Anthropological Research Group, Inc.)

[154] *Dietary Persistence and Tool Selection in a Changing Economy: Obsolete or Optimal?*

Native peoples of southeastern California were among the last in North America to have continuous direct contact with Euroamericans. In the forests of Coso Mountains, just east of the Sierra Nevada, pinyon nuts continued to be harvested well into the modern era and traditional processing tools were used even after other kinds of tools were replaced by mass-produced forms. A key assumption of acculturation is that traditional materials will be substituted for Euroamerican imports when available; our findings indicate that this process is more complex and requires a refined understanding of the costs and benefits associated with technological substitutions.

Rudolph, Katie (UW- Milwaukee), Douglas K. Charles (Wesleyan University) and Jane E. Buikstra (Arizona State University)

[215] *Structure and Renewal at the Mound House Site in Greene County, Illinois*

Ceremonialism and ritual renewal has been coupled with Middle Woodland mound construction and use in the Lower Illinois River Valley. Investigation of a basal postmold structure in Mound 1 at the Mound House site, Greene County, Illinois, supports this interpretation. Spatial organization of nearly 500 postmolds on the pre-mound surface including evidence of three parallel, concentric arcs suggests repeated activity at Mound 1 prior to, and in conjunction with, mound construction. This reinforces an argument for cyclic, ritual use of the Mound House site and offers an additional perspective on Middle Woodland mounds in the Lower Illinois Valley.

Rugroden, Sara

[235] *Liminality and Architecture: The Search for the Space In-between*

In 2009, I examined ritual architecture at the site of Paquimé (AD 1250-1450), northern Mexico, with the intention of identifying liminal spaces. According to Arnold van Gennep's model, liminal spaces should bridge or connect sacred with profane locations. Specifically, I compared architectural spaces that were adjacent to previously identified ritual spaces with theorized characteristics of liminal spaces. My research concluded that most of the defined ritual spaces at Paquimé have at least one contiguous liminal space. In this poster I assess if this model is more broadly applicable by attempting to identify liminal spaces in other archaeological sites.

Ruhl, Donna (Florida Museum of Natural History) and Melissa Ayzav (Florida Museum of Natural History)

[26] *Rehabilitation of Archaeobotanical Collections from Pineland: A Major Coastal Archaeological Site Complex in Southwest Florida* Archaeobotanical collections exist from excavation projects that took place at southwest Florida's Pineland Site Complex from 1988 to 1995. They focus on its A.D. 50-1710 cultural and environmental histories. The collections consist of dry, wet (waterlogged), and conserved plant specimens. A grant from the National Endowment for the Humanities is supporting curation. Project methods follow national standards and are illustrated with multiple images. A monitored programmatic plan for the preservation of waterlogged specimens has been developed and is highlighted here. Ultimately, this project will greatly improve the long-term stability and accessibility of these rich and rare archaeobotanical collections from Pineland.

Ruiz, Alvaro [114] see Haas, Jonathan

Ruiz, Joaquin [255] see Fenn, Thomas; [255] see Thibodeau, Alyson M.

Rush, Laurie (US Army, Fort Drum) and James Zeidler (Colorado State University)

[164] *Heritage Preservation; Military Progress in the Middle East* The Central Command Historical Cultural Advisory Group and the

Legacy Heritage Training for Deploying Personnel have been working to improve knowledge, awareness, and planning tools for cultural property protection in the Middle East and Afghanistan. This poster will illustrate educational methods, training tools, and planning assets for supporting cultural property awareness among deploying personnel. International cooperation efforts will also be discussed.

Rush, Laurie [164] *First Organizer*; [164] *First Chair*; [89] see Scardera, Francis

Russell, Bradley (State University of New York At Albany)

[20] *Demographic and Sociopolitical Implications of Survey Outside of Mayapán's Defensive Wall*

Recent survey and mapping of unrecorded areas of Mayapán located outside of the site's defensive walls resulted in significant revisions of the size and population estimates for this important Postclassic political capital and yielded new data on the sociopolitical organization of the city. The work suggests that the city was far larger and more complex than previously understood and provides a more complete picture of the city's form and layout. This paper will explore the implications of this data for our understanding of the social transformations taking place between the Classic and Postclassic periods of Maya history.

