show few limitations imposed by water chemistry, and wide variability in infiltration rates.

Lv, Enguo [179] see Guo, Wu

Lynch, Sean (University of Alberta) [220]

Portable-XRF Characterization of Archaeological Obsidian from the Middle Jomon and Okhotsk Periods on Rebun Island, Hokkaido, Japan

Ongoing excavations on Rebun Island in Northern Japan have demonstrated prehistoric use of obsidian persistently from the Middle Jomon to Okhotsk periods. Since obsidian does not occur naturally on Rebun or the neighboring islands of Rishiri and Sakhalin, only the transportation of raw material and/or finished tools over great distances accounts for their presence there. The nearest sources of obsidian are located on Hokkaido Island some 200 km away from Rebun, including separation by a 50 km stretch of the Sea of Okhotsk. Previous research in this region has shown that movement of obsidian from various sources on Hokkaido played a vital role in the entire lithic industry since the Paleolithic. As human mobility patterns varied in Northern Japan from the Middle Jomon and Okhotsk periods, the patterns of source exploitation are also believed to have changed. This expectation is tested by evaluating the sources of archaeological obsidian recovered from three archaeological sites on Rebun Island (Uedomari 3, Kafukai, and Hamanaka II) through portable-XRF. This method provides new insights into the dynamics of resource procurement and distribution among Middle Jomon and Okhotsk hunter– gatherers on Rebun Island.

Lynch, Daniel [276] see Becker, Rory

Lyons, Patrick (Arizona State Museum) [67]

The Davis Ranch Site: Archaeological Evidence of Kayenta Immigrants in Southeastern Arizona

The Davis Ranch Site, located in the San Pedro River Valley of southeastern Arizona, was excavated by Rex Gerald in 1957, under the auspices of the Amerind Foundation. Although a draft report was completed in 1958, the data have never been published. This site, as well as the nearby and contemporaneous Reiwe Ruin, yielded abundant and compelling evidence of immigrants from the Kayenta region of northeastern Arizona and southeastern Utah. Indeed, the evidence supporting a Kayenta presence at the Davis Ranch Site surpasses, both in quantity and quality, that recovered from the Maverick Mountain phase deposits at Point of Pines (the US Southwest's "classic" case study of how to reliably infer ancient migrations). In this paper, I report on a recently completed multi-year reanalysis of the Davis Ranch Site data. I also place the Davis Ranch Site – identified by Hopi cultural advisors as a kiuku (ancestral Hopi village, literally "footprint") – in the wider context of late-prehistoric ancestral Hopi migrations and the Salado phenomenon.

M. Kemp, Brian [38] see Lenci, Eric

Ma, Xiaolin [219] see Pechenkina, Ekaterina

Mabry, Jonathan [291] see Ballenger, Jesse

Mac Sweeney, Naoise (University of Leicester) [287]

Conceptualizing Communities

In archaeology, we have struggled with definitions of community. The community has been conceptualized as a natural social unit, the human correlate of the site; or as a form of social identity, actively constructed through social practice and unrelated to geography. Imprecise terminology and modern political rhetoric further complicate the issue. I argue that communities in archaeology should be thought of as both geographic and social – as identity groups constructed through social practice, rooted in the landscape. Residential proximity and shared space are not determinants, but factors which enable a specific form of group identity to crystalize. This emplaced group identity become salient only at specific times for specific historical reasons, and must be enacted in social practice in order to crystallize. The social practices have been variously termed affiliation dramas, enactments of community, and practices of affiliation. They vary in form, but there are several recurring key features which construct collectivity rather than distinction, unity rather than internal differentiation. To date, studies of identity have focused on the boundaries of identity and the construction of the Other. However, the notion of the collective “Us” is also relevant and must also be socially constructed.

Macario, Raquel (Universidad de San Carlos de Guatemala / CEMCA-Guatemala) [140]

The Conceptualization of Space at the K’iche’ Capital, Q’umarkaj, Guatemala

The Late Postclassic of the Guatemalan Highlands is characterized as a period with strong social and political dynamics. The social complexity at the end of this period is well documented in the indigenous texts from the 16th century as well as through the supremacy of one of the major social groups of this time, the K’iche’ Vinak. The social and political complexity detailed within these documents offer another dimension to the archaeological interpretation. Realized from the investigations at Q’umarkaj (2003-2007), the K’iche’ capital, it was observed that the elite K’iche’ lineages had a special handling and meticulous use of space in the construction of structures belonging to these lines; reflecting a systematic social and political ordering based on a complicated hierarchy. One of the most important architectural patterns from Q’umarkaj (Nim Ja and a temple) often differs in size, as well as in the level of their bases in relation to the level of the Plaza Principal, and their distance to the plaza. These data offer a chance to consider that at Q’umarkaj, the symbolism in the horizontal and vertical space added to the social and political settings of these tumultuous times in the Postclassic Highlands.

MacDonald, Brandi Lee (McMaster University), Martin Cooper (Archaeological Services Inc.), Fiona McNeill (McMaster University) and Joanne O’Meara (University of Guelph) [51]

Elemental Characterization of Pigments Used in Pictographs across the Lower Canadian Shield, Canada

The Canadian Shield Woodlands area boasts rich concentrations of pictographs, and extensive efforts have been made to locate and document regional-scale rock art traditions. Research on these pictographs has focused primarily on interpretation of imagery and metaphor, and to situate them within a broader context of landscape archaeology (Arsenault 2004, Dewdney 1970; Rajnovich 1994). However, there has been a lack of research focus on the pigments that were used to create the pictographs. By analyzing the raw materials used we are able to glean further information on the activities surrounding the creation of pictographs and pigment procurement. We present the findings of a preliminary survey of the pigments used for rock painting concentrations in the Lake Temagami, Lake Obabika and French River areas of Ontario, Canada. By determining the geochemical signature of red ochre pigments, it is possible to identify variability in pigment sources used, and in some cases, to trace those pigments back to their geologic origin. We used non-destructive portable x-ray fluorescence equipment to geochemically characterize the paintings. Results show that multiple, distinct chemical groups of ocher were used within and between these areas.
MacDonald, Danielle (University of Toronto)

[98] The Effect of Use Duration on Surface Roughness Measurements of Lithic Tools

Previous experimental research has shown that laser scanning confocal microscopy has the potential to be a useful quantitative tool for the study of prehistoric stone tool function. This research has demonstrated that basic roughness parameters can characterize use-wear on lithic surfaces, distinguishing between different contact materials. However, further exploration is needed into the effect of use duration on worn lithic surfaces. Does worn surface texture produced by different contact material vary with duration of use? Understanding the changing nature of worn surfaces will help move the field of lithic use-wear quantification forward. This presentation will focus on a current program of experimental research that addresses how the length of use affects the surface characteristics of lithic tools. In this study, tools were used on several contact materials at increasing time intervals. Surface roughness characteristics were measured at each interval using a laser scanning confocal microscope. These experiments allow for the comparison of surface parameters over time on the same tool, tracing changes in wear on the tool surface. In this paper the results of this study are presented and avenues of future research that can contribute to the development of an applied method in quantitative microwear analysis are highlighted.

[98] Chair

MacDonald, Robert (University of Waterloo)

[257] Public Issues Anthropology as a Framework for Teaching Archaeology and Heritage Resource Management

For humans, heritage is the nexus which connects the past with the future. A key component in the construction of identity—both individual and cultural—heritage is constantly being created and interpreted from information about the past. Archaeological anthropologists have traditionally focused on what the archaeological record can tell us about the people who originally created it and how we can use this knowledge to contribute to our social science. We have paid much less attention to how this information may affect living descendants of those ancient cultures. Increasingly, however, particularly where indigenous peoples are involved, we find ourselves confronted by descendant communities which view the archaeological record as an important part of their cultural patrimony and not the exclusive domain of professional archaeologists. This paper explores how the developing field of public interest/issues anthropology is being used at the University of Waterloo as a framework for teaching an expanding variety of professionals how to approach archaeology and heritage in ways that are holistic, transdisciplinary, respectful, and socially engaged.

MacFarland, Kathryn (School of Anthropology, University of Arizona)

[153] The Anthropology of Unconventional Ideas

How well does archaeological inquiry incorporate historical description? Popular books such as J.W. Buel’s 1889 Sea and Land, in which man-eating plants and women-stealing orangutans are described in great detail, are easily ignored as “weird.” Descriptions of various historical groups, such as the Scythians, provided by Herodotus in The History (ca. 450 BCE) could be viewed with similar skepticism. For example, Herodotus described Scythian weather as so strange that feathers fall from the sky. Herodotus had apparently never seen snow. This description of foreign weather, while unconventional, is still useful to archaeological inquiry and, when contextualized, can help better orient archaeological study of a region. Unconventional ideas help anthropologists identify and delineate conceptual metaphors, symbolic systems and general ideas that the writer has about the world or protohistoric subjects. Historical description is crucial in identification of material signatures of religious belief and landscape usage of historic and proto-historic peoples, and identification of social complexity, not obviously visible archaeologically. I propose that any culture’s unconventional ideas, expressed in written documents and large scale patterned behavior, constitutes a robust line of evidence for anthropological inquiry, particularly when researching elements of social complexity, such as religious beliefs.

[153] Chair

MacFarlane, Gina [219] see Littleton, Judith

Macgregor, Oliver (Australian National University) and Alex Mackay (Australian National University)

[150] Distinguishing Artifacts from Naturally Flaked Mimics, Using Flake Scar Size

Collisions between rocks as they are transported by natural processes can create impact fractures that have Hertzian initiations and conchoidal shapes. These fractures are created by the smattering of force on a small area, and to this extent the fracture process is identical to the fracture process created by human knappers. Distinguishing natural flaking from human flaking is problematic, as natural collisions create flaked rocks that mimic cores. During a collision between two rocks, the energy available to initiate a fracture event is proportional to the mass of the rocks involved, as this affects their momentum and inertia. As a consequence of this, on rocks which are naturally flaked the size of flake scars should be correlated with the mass of the rock. We examine assemblages of flaked rocks from two environments in Australia where high-quality flakeable stone is abundant and ground surfaces are periodically flooded. Flake scar sizes are patterned according to the mass of the rocks they are on, and the association between these two archaeologically visible variables can be used as a means of distinguishing assemblages of naturally fractured rocks from artificial cores.

Machado, Juliana (Universidade Federal de Santa Catarina)

[60] Places of People: Women, Plants, and Exchange Networks on the Amazon Delta

For the riverine of Caviana Island, on the Amazon delta, landscape is a social place and keeps the memory of the relation between the indigenous past and the riverine present. This paper deals with the relationship between plants and people. Planting is part of a set of practices, from obtaining the vegetal within the forest until its transformation into plant in the domestic environment. The forest is inhabited by enchanted beings and non-human mothers of places, beings capable of activating a process of transformation of the human to the one who charmed him. In this instability of the human condition, plants play a key role because they provide the healing of this spell, the reversal of the process, ie the possibility of permanence of their existence. By selecting and planting the women transform spaces into “places of people” through the exchange of plants and medicines among relatives, neighbors and friends. Exchange is an act of caring, which reaffirms the social bonds between humans and nonhumans engaged in reciprocal relations while binds them to specific places, reinforcing their sense of territoriality and belonging within the island.

Machicado, Eduardo (University of Cambridge) and Anna Browne Ribeiro (The Ohio State University)

[60] The Many Faces of Amazonia: Reconceptualizing Scale, Dimensions, and Cultural Boundaries

Amazonia, a region almost the size of Western Europe, has historically been treated as homogeneous. Archaeologists have attempted to create a Pan-Amazonian narrative, relying chiefly on
linguistic and ceramic data. These attempts have been hindered by the lack of solid chronological, stylistic, and spatial data available for this macro-region. Every new research endeavor challenges our partitioning. As an example, recent work in the Llanos de Moxos, Bolivia, has shown more local diversity in settlement patterns and ceramic styles than previously known. Similarly, work in the Central Amazon has shown internal nuances in settlement and ceramic data, as well as connections to more distant parts of Amazonia.

Intensive research has created the conditions for comparing and connecting these distinct sub-regions in the realms of subsistence practices and foodways, landscape transformation and management, spatial organization, and symbolic systems. In this session we explore historical and cultural connections across portions of Amazonia. Moving toward a new, dynamic synthesis of the culture history of the region, we draw upon locally developed data, creating a "mid-regional" scale that is defined by socio-cultural phenomena and chronological data, rather than by political, geographical, or other arbitrarily defined spatial boundaries.

Chair

Macho, Gabriele


The first unambiguous hominins are dated to about 4.2 Ma (Au. anamensis), and may perhaps be extended to 4.4 Ma (Ardihiphecus ramidus). The hominin status of earlier finds, i.e. Omorin tugensis and Sahelanthropus tchadensis, is more contentious and these species are not commonly accepted as belonging to the hominin clade. Global environmental fluctuations and local habitat changes are thought to underlie the evolutionary pathway of hominins, as well as other mammalian groups, their movements and biogeography. The fossil remains of A. bahrelghazali from Chad at 3.0-3.5 Ma are limited and it is not certain that they are a separate species or merely a subpopulation of A. afarensis. Regardless, the western extension of this hominin is remarkable and requires closer inspection, especially so as this dispersal into Central Africa does not seem to be paralleled by other mammalian taxa, e.g. cercopithecines and carnivores. As our knowledge of Pliocene climate and vegetation in tropical Africa has improved considerably over the last few years, a new look at the dispersal of hominin is warranted. Here I will bring together the available information of climate, ecology and mammalian biography and appraise the selective forces that may account for the dispersal of A. afarensis.

MacInnes, Brendan (Central Washington University) and Ben Fitzhugh (University of Washington)

[233] Controlling for Landform Age when Determining the Settlement History of the Kuril Islands

Archaeological investigations of human settlement patterns can be strongly biased by evolution of the Earth’s surface in a dynamic landscape, such as the Kuril Island volcanic arc. Recent archaeological work in the Kurils established a chronology of human settlement heavily biased towards the later Holocene, necessitating inquiry into whether these settlement ages have been dictated by the age of the landform on which they rest. The bulk of earliest Kuril settlements date to the Late Holocene, younger than 4500 14C years B.P. Landscape-modifying geological forces that were active during settlement include eustatic sea level fall, tectonic emergence, volcanic eruptive processes (including lava, pyroclastic, and debris flows), coastal aggradation, and dune formation. In our analysis, we consider the impacts of these processes on archaeological records in the Kurils by comparing site occupation histories, using basal ages and pottery typology, with estimated landform ages. Out of approximately 100 sites analyzed, 30% were likely created since ~4500 years BP, 15% were earlier Holocene, 40% were Pleistocene or older, and 15% were of indeterminate age. These results show that while some minor bias can be expected, the migration record into the Kuril Islands is not constrained by landform age at a majority of sites.

MacIntosh, Sarah (University of Nevada, Las Vegas) and Levent Atici (University of Nevada, Las Vegas)

[3] Antlerworking at Körtek Tepe (SE Turkey) during Pre-Pottery Neolithic A (PPNA)

Recent archaeological projects in southeastern Anatolia (Turkey) have shed new light on Neolithic archaeology and contributed to our understanding of the revolutionary changes in human lifeways during the Terminal Pleistocene and Early Holocene in the region. Körtek Tepe is one of the relatively new Pre-Pottery Neolithic A (PPNA; 10th millennium BP) sites excavated in the region with extraordinary findings. A most exciting and a rather unique aspect of Körtek Tepe is its fascinating mortuary practices. Körtek Tepe has not only yielded a large number of burials (currently over 400) with rich and diverse grave goods and sophisticated symbolism, but also round architectural structures (currently over 115). This paper presents the preliminary results of analysis on antler technology to add new data to ongoing zooarchaeological and archaeological research at Körtek Tepe. The antlers are both utilitarian and symbolic and ritual in nature, and we specifically seek to document antler use and technology during a period of rapid social, ideological, and economic change at the end of the Pleistocene.

Mackay, Alexander (Australian National University) and Emily Hallinan (University of Cape Town)

[28] Provisioning Responses to Environmental Variation from MIS 4-2 in the Western Cape, South Africa

The Western Cape of South Africa witnessed recurrent turnover of technological systems in the period from 75-20,000 years before present. This is also a period of rapid environmental change. In this paper we use data from open and shelter sites to examine differences in technological organization between industries such as the Still Bay, Howiesons Poort, post-Howiesons Poort and Robberg. We find that technological differences are underpinned by marked reorganization of provisioning systems, and discuss how these can be viewed as broad responses to local environmental variation through the late Pleistocene.