[20] *Third Organizer*

Russell, Nerissa (Cornell University)

[82] *The Three Faces of Domestication*

Animal domestication is difficult to define. Scholars have variously emphasized physical or behavioral changes, human control mechanisms, and property relations. Biologists tend to stress the biological aspects, while archaeologists and anthropologists more often focus on the social. Here I classify domestication models: according to type species of the domestic animal. Dogs, sheep, and cattle have inspired the most modeling. Most scholars have generalized from their favorite species to all domesticates, but it is more useful to recognize at least three distinct routes to domestication. While there are some similarities among these paths, many features are distinctive, especially the motivations.

[82] *First Chair*

Russell, Will (Arizona State University)

[192] *El Paso Polychrome and Site Chronology in the Postclassic Eastern Mimbres Region*

Late Postclassic (AD 1250-1450) pueblos in the eastern Mimbres area are highly variable with regard to architecture, settlement layout, and inter-regional connectivity. Traditional ceramic seriation, with admittedly coarse resolution, suggests that these villages were contemporaneous. If true, their differences may indicate disparate, though proximate, social identities. El Paso Polychrome (ca. AD 1000-1450) is present at most late sites in the area. This type exhibits temporally diagnostic morphology allowing the ordering of jar rim sherds. Analyses based on these attributes have addressed the contemporaneity of three Late Postclassic, eastern Mimbres sites, contributing to an improved understanding of social variability and reorganization.

Russell, William [33] see Griffith, Tabitha L.

Rutherford, Allen (Tulane University), Jonathan Haas (The Field Museum), Manuel Perales Munguia (Proyecto Arqueológico Norte Chico) and Winifred Creamer (Northern Illinois University)

[138] *Patterns of Movement and Site Orientation in the Late Archaic Norte Chico region, Peru*

Monumental architecture in the Norte Chico region of Peru has played the most significant role in the discussion of sociopolitical complexity in the region during the Late Archaic period. While this focus has led to a greater understanding of the dynamics in the region, it has not begun to answer key questions concerning movement between sites and the possible relationships between sites based on location and orientation. Using Least Cost Path Analysis (LCPA) and individual site topography, intra-valley movement will be

assessed with specific concentration on the ways in which movement affected site location as well as site orientation.

Ryan, Karen (Canadian Museum of Civilization) and Janet Young (Canadian Museum of Civilization)

[79] *A Possible Example of Shamanistic Healing Amongst the Sadlermiut Inuit of Arctic Canada*

The existence of shamans (angakkuit) and a shamanistic belief system are widely reported in historic Inuit society. Angakkuit acted primarily as mediators between the spiritual and physical worlds and were often tasked with performing healing rituals. While certain details of these events are well reported, others (particularly the use of shamanistic paraphernalia) are conspicuously absent. The present study discusses a human figurine found in a Sadlermiut grave which was modified to mirror illnesses evident on the grave occupant's skeleton. We examine how this unique burial provides an opportunity to explore concepts of illness, healing, and spirituality in Inuit society.

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

[128] *The Vertical Continuum: Ritual Termination and Renewal of Late Pueblo III Kivas*

Dry-laid masonry shrines, constructed within the depressions of decommissioned kivas dating to the late thirteenth-century, have been identified in Ancestral Pueblo villages located in the Mesa Verde region of southwest Colorado. Using Shields Pueblo as a case study, this paper examines ritual termination and renewal behavior as a means of creating a ritually-charged vertical space continuum. Shrines physically identified and commemorated structures imbued with ritual significance, perpetuating that significance despite the structures decommissioned status. Additionally, the shrines evoked memories and cued subsequent generations into recalling the significance of place, a place that was depopulated shortly after the shrines were constructed.

Ryzewski, Krysta (Brown University)

[255] *The Iron Age of America: Learning Metalworking in the New England Frontier*

Manufacturing processes based on European models, (e.g. the Saugus Ironworks), mark some of the greatest industrial and entrepreneurial failures in early colonial America. Colonial metalworking is poorly documented and therefore assumed to involve primitive technologies and unspecialized labor. Recent archaeology in southern New England demonstrates that a thriving metals industry existed during the colonial period, one that involved multicultural laborers, tight networks of production, innovative techniques, and complex manipulations of natural resources in otherwise unfamiliar environments. The development of these technologies over several generations, and the cross-craft techniques involved in production are discussed using historical, archaeological, and metallurgical examples.