Mackay, Alex [76] see Nightingale, Sheila

Mackie, Quentin [137] see Orchard, Trevor

Mackie, Quentin (University of Victoria), Jenny Cohen (University of Victoria) and Daryl Fedje (Parks Canada)

[137] Kiligi Gwaay: New Data from a 10,700-Year-Old Water-Saturated Site on the Northwest Coast of North America

Kiligi Gwaay is a water saturated intertidal archaeological site in southermost Haida Gwaii, British Columbia, which dates to a brief window around 10,700 cal. B.P. Joint excavations between the University of Victoria and Parks Canada in 2001 and 2002 recovered a large assemblage of stone tools and faunal remains, and a more limited but informative assemblage of perishable technologies made of wood, split root, and bone. The overall assemblage suggests interpretation as a summer base camp of people fully fluent in marine resources. Further work in the summer of 2012 has added significantly to the paleobotanical, lithic, and organic evidence from this site. These new data are the focus of this paper. We contextualize the new finds within the known faunal and lithic assemblages, and we discuss the implications of this wet site, one of the earliest of its kind in the Americas, for the early occupation of the Northwest Coast.

MacLellan, Jessica (University of Arizona)

[78] Early Households and Domestic Rituals at Ceibal, Guatemala
Ceibal is a large Maya center located in the lowlands of Guatemala. The site was first occupied around 1000 B.C., at the beginning of the Middle Preclassic period. Structure 47-Base is a large platform near the site core. The platform supports a residential group and was first investigated by Gair Toutertot in the 1960s, as part of his survey of the periphery of Ceibal. During the 2012 field season of the Ceibal-Petexbatún Archaeological Project, extensive excavations were carried out at Structure 47-Base. In addition to later material, Middle Preclassic house platforms, burials, caches, and activity areas were uncovered. The results provide new information about early domestic rituals and craft production. In particular, one Early Middle Preclassic (Late Xe ceramic phase) burial of multiple individuals is important to our understanding of mortuary practices at early Ceibal. Future investigations at Structure 47-Base will likely yield additional valuable data about the households of this era.

MacNeilage, Peter

Speech and skilled right hand action are the two signatures of human output. Both are usually controlled by the left hemisphere of the brain. Manual gestures are increasingly implicated in language evolution scenarios. While considered unique to humans, both functions may be offshoots of a vertebrate-wide tendency for left hemisphere control of the body under routine conditions (MacNeilage et al., Scientific American, July 2009). In both functions, the evolutionary progression has been toward increasingly fine control of the terminal components of the two systems, the articulatory component of speech and the hand/finger component of the manual system. For speech, the progression may have been evolution of syllable “frames” from the mandibular close-open oscillation of chewing, via monkey “lipsmacks”, followed by programming of the oscillation with consonants (closing phase) and vowels (opening phase) (MacNeilage, Behavioral and Brain Sciences, 1998, 21, 499-511). Two stages in manual evolution may have been have an early rightward whole body asymmetry, evident in marine mammals and the earliest primates (prosimians), and then right handedness, seen in fine skill components of manipulation, and bimanual coordination (e.g., in tool use), and gestural communication in higher primates (MacNeilage et al., Behavioral and Brain Sciences, 1987, 10, 247-263).

MacRae, Ian (Wilfrid Laurier University)

[259] Diversity and Difference: Interpreting Naturalistic Miniatures in Dorset Archaeological Art
Dorset art objects make up one of the premiere Canadian museum collection in any mode, form, or genre. These are priceless, irreplaceable artworks that deserve to be better known, appreciated, and understood. The contemporary context for the interpretation of Dorset carving begins with Swinton and Taylor’s twinned, seminal papers in 1967, which championed “The Magico-Religious Basis” of Dorset Art. This remains the mainline of our understanding of what is in fact a highly differentiated material culture. This paper is based on research in major Dorset and Inuit museum collections in Canada and the United States. It suggests that such an interpretive paradigm, in which Dorset art is related to “shamanistic religious practices,” that is, to totemism and sympathetic (primarily hunting) magic, often at least partially through ethnographic analogy with the historical Thule Inuit culture, works to reduce and overdetermine a marvelously complex field. Through analysis of an already recognized but under-interpreted mode in Dorset carving – the “zoomorphic series” of naturalistic carvings, particularly bears and seals – this paper posits alternative, possibly vernacular or quotidian, interpretations of a material culture that is often judged to be among the outstanding arts that the world has ever known.

Macy, Kimberly (University of Washington), Ben Marwick (University of Washington), Cyler Conrad (University of Washington) and Alex Mackay (Australian National University)

[184] Identifying Changes in Sediment Sources in Middle Stone Age Deposits Using ICP-AES at Klipfonteinrand, South Africa
In this poster we present sediment chemistry data from Klipfonteinrand rockshelter, South Africa and nearby landscape locations. The aim was to determine characteristic elemental profiles for the major geological provinces surrounding the site and identify these profiles in the archaeological deposit. This allowed us to identify shifts in the source of sediments in the depositional history of the archaeological site. We used a modified EPA acid digest protocol to extract analytes for determination of elemental concentrations using ICP-AES. A series of clustering techniques followed by linear discriminant analysis were used to identify characteristic elemental profiles in the sediment samples and link the landscape samples to the archaeological samples. We found a clear shift in sediment sources during MIS 5 at Klipfonteinrand and suggest some links to other geoarchaeological data from the site and regional climate patterns.

Madden, Gwyn [38] see Karsten, Jordan

Madden, Gwyn (Grand Valley State University), Elizabeth Arnold (Grand Valley State University), Jordan Karsten (SUNY Albany) and Stanley Ambrose (University of Illinois, Champaign-Urbana)

[186] Using Isotope Analyses to Examine Origins of Agriculture and Neolithic Farmers in Western Ukraine
Verteba Cave is associated with the Trypolie culture in Ukraine, also known as the Cucuteni in Romania and Moldova. The cave, formed of gypsum, measures 8555 meters in length (Nikitin et al. 2010) with at least four areas from which human remains associated with the Trypolie have been found. Human activity at the site dates between 3951-2620 cal B.C. (Kadrow et al. 2003), with a peak in activity around 3500 B.C. in the area where the skeletal materials analyzed were recovered (Nikitin et al. 2010). It has been suggested that this peak in activity was associated with a decline in the local population. It is theorized that during this period immigrants were moving into the area bringing with them new technologies causing conflict or that local populations began warring over agricultural resources. Stable carbon and strontium isotope analyses were conducted on tooth enamel from three individuals in an attempt to identify possible migrants. Preliminary results show remarkably similar isotopic values and suggest that all individuals were from the same locality and shared a similar diet. Current analysis of shell samples is being conducted to establish a local baseline signature.

Magaña, Evelia [37] see Cucina, Andrea

Magill, Clayton (The Pennsylvania State University), Gail Ashley (Rutgers University) and Katherine Freeman (The Pennsylvania State University)

[172] Plant Biomarker and Isotopic Perspectives on Early Human Habitats at Olduvai Gorge
Sedimentary organic matter preserves a spectrum of ecological and environmental signals from the past. Yet these signals occur as a heterogeneous and complex mixture of molecular structures derived from many sources, including plants and microbes. Distinctive molecules derived from only ancient leaves – plant biomarkers – afford a means to circumvent this complexity, and are well preserved in lake sediments and ancient soils (paleosols). Plant biomarker properties reflect the combined influence of botanical source, growth conditions and climate. Abundance and distribution patterns of plant biomarkers in modern plants are functions of both plant type (e.g., C3 vs. C4) and growth form (e.g.,...
woody vs. non-woody). Stable carbon- and hydrogen-isotope compositions (expressed as δ13C and δD values) of plant biomarkers are sensitive to plant type as well as seasonality, water availability and canopy closure. Taken together, such data provide a framework for reconstructing terrestrial paleoecology that directly compliments more traditional approaches.

Here, we will highlight plant biomarker signals from lake sediments and paleosols from Olduvai Gorge that inform our understanding of early human habitats. Our data illustrate the utility of plant biomarkers for reconstructing ancient habitats through time (catchment-scale) and space (microhabitat-scale) with focused regard for their wider application.

**Magloughlin, Amara (Columbia University)**

[134] "Islands of Security," Islands of Terror: The Wailing In of Palestine

As the Israeli government continues to build the border wall separating Israel off from the Palestinians, it is essentially changing the Palestinian landscape into what can best be described as an island. This wall blocks the access of the Palestinians to roads and resources and forces them to adapt to a new terrain, isolated in the etymological sense of the word, "made into an island." Palestinian refugee camps in Lebanon are euphemistically referred to as "islands of security," insinuating that they are outside the control of the country’s police, which is in actual fact false. What effect do these violent, political borders have on the identity of a culture? And to what extent does an analysis of Palestine and its camps as metaphorical islands, with continually adjusting territorial lines, open up or close down new lines of challenging the current political landscape?

Magoon, Dane [190] see King, Stephanie

**Maher, Lisa (University of California Berkeley) and Margaret Conkey (University of California Berkeley)**

[80] Homes for Hunters? Exploring Hut Structures at Hunter-Gatherer Sites in Upper Paleolithic Europe and the Epipaleolithic of Southwest Asia

In both Southwest Asia and Europe, only a handful of Upper Paleolithic/Epipaleolithic sites attest an aggregation of hunter-gatherer groups including evidence of individual dwellings, tents or hut structures. Paleolithic huts are depicted as mere shelters and ephemeral rather than as places ‘built’ into a landscape with meaning beyond refuge from the elements. In fact, this functional interpretation of shelters is embodied in the very terminology where mobile hunter-gatherers build and occupy huts that form campsites while sedentary Neolithic villagers occupy houses or homes that form communities. Here we examine the evidence for Upper Paleolithic and Epipaleolithic structures in Southwest Asia and Europe, offering insights into the complex ‘functions’ of hut or tent-like structures and examining perceptions of space between hunter-gatherers and later farming communities. We do this through recent examination of two contemporary, yet geographically and culturally distinct datasets: the Upper Paleolithic (especially Magdalenian) evidence in France and Epipaleolithic record (especially Kharaneh IV) in Southwest Asia. A comparison of the evidence for hut structures from these sites and regions suggests several similarities in both the nature of these huts, their association with activities related to hunter-gatherer aggregation, and their treatment by us in relation to later Neolithic homes.

[80] Chair

**Mahoney, Shannon (College of William & Mary)**

[115] Post-Emancipation Community Building at Charles’ Corner in Tidewater Virginia

Immediately following the U.S. Civil War, social and political conditions on Virginia’s lower peninsula facilitated the establishment of several African American settlements between Hampton and Williamsburg. A study of one of these residential areas, Charles’ Corner, allows us to examine the role of community building among rural African Americans following Emancipation and leading into an era dominated by legalized segregation. Ultimately, many of the African American residents on the peninsula were subject to mass displacement as the federal government commandeered land for both military and recreational use along the shoreline during the twentieth century. Nevertheless, fifty years of Charles’ Corner history remains preserved in archaeological sites and recorded in the oral histories of former residents. This information presents an opportunity to examine the socioeconomic processes of establishing and maintaining these neighborhoods from the residents’ perspective and provides data on the ways in which African American families organized and mobilized in the decades immediately following the Civil War and Reconstruction. The lives of rural African American residents at Charles’ Corner also provide a narrative that contrasts with that of the more commonly related story of sharecroppers and tenants in the Jim Crow South.

Makarewicz, Cheryl [266] see Raad, Danielle

**Makowski, Krzysztof**

[132] *Staff Winged Gods and Noble Ancestors of the Wari Empire’s Lords*

The author revisits the influential interpretation of the relationships between Wari and Tiwanaku, based on the typological study of comparative iconography - ‘one staff deity –one religion - one empire - one leader’ - and discovers instead a great number of political actors, who are represented by their ancestors, and by remarkable diversity of staff deities, that looks like supernatural winged humans, felines, birds, fish, snails, and deer. These deities appear frontally or in profile, full body or just their heads, when they are represented in ceremonial clothes, vessels and ritual paraphernalia. Most of these deities have SAAIS origin, but some other has central Andean features and attributes. The ceremonies honoring the ancestors were apparently the main scenario in which power relations acquired legitimacy, political rights was negotiated and hierarchical relationships within the lineage were sealed, as suggested by the results of W.Isbell’s excavations in Conchopata and ours with M. Gierszy an P.Przadka in Castillo de Huarmey. The results of our study invite to reconsider the existence of the Wari ceremonial center in Pachacamac, but confirm the highest religious authority of Tiwanaku and his hypothetical solar god.

**Malafouris, Lambros (Keble College, University of Oxford)**

[14] *How to Think about the Self: An Integrative Perspective*

The question has been raised recently about how we go on reconciling anthropological and cognitive science notions of the ‘self’. What I want to explore in this paper is how a relational ontology of extended selfhood can help us to achieve this goal. I will be asking two main questions: First, what is it like to be a person in a context where other than human entities are recognized as persons? Second, if we accept that selfhood is not something just located inside the individual, can it include material things as well? The empirical focus of my discussion will fall upon the long-term transformations and comparative examination of anthropologically recorded configurations of ‘peripersonal space’ – i.e., the activity space that immediately surrounds the human body.

Malagó, Aldo [224] see Araujo, Astolfo

**Maldonado, Blanca (El Colegio de Michoacan, A.C.)**

[59] *New World Metallurgy: A Comparative Study of Copper Production in the South Central Andes and West Mexico*
The development of technology in the New World followed its own path, both similar and different from that of the Old World. The knowledge of metallurgy and metalworking evolved and spread over much of the area occupied by high civilizations in the Americas. Having emerged in the Andean region of South America, metallurgy seems to have transferred from south to north, as far as Mesoamerica, where it developed into local technological traditions. Copper and its alloys have shown to be the material of choice for most pre-Columbian metallurgical industries. These materials were fashioned mainly as ornaments used in religious ceremonies and for the enhancement of elite cultural status. The archaeometallurgical record for this vast region, however, is fragmentary and dispersed. Most of the available information on metallurgical processes is largely based on metallographic analyses of finished products and thus, are often restricted to the final stages of production. The present paper attempts to comparatively study the complete metallurgical operational chain including ore sources, mining technology, mineral processing and extractive metallurgy, and structure the interactions among these aspects of production in different regions in South America and Mesoamerica, with an emphasis on the South Central Andes and West Mexico.

Maldonado, Ronald (Navajo Nation Historic Preservation Dept) [123]

Navajo Cultural Affiliation Reach by Reach: A BOR Project in the San Juan Basin

The Navajo Gallup Water Supply Project (NGWSP) is a 280-mile long pipeline that will bring San Juan River water to the Navajo Nation, Jicarilla Apache, and City of Gallup as part of the New Mexico Water Settlement. The Pipeline will be constructed on the northern, eastern, southern and western boundaries of the San Juan Basin. There will be numerous ancillary waterlines to serve Navajo communities within the Basin itself. An estimated 700-plus archaeological resources will be impacted by the construction of the project. The San Juan Basin plays an important role in Navajo beliefs, as within the Basin lie several clan origin places and ceremonial histories. More importantly, it is where the Navajo became Navajo. With the collapse of Chaco, oral tradition tells us that the Navajo abandoned the old ways (living in Pueblos) and began a new life. The project’s massive size and the comprehensive sampling universe throughout the Basin provides the potential to answer some of the fundamental questions regarding Navajo origins and to evaluate the correspondence between Navajo oral tradition and the archaeological record of the San Juan Basin. [174]

Discussant [152]

Maldonado, Jesus [172] see Hofman, Courtney

Maley, Blaine (Des Moines University), José Capriles (University of Pittsburgh), Freddy Paredes-Ríos (Museo Nacional Paleontológico y Arqueológico de Tarija) and Bernardino Mamani (Museo Nacional de Historia Natural) [38]

A Comparative Analysis of Two Early Holocene Human Skeletons from the Bolivian Andes

Across the New World, human variation prior to the mid-Holocene is poorly understood due to the relative scarcity of archaeological sites with complete human skeletal remains. Additionally, the timing, size, and cultural attributes of the initial migrations for these early occupations are still unclear. Although there are a number of sites in South America with early human burials, there are few well-studied archaeological sites with human remains from the geographically complex Bolivian Andes. In order to improve our understanding of the initial process of human colonization in this region, this research presents the first comparative skeletal analyses of two complete early Holocene individuals from the Bolivian Andes: Nuagapu (Chuquisaca) and San Luis (Tarija). Analyses include demographic data and functional morphology assessment, along with a discussion of their broader chronological, archaeological and paleoenvironmental context. Preliminary assessment of this material is consistent with the high variability characteristic of other early human groups occupying the New World during the early Holocene.

Maley, Blaine [38] see Maley, Blaine

Malloy, Maureen (Society for American Arch) [269]
Who Are Archaeology’s Interested Audiences?

Data from Public Inquiries to the Society for American Archaeology, 2002-2012

The Society for American Archaeology receives inquiries from hundreds of people each year that have some interest in the field of archaeology. Public inquiries come via email, phone calls, and snail mail; from students and teachers; from professional and avocational archaeologists; from both friends and foes of archaeology. What do these inquiries reveal about archaeology’s interested publics? Who contacts SAA? What kinds of information do they seek? Has the nature of these public inquiries changed over time? How have Wikipedia and Google searches affected the types and frequency of public inquiries about archaeology? This poster will summarize and present research on archaeology’s audiences based on 10 years of data collected by the SAA Manager, Education and Outreach.