[123] see Urban, Thomas M.; [255] First Chair

Sabloff, Jeremy (Santa Fe Institute) [119] Discussant [208] Discussant [178] Discussant

Sabo III, George (Arkansas Archeological Survey)

[115] *A Comparison of Braden and Craig Style Birdman Motifs from the Spiro Ceremonial Center*

James A. Brown and colleagues have argued for the chronological priority of a Cahokia-derived Classic Braden style and its generative relationship to regional derivatives including the Craig style at Spiro. Brown also examined in some detail the Classic Braden "Birdman" motif, linking it to the Morning Star/Red Horn character prominent in nineteenth century myths preserved among several Siouan-speaking tribes. This paper compares thematic and contextual associations of Braden and Craig style Birdman images from Spiro, and suggests that the latter images reflect key characteristics of religious and ceremonial syncretism.

[115] Third Organizer

Safi, Kristin (Washington State University), Christopher A. Kiahtipes (Washington State University), Dave N. Schmitt, Jean-Paul Ndanga and Karen D. Lupo (Washington State University)

[53] *Neglected Pots: Compositional Analysis of Ceramics from the Northern Congo Basin*

Ceramics are the most ubiquitous archaeological remains in the Central African rain forest. Despite their abundance, little is known about the compositional variability of these materials across space and through time. Variation in the temper type, temper amount, and the number of clay sources used by prehistoric potters can clarify the degree to which the production process differed across communities. This preliminary study incorporates high and low tech analyses to evaluate the degree of compositional patterning in ceramics collected from excavations and surface contexts at Lumbomba and Poteme located in the northern Congo Basin in the Central African Republic.

Sagarbarria, Ryan (Antiquus Archaeological Consultants Ltd.)

[203] *New Perspectives on Slinging Stones: Persuasive Evidence of Sling Projectiles in the Pitt Polder of British Columbia*

An ongoing large-scale CRM project, implemented to test the majority of a 10,000-acre parcel of land in the Lower Fraser drainage, British Columbia, has identified persuasive evidence for sling hunting projectiles. A sample of 148 "sling stones," bi-conical/ovoid stones, homogenous in dimension, weight, and shape, have been collected from clusters found in the uppermost clay deposits of extinct marshlands adjacent to known pre-contact archaeological sites. This contribution aims to jointly apply ethnographic accounts, Salish oral narratives, and comparative statistical analyses to a large, reliably sourced sample providing a baseline study of this presently obscure hunting technology.

Sagarbarria, Ryan [203] see Eng, Jordan J.

Sain, Doug [90] see Smallwood, Ashley M.

Saitta, Dean (University of Denver)

[167] *Ludlow Massacre Archaeology in Community Context*

Archaeology at the Ludlow Massacre Memorial has an interesting social context. Fieldwork began against the backdrop of a local steelworkers strike that used the memory of Ludlow as important symbolic capital in the public battle for hearts and minds. Subsequent vandalism of the Memorial's stone monument increased the site's visibility and ignited a quest for more protected status. Recent designation of Ludlow as a National Historical Landmark illustrates what can happen when scholars and citizens make common cause. This paper reflects on what made the Ludlow project's community outreach a singularly rewarding experience for those who were involved in it.

Sakai, Sachiko (UC Santa Barbara)

[253] *Change in Production and Distribution Pattern of Olivine-tempered Ceramics in the Arizona Strip and Adjacent Areas in the American Southwest*

Olivine ceramics are widely distributed in the Arizona Strip and adjacent areas between A.D. 300 and 1300. Previous compositional analyses using LA-ICP-MS and INAA suggest that at least five clay sources were used in olivine-tempered ceramics found in various areas. In this paper, I will examine how selection of clay sources for olivine-tempered ceramics changed over time and why. To understand the diachronic change in clay source selection, I will use Luminescence dating to all ceramic samples examined by the compositional analyses. The ultimate goal for this study is better understanding of the production and distribution pattern of olivine-tempered ceramics.

[161] see Lipo, Carl P.; [253] First Organizer

Salas Carreño, Guillermo [18] see Mannheim, Bruce

Saldana, Melanie (California State University Los Angeles)

[148] *Speleothem Complexes as Sacred Space: An Analysis of Operation III, Lot Two in Actun Yaxteel Ahau*