Mamani, Bernardino [38] see Maley, Blaine

Manahan, T. (Kent State University), Mandy Munro-Stasiuk (Kent State University), Corrine Cockley (Kent State University) and Derek Salustro (Kent State University) [125]

Evaluating Ground Penetrating Radar Identification of Architectural and Archaeological Features in a Karst Environment: A Case Study from Xuenkal, Yucatan

This paper evaluates the accuracy and efficacy of GPR survey conducted prior to initiating excavations of Structure 9L-21 at the ancient Maya center of Xuenkal. Five hand-collected GPR 200 Mhz grid surveys identified architectural features including masonry walls, entryways, floors, and construction pens. Other anomalies included burials, rock piles, and bedrock rises. These features were identified from 3D GPR models, and horizontal and vertical slices through the datasets. We examine the types of signatures identified by the GPR and compare them to what was revealed by the broad horizontal excavation area. Many anomalies, though not all, were confirmed, demonstrating the usefulness of GPR for identifying potential features prior to excavation. One drawback was inaccurate and often exaggerated depths of anomalies calculated by the GPR. Likely this was due to the GPR signal traveling through a mixture of matrices including air cavities in loose rubble and solid masonry and limestone blocks, each having distinct dielectric properties. Despite challenges of operating the GPR in a hot, humid, tropical karst environment on a loose limestone rubble surface, we conclude that the GPR method is excellent at detecting architectural and archaeological features, and thus allows for preliminary reconstruction of architectural details prior to excavation.

Mancini, Maria Virginia [28] see Franco, Nora

Mancini, Jason (Mashantucket Pequot Museum/UCONN) [223]

(Re)Collecting New England’s Indian Whalemen

Though the age of whaling is long past, stories of Indian whalemen persist today among New England’s tribal communities as well as in other indigenous communities globally. Alongside
these memories are objects that tell of many other experiences and hint at a constellation of intercultural exchanges. In the early twentieth century, many of these “memory pieces” were acquired by outsiders and became part of Western museums and private collections. An unknown number of these cultural materials remain in the possession of Native families today. Most of these object histories have been subverted by the Western collection practice of detaching objects (whether viewed as art or artifact) from their cultural contexts and by marginalizing Indian histories that fall outside of anthropology’s “ethnographic present.” Though many of these objects have had their contextual histories compromised, it is the goal of this essay to recover and reconstitute these narratives. As points of contact, cultural exchange, and community memory, these objects, once reunited with local and tribal histories, reveal traveling histories that were, at one time, regular occurrences.

Mandel, Rolfe (Kansas Geological Survey) [224] The Application of Geoarchaeological Methods in the Search for Pre-Clovis Sites in the Central Plains of North America

Archaeologists involved with the search for pre-Clovis sites are faced with a difficult task of locating what is likely a sparse, buried material record in vast, complex late-Quaternary landscapes. Using the results of recent geoarchaeological investigations in the Central Plains of North America, this paper demonstrates how archaeologists can focus their search by adopting a systematic geomorphological approach that considers differential preservation of sedimentary deposits in valley landscapes. Because pre-Clovis sites will occur only where there are deposits old enough to contain them, determining the numerical age and spatial pattern of those deposits has been an important aspect of the studies in the Central Plains. This has involved geoscientific methods, including soil-stratigraphic analyses of natural outcrops with thick deposits of alluvium and loess, to locate buried pre-Clovis-age landscapes represented by paleosols. Also, coring with a hydraulic soil probe has been employed where outcrops are absent. Localities with sedimentary deposits dating to ca. 20,000-13,500 cal. yr B.P. have been the targets of deep archaeological testing, resulting in the discovery of two sites that appear to contain pre-Clovis cultural deposits.

Mandell, Elisa (California State University, Fullerton) [57] Beyond Death: An Analysis of Secondary Burial Practices in Costa Rica

Originating from the area of Greater Nicoya, Costa Rica, a small group of ceramic masks (ca. 1-500 C.E.) shares unique qualities that distinguish them from other Pre-Columbian masks. Combining selective naturalism with abstraction, the masks depict an important biological and spiritual event: the transformation from life to death. In particular, I argue that these Costa Rican masks are distinctive in their portrayal of the postmortem biochemical events that accompany death, and in the high degree of accuracy used to communicate the complex series of physical changes that occur during decomposition. Observing and documenting the stages of putrefaction would have been important in cultures practicing secondary burial, where decedents experience two funerals. The tradition of secondary burials in this region is corroborated by the excavation of La Regla (ca. 500 B.C.E.), a cemetery located on the Nicoya Peninsula. Exploration of cross-cultural examples of secondary burial sites elsewhere in the Americas will elucidate the significance of this practice, as well as that of the role of the masks in ancient funerary rituals. Understanding what these Costa Rican masks may have meant to those who created and used them also relies on ethnographic and ethnographic studies of the indigenous Costa Rican Bribri.

Manguin, Pierre-Yves (Ecole française d’Extrême-Orient) [104] Regional Religious and Trade Networks in Early Historic Southeast Asia: A Pan-Regional Process

Combining data collected from fieldwork in three coastal regions (Mekong delta, West-Java and Southern Sumatra) with reassessments of earlier dogmatic interpretations by archaeologists and historians, this presentation will attempt to show how integrated, multi-cultural Asia-wide trade and religious networks contributed to early state formation processes in early historic Southeast Asia.

Mankel, Magda [121] Undocumented Migration, Boundary Enforcement, and Contemporary Archaeological Sites: Understanding the Modified Southern Arizona Landscape from the Perspective of Locals

Since the implementation of the border enforcement strategy known as “prevention through deterrence” in the 1990s, the southern Arizona desert has served as a major gateway for undocumented migrants seeking entry into the United States. Over time, increased migrant traffic and border patrol surveillance have significantly modified the wild lands of southern Arizona. Such modifications include increased numbers of pedestrian and off road vehicle trails, the destruction of vegetation, the disruption of wildlife habitats and cattle ranching, and the creation of “migrant stations” (i.e., areas where border crossers rest and leave behind objects). Using a combination of participant observation and interviews with humanitarian workers and local residents, I outline and explore the broad range of behaviors, interpretations, and meanings that people generate as they interact with objects at migrant stations and the southern Arizona landscape. I argue that migrant stations, along with other modifications to the environment resulting from boundary enforcement have fundamentally changed the way many people conceptualize the “natural” environment of the region. Moreover, I posit that work focused on the emic perspective of local border residents provides new and important insight into people’s perceptions and understandings of place, migration history, and the formation of archaeological sites.

Mannen, Tiina (University of Queensland) [69] Indirect Evidence of Small-Scale Storage at Vale Boi, an Upper Paleolithic Site in Southwestern Iberia

Rendering grease from animal bones may represent some of the earliest indirect evidence for small-scale, long-term storage. Recognizing grease-rendering in faunal assemblages is challenging, as the practice can be mimicked by a number of other taphonomic processes. In this poster I present taphonomic and zooarchaeological analyses used to identify grease-rendering at Vale Boi, an Upper Paleolithic site in southern Portugal. This includes documenting taphonomic evidence such as percussion marks in the form of dents, crushing and cone-fractures, as well as investigating patterns of bone loss through multiple lines of evidence. The results of this multidimensional study strongly suggest that horse and red deer at Vale Boi were rendered for their grease, already in the early Gravettian (ca. 28,000 B.P.). Ethnographic studies and historical documents provide us with an understanding of the varied uses of bone-grease in the recent past, but also indicate the significance that a light-weight, calorie-rich resource would have represented for small, mobile groups in antiquity. Bone-grease may have had a variety of uses at Vale Boi, including equipping long and short-distance trips with a highly portable, nutritious resource; mitigating short or long-term resource-risk; and acting as a valuable, exchangeable surplus.

Manning, Steven J. [51] see Hurst, Winston

Manolakakis, Laurence [39] see Bellot-Gurlet, Ludovic

Manolakakis, Laurence (CNRS) and Olivier Weller (CNRS)
Emergence of Social Hierarchy in Europe (ca. 4600 B.C.): Just before Varna, Salt Cakes and Flint Blades

Although signs of durable social hierarchy are clearly visible in the Karanovo VI / Varna period, a number of economic and symbolic traits emerge earlier and are archaeologically visible in the preceding period. The Balkan Chalcolithic is characterized both by technological innovation (copper metallurgy, gold-working, graphite decoration, lever pressure debitage, salt cake production etc.) and by upheavals of economic and social nature (regionalized production, long-distance exchange, durable and hereditary hierarchy). Cemeteries on the Bulgarian coast, and especially Varna, concentrate products in ostentatious and spectacular manner, suggesting particularly large-scale patterns of circulation.

Well-established for the Varna Culture, these changes do not appear suddenly at this time. They are in fact the outcome of transformations that gradually emerged during the previous period (Karanovo V / Hamangia IV). Our aim here is to compare two special productions, very long flint blades and moulded salt cakes, both of which are well-documented in terms of sources and manufacture. The confrontation will examine modes of production, as well as the economic and/or symbolic value of the goods, within a chronological framework that is sufficiently broad to enable a dynamic approach to change in north-east Bulgaria in the first half of the 5th millennium.

Mans, Jimmy L.J.A. [292] see Siegel, Peter

Bioarchaeology and Perimortem Trauma

Perimortem trauma is difficult to identify unequivocally and has been a challenging topic for physical anthropologists since the earliest studies of skeletal trauma. Use of the biocultural perspective in conjunction with the inclusion of forensic and clinical technology and methodology increasingly gives bioarchaeologists greater means to develop a comprehensive picture of trauma in the past. New types of technology, such as 3D scanning microscopy, provide a way forward for studies of perimortem trauma in bioarchaeology through the production of digital images with precise morphological information. Further, incorporating historical and cultural information into trauma research through invoking the biocultural approach allows for deeper understandings of individuals' lived experience to be interpreted. It is also worth noting how bioarchaeology employs ethics along with respect for the individuals being studied, making this field a prime contributor to studies of perimortem trauma in past communities. By incorporating historical and cultural context with data derived from contemporary technology bioarchaeology is uniquely suited to contribute to investigations of perimortem trauma in past communities.

Marceinik, Arkadiusz (Institute of Prehistory, University of Poznan)

The Nature of Household in the Upper Level at Çatalhöyük: Smaller, More Dispersed, and More Independent Acquisition, Production and Consumption Units

The nature of household and farmstead in the upper levels at Çatalhöyük: smaller, more dispersed and more independent acquisition, production and consumption units. The final occupation phases at Çatalhöyük East mark a significant departure from the hitherto dominating neighborhood community as an organizing principle of the local society and signal the emergence of autonomous differentiated households. The paper will address multiple lines of evidence to explain the emergence of this new social system, its nature and mechanisms, and its consequences for the development of fully-fledged farming communities in the region and beyond. High resolution archaeological and archaeobiological data permit tracing changes in procurement, production and consumption during this period. In particular, new strategies for the acquisition of clay for mudbrick production and wood for fuel and fodder reveal changes in land use around the site. These patterns are supported by the recognition of new modes of caprine herding evidenced through oxygen isotope analyses. Changes in the consumption regimes will be investigated by wood use, house building, and eating practices.

Marcone, Giancarlo

Feasting and Burials in Local Communities at the Onset of the Andean Middle Horizon

Drawing from ethnohistorical sources, many Andean scholars have modeled Inca expansion as a highly ritualized political process, where feasting and ritual performance constitute its principal components. This model had been projected onto all Andean societies assuming that feasting activities played a similar political role and importance in older societies. Other voices propose that burial practices and ancestor veneration were also of central political importance in the Andean states’ expansionist projects. Ancestor veneration was thought of as the ideological base that upheld these entire systems. Increasingly, new voices are proposing that ancestor veneration and burial practices need to be understood in relation to feasting practices. It is only in this relational way that we can fully understand their political and social meanings. I propose that this is particularly true in the cases where local communities interact with expansionist politico. We propose from the evidence of Lote B, a small rural settlement in the Lurin valley, that the increase of feasting activities is related to the suppression of funerary practices or vice-versa. This inverse relation could inform about the nature of an expansionist project,
but also the compromise that takes place between local communities and expansionist polities in turn.

Marek-Martinez, Ora (Navajo Nation )

Scales of Consultation: Multiple Stages of Listening and Learning in the Navajo Nation

Almost all federal undertakings on the Navajo Nation initiate the Section 106 process, which includes consultation with the NNTHPO (HPD). Rarely will this consultation go beyond the Navajo Nation’s regulatory department-HPD. Various mechanisms are used by other departments to consult with Navajo communities which have a diverse range of opinions, but rarely are community concerns heard when consulting strictly with the THPO (HPD). This lack of communication between the central government and Navajo communities has created a ‘top-down’ attitude and process when managing cultural resources that sometimes creates conflict with local residents. Additionally, each community views archaeology and CRM through different lenses, which can complicate consultation and project efforts. In this paper I will discuss my experiences consulting with Navajo communities, what has worked and what hasn’t, and to provide recommendations to ensure that the voices of tribal communities are heard.

Marguerie, Dominique [137] see Steelandt, Stéphanie

Maric, Tamara (Laboratoire de recherches Ethnologie Préhistorique ArScAn (UMR7041))

Examples of Settlement Patterns in Pre-European Tahiti (Society Islands, French Polynesia)

Ancient Tahitian society was considered one of the most stratified among Polynesian societies. And while several ethnohistorical analyses describe the complex social classes and inter-related chiefdoms of the islands, very little archaeological data concerning settlement patterns on the island of Tahiti are known. This presentation examines different cases of settlement patterns on the largest island of the archipelago, in littoral zones, valleys and high mountains. These settlement patterns are drawn from archaeological data from the south-western zone of Tahiti (Teva i Uta chiefdom), and from the Papeno-o valley in the northern part of the island. Distribution of lands and natural resources will be examined according to the status of social groups - inferred from both archaeological and ethnohistorical data. Settlement patterns reflect variable situations, which could have resulted from different environmental conditions and different degrees of stratification of social groups, related to the historical trajectories of chiefdoms.


Markens, Robert

Ceramic Imagery and Political Power at Early Monte Albán, Valley of Oaxaca

The basis of political power during the first centuries of Monte Albán, one of Mesoamerica’s earliest urban centers, is a difficult topic to address. Apart from the Danzante Wall and the Viborón sculpture, early public monuments and their imagery have remained inaccessible beneath later stages of construction. There is, nevertheless, another extensive source of information that can shed light on the matter and which has received little systematic attention until now (Markens 2010). These are the numerous tomb and grave offerings dating to the Middle and Late Preclassic periods that Alfonso Caso and his colleagues (Caso and Bernal 1952; Caso, Bernal and Acosta 1967) excavated decades ago at Monte Albán. The many ceramic offerings, their novel imagery and their distribution in tombs and graves appear to relate to emerging social differences and the exercise of power. Here I report on some aspects of this imagery, its meaning and relationship to political power during the first centuries of urban life at this ancient Zapotec center.

Marquez-Morfin, Lourdes [46] see Storey, Rebecca

Marquez-Grant, Nicholas (Cellmark Forensic Services, UK and University of Oxford, UK)

Forensic Case Studies from the UK: Archaeological Contributions to the Search, Location, Excavation, and Recording of Clandestine Graves

A number of case studies in forensic archaeology particularly from England are provided here. In particular, the role of the forensic archaeologist in the search, location, excavation and documentation of clandestine graves is discussed. The integration of archaeology with anthropology and other environmental
Marquez-Morfin, Lourdes (Escuela Nacional de Antropología e Historia INAH) [46]

The Epidemics of Typhus and Cholera in the City of Mexico in the Nineteenth Century: A Reflection of Social Inequality

Studying infectious and epidemic diseases are an excellent tool to analyze and evaluate the relationships between society and health. The impact of infectious diseases was differential depending on the socio-economic and ethnic groups. In the case of outbreaks of 1813 typhus and cholera in 1833 that afflicted the inhabitants of the city of Mexico, its effects were not similar among the entire population. Social stratification as a product of inequalities had a decisive role in the way in which ethnic groups became ill and died. This paper describes the factors involved in causing individuals to get sick and die differentially, with respect to their material conditions of existence, to health services availability, and their biological conditions. From archival documents as primary sources of information, we discuss the city’s infrastructure in relation to health, networks of water and hygiene, and the distribution of the ethnic groups in the city. We present results on differential morbidity and mortality, according to the distribution of these groups in the city, for each of the two epidemics. Data reveal the negative impact that the precarious socio-economic conditions of indigenous people and poor groups of the city had before the onslaught of these two epidemics.

Marshall, Amanda (Kleanza Consulting) and Jennifer Lewis [262]

Salvaging the Past, Bridging the Present at Cedarvale, BC

This paper will present the results of salvage excavation of a large prehistoric site located on the Skeena River, near Cedarvale, BC. This excavation was undertaken in conjunction with the Gitxsan First Nation, and involved a team of people from diverse backgrounds: students, community members, volunteers and consulting archaeologists. This presentation will discuss the significance of this site, both scientifically, as well as culturally. The unique educational and team-building aspects of the project will also be discussed, and suggestions will be made for how similar projects may have an important role to play in the future of consulting archaeology in BC.

Marston, John (Boston University) [183]

Agricultural Adaptation to Highland Central Anatolia: New Data from the Iron Age City of Kerkenes

Adapting agricultural systems to new environments poses challenges to societies of all scales. High altitude environments in particular offer significant constraints to agriculture, with shorter growing seasons, cooler temperatures, and differential rainfall affecting the success of certain crops and farming strategies. Comparative analysis of agricultural societies moving into high altitude regions for the first time offers a valuable perspective on social processes of economic adaptation and on the environmental impacts of human land-use strategies across different climatic zones.

Archaeological plant remains from new excavations at the Iron Age city of Kerkenes, in central Anatolia (modern Turkey), provide the first data on agricultural adaptation to high elevation conditions in that region. Preliminary analysis of remains recovered over two field seasons suggests a reliance on bread or hard wheat as the primary crop, in contrast with more diverse economic system seen at contemporary sites at lower elevations. There is little evidence for the use of dung fuel and a greater reliance on wood for fuel needs, leading to different harvesting pressures on local woodland resources. This poster explores the implications of these preliminary data for future work in this region and for the comparative study of agricultural adaptation to new environments worldwide.

Martin, Fabiana Maria (CEHA-UMAG), Francisco Juan Prevosti (División Mastozoología, Museo Argentino de Ciencia), Charles R. Stern (University of Boulder-Colorado), Manuel San Román (CEHA-UMAG) and Fiavio Morello (CEHA-UMAG) [26]

New Late Pleistocene Faunal Evidences from Cerro Benitez, Ultima Esperanza, Chile

A recent archaeological survey at Cerro Benitez, Ultima Esperanza, Chile, revealed abundant evidence about the archaeology and paleontology at the end of the Pleistocene. Six new sites were added to four that were already known. A tephra identified at four of these sites, which are located at different altitudes, was previously fingerprinted to an explosive eruption of the Reclus volcano dated ca. 12,600 radiocarbon years ago. A rich fauna, dominated by Myodon darwini—which is present at the ten sites—Hipidion sadalsi, Panthera onca mesembria and camelids was recorded immediately below, and sometimes embedded in the tephra. At least two of these sites can be interpreted as extinct carnivore dens. Human presence was identified above this tephra, in one case with dates around 10,500 radiocarbon years and associated with extinct fauna.

Martin, Fabiana [26] see Morello Repetto, Flavia

Martin, Lucius (University of Oklahoma), Liana Staci Hesler (University of Oklahoma) and Andrew Gourd (University of Oklahoma) [169]

Success and Challenge: A Survey of Tribal Historic Preservation Offices within Oklahoma

The 1992 Amendments to the National Historic Preservation Act established the Tribal Historic Preservation Program and gave tribal nations the authority to take over aspects of the State Historic Preservation Office regarding historic preservation on tribal lands. As of May 2012 there were 131 formal tribal historic preservation officers in the United States; as of September 2012, 12 of Oklahoma’s 39 federally recognized tribal nations had undertaken this role. We surveyed the Tribal Historic Preservation Offices within the state of Oklahoma in order to get an idea of their current state of affairs and their interactions with Federal Agencies, CRM Firms and Archaeologists. We will report on the process and results of that survey here.

Martin, Lana (University of California Los Angeles) [217]

Modeling Political Organization and Food Production in Middle-Range Societies: A Case Study from Panamá

Explaining the nature and development of political organization in pre-Columbian chiefdoms (ca. AD 300 to 1500) of Central Pacific Panamá (Gran Coclé) and Western Caribbean Panamá (Gran Chiriquí) has been the aim of archaeologists working in the isthmian region. One model of economic development and regional interaction portrays Gran Coclé as a central core flanked by peripheral Gran Chiriquí settlements. Another model proposes that different societies at different levels of political organization (tribes and chiefdoms) co-existed in both Pacific and Caribbean watersheds. Current approaches to modeling the Panamanian interaction sphere rely on untested assumptions about plant food use in middle-range societies, implying demographic variability was driven by regional differences in rainfall, biogeography, and potential maize yield. This paper reviews these models in light of available settlement, subsistence, and paleoenvironmental data. In addition, this paper considers models of political organization and food production applied to other middle-range agricultural societies
in the New World, and presents a theoretical framework that draws upon the “historical processualism” paradigm, “historical ecology” research program, and “chiefly cycling” model. This framework offers potential for analyzing multiple lines of evidence and accounting for the ecological and social factors that led to variability in the chiefdoms of ancient Panamá.

Martin, Debra (University of Nevada/Las Vegas)  
[273] Can We Feel (Measure) Pain from the Bones? A Bioarchaeological Perspective  
The human experience of pain and suffering is difficult to measure on living, breathing humans who can articulate what hurts and how much it hurts. And, new research in neurophysiology suggests that pain receptors can be altered by life history, lived experience (culture) and individual anatomy. Given these challenges, using the empirical data cleaned from human remains, the mortuary component, site reconstruction and other features of the archaeological context can reveal openings where it is possible to discuss the ways that pathology and trauma limit and challenge the quality of life and hence aspects of the human experience. To not try and make linkages between the corporeal body and the lived experience of individuals and communities limits our ability to say anything of value to policy makers, the general public, and students. Examples of integrating theory, method and data to link indicators of stress on the body with levels of disability, daily or intermittent pain, and diminished capacity to adapt and respond to daily demands are briefly presented as ways forward in the archaeology of human experience.

Martindale, Andrew (University of British Columbia)  
[170] Quantification of Village Patterns in Tsimshian Territory  
Typologies of complex site forms such as villages are often influenced by judgmental use of hierarchical or selectivestep paradigmatic sorting to accommodate the wide range of potentially relevant variables. In this paper I present data from the Dundas Islands and Prince Rupert Harbour (n=76 villages) to quantify patterning in a suite of spatial variables derived from structure depressions, shell terrace features, architectural syntax, and topography. These data are used to evaluate proposed village typologies some of which derive from seminal publications and have long traction in Northwest Coast (NWC) archaeology, and some of which Ken and I made up in the pub. I propose that while the most widely recognized forms of village typology have merit, the range of variability in village form is greater than currently recognized. These results have considerable significance for the reigning progressive trajectories widely proposed for NWC settlement history.

Martindale Johnson, Lucas [62] see Brandt, Steven

Martínez, Desiree (Cogstone & Harvard University)  
[174] Communicating with a “Good Heart”: Strategies for Consultation  
With the increase in federal, state and local projects in recent years, consultation with tribes, as required by cultural resource laws and regulations, occurs more frequently now than ever before. However even with these increased interactions, there still are no coherent consultation definitions and processes; who should be contacted, how it should be done, and how to make successful consultation more likely. This results in confusion and frustration for all parties involved. Drawing upon personal experience and ethnographic research, this presentation will discuss effective strategies Native and non-Native persons working with Native American cultural resources can use during consultation. Using data collected through interviews and meeting observation of two inter-agency and inter-tribal groups based in the Columbia River Basin, it is argued that order to build a foundation for successful interaction, consultation participants must first remove various communicative, verbal and non-verbal, hindrances before any collaborative work plan can be accomplished. Participants must examine their preconceived notions of the “other side” in order to “set the tone” for effective consultation.

Martínez Taquena, Natalia (The University of Arizona)  
[169] Comcáac Archaeology: The Ethnography of Collaboration and Historical Data Integration  
In collaboration with members of the Comcáac (Serí) community of the central coast of Sonora, México, an archaeological research project developed that sought to integrate humanistic and scientific forms of inquiry, responsive to Comcáac ontology and oral tradition, to obtain a holistic understanding of the Comcáac past as it is embedded in the landscape, and its relationship with relevant contemporary issues like heritage preservation and land management. This paper describes failures and solutions to integrating ethnographic, archaeological, documentary, and oral historical data throughout the project’s collaborative production of knowledge. It employs a reflexive approach to explore the economic, social, political and ecological dimensions that have conditioned the creation of these historical narratives, as well as the present day social processes that promote their recreation. With the overall goal of stimulating discussion on how archaeologists can best innovate methods to bring together the multiple voices of the past and present.

Martínez Yrízar, Diana [234] see Zurita-Noguera, Judith

Martínez-Fuentes, Antonio [254] see Matheson, Carney

martinez-lópez, cira [252] see Winter, Marcus

Martín-Torres, Marcos [216] see Massa, Giovanni

Martirosyan - Olshansky, Kristine and Boris Gasparyan (Institute of Archaeology and Ethnography of Armenia)  
[208] Reconnaissance in the Arpa River Valley of Southeastern Armenia  
The Arpa River Basin (Vayoc Dzor Province, Armenia) served as corridor for human movement from at least the Achaemenid period through the Middle Ages. Today, the highways running through the province follow the mountain passes and connect Armenia’s northern provinces to those in the south, and the southern province with the Lake Sevan Basin in central Armenia. This paper presents results from a survey conducted in August of 2011. The survey identified 36 sites belonging to the Paleolithic, Neolithic, Bronze Age, Early Iron Age, Antiquity, and Early Medieval periods. Analysis of the settlement pattern of these sites indicates a distinct set of socio-political and economic settlement determinants for each period.

Maruyama, Masashi and Hiroki Kikuchi  
[228] Domesticating Sacrifice: Changes in Animal Sacrifice in Ancient Japan  
In this paper, I introduce shifting patterns in animal sacrifice from the Jomon period to the Heian period (B.C. 10,000 ~ A.D. 1200) in Japan. The hunting of wild animals was thriving during the Jomon period (B.C. 10,000 ~ B.C. 400). Subsequently, when rice paddy agriculture begins in the Yayoi period (B.C. 400 ~ A.D. 300) incipient pig feeding practices emerged. However, domesticated pigs did not spread rapidly, and it is not until the Kofun period (A.D. 300 ~ A.D. 700) when horses and cattle were introduced from the Korean Peninsula that livestock production flourished. In the Jomon period, deer and wild boar were hunted for sacrifice and food. In subsequent Yayoi period sites in western Japan, it is debated if drilled mandibles of wild boar were utilized as victims of
sacrifice, or as hunting trophies. In the Kofun period, customs of sacrificing horses spread from China via the Korean Peninsula. Ancient texts describe the praying for rain rituals, where horses and cattle are sacrificed. In this way, I evaluate the driving forces involved in shifting sacrificial practices through zooarchaeological and textual evidence. I argue this shift was the result of the introduction of the concept of “sacrifice” that emerged with the spread of domesticated game in Japan.

Marvin, Judith (Foothill Resources, Ltd.) and Rebecca Kellawan (Far Western Anthropological Research Group, Inc.) [270] With all Dips, Spurs, and Angles

As the old adage goes, “Gold is where you find it.” But where do you find it? As part of a federal project, Far Western Anthropological Research Group, Inc. and Foothill Resources, Ltd. conducted an intensive survey of BLM lands in the California foothills in the spring and fall of 2012. The project area largely consists of tributary creeks, rivers, and shorelines, with archaeological resources exemplifying the breadth and diversity of historic mining enterprises characteristic of California’s Mother Lode region. All of the identified mining resources were located on, adjacent to, or downstream of the Mother Lode Vein, indicating the importance of pre-field archival research in maps, documents, and mineralogists’ reports in the development of a research strategy for survey and recordation within the region. This poster will detail the methods used in preparation of the research design and the results of the survey.

Marwick, Ben [7] see Van Vlack, Hannah

Marwick, Ben (University of Washington) [150] An Experimental Study of Trampling at Malakunanja II, Northern Australia: Implications for the Timing of the Human Colonization of Australia

Previous excavations at Malakunanja II established as a site containing evidence relevant to the timing and character of the first human the human colonization of Australia. Since that time critics have argued that stone artifacts found in the oldest layers of the site were not recovered in their original deposition context, but have been relocated from younger layers by post-depositional processes. In 2012 we conducted new excavations at Malakunanja II. During excavations we conducted an experiment with experimentally-produced replica artifacts placed on the surface of the sediment recovered from the lower layers of the site and walked over in three episodes of five minutes each. The position and orientation of the artifacts were recorded before and after each episode to measure the vertical and horizontal displacement of the artifacts. We investigate the relationship between the Zingg shape classifications of the artifacts and trampling displacement in sediment resembling the original deposit. We find support for claims of artifact relocation and describe the implications for interpreting early deposits at sites in northern Australia.

[7] Chair

Masao, Fidelis [11] see Ranhorn, Kathryn

Maschner, Herbert [26] see Misarti, Nicole

Maschner, Herbert (Idaho State University), Jennifer Dunne (Santa Fe Institute) and Spencer Wood (Stanford University) [106] Food-Webs as Network Tools for Investigating Historic and Prehistoric Roles of Humans as Consumers in Marine Ecosystems

Humans lived on Sanak Island, Alaska, for over 6000 years. This fact motivated us to assemble a food-web describing the trophic interactions among species in the marine ecosystems of the Sanak Archipelago, integrated over thousands of years, based on a combination of field observation, experimentation, zooarchaeology, and ethnographic data. The food web is constructed of 513 taxa, 6774 feeding links, and an average of 13 links per taxon. We show that the humans are super-generalists, feeding directly on 122 taxa in the marine web. People are also super-generalists, extremely connected to other species, and highly omnivorous. They are #2 in path length and #5 in omnivory, and have short path lengths from all other species (1.76 links on average). 491 of 513 (96%) of species are within 2 links of humans. By feeding on many taxa across all trophic levels, humans have the potential to influence the persistence and stability of marine ecosystems. We present the largest food web ever created with humans as a key component of the total food web and will discuss these results and ways that food-web analyses can inform research on the ecology of humans in marine ecosystems.

[170] Discussant

Masele, Frank (University of Alberta) [8] Middle Stone Age Fauna from Loiyangalani and Magubike, Tanzania

The open air Middle Stone Age site (MSA) of Loiyangalani is located in the Serengeti National Park in northern Tanzania, while the Magubike rockshelter is in Iringa Region in the south. Both have produced MSA faunal assemblages in association with numerous stone tools. These MSA assemblages were probably produced by anatomically modern humans, well before the Out of Africa 2 dispersal. These faunal assemblages are currently under study for my PhD and will be used in order to determine subsistence practices, dietary choices, as well as other aspects of MSA behavior guided by optimal foraging theory. This will be done through the identification of animal species composition, mortality profiles and bone surface modification.

[192] Discussant

Mason, Owen [206] see Darwent, John

Massa, Giovanni (UCL), Marcos Martinon-Torres (UCL) and Mark Aldenderfer (University of California - Merced) [216] Chemical Compositions and Technological Traditions: A Study of Funerary Metal Artifacts from Samdzong (Upper Mustang, Nepal, ca. 400-600 C.E.)

This paper concerns the study of metallic artifacts recovered from shaft tombs at the site of Samdzong in Upper Mustang, a region of Nepal, dated to c. 400-600 CE. This region includes the Kali Gandaki valley, where a complex population history with multiple migration events is the subject of ongoing investigations.

The collection of objects includes copper vessels, copper beads, brass bracelets, iron daggers, a high tin bronze mirror and a unique gold and silver mask. The archaeometallurgical study sought to contribute to the broader aims of investigating the confluence of material and cultural traditions in the Upper Mustang.

Following a visual assessment of the assemblage in situ and screening analyses by portable pXRF, a selection of samples were examined by metallography and SEM-EDS. The combination of technological and chemical data shows cold-hammering and joining of metal as the dominant tradition, while the presence of iron, cast bronze and brass indicate different craftpeople and most likely, geographic origins. It is hoped that ongoing comparison with metallurgical styles, traditions and techniques in
the broader region will help our understanding of exchange or migration paths around the Himalayan arc.

Masse, W. (Los Alamos National Laboratory), Rubellite Kawena Johnson and H. David Tuggle [280]  
**Relative and Absolute Dating of Hawaiian Myth**

A significant percentage of Hawaiian myths and their detailed storylines are embedded in royal chiefly genealogies, providing a relative chronology for these myths. The stories contain remarkable supernatural elements with varying degrees of associated mana. By applying a natural sciences approach, it is possible to demonstrate that many evocative stories represent the observation of spectacular natural events including volcanic eruptions, total solar eclipses, and the passage of great comets. The myth storylines can be matched with historic records of specific celestial events observed in Asia, the Middle East, and Europe, or in the case of total solar eclipses, with reconstructions using astronomy software. Similarly, genealogically embedded myths about the creation of named lava flows can be matched with radiocarbon dates from burned vegetation under these flows. The data illustrate the richness and general reliability of Hawaiian genealogical oral tradition. The earliest absolutely dated myth is demigod chief Mauikalana snaring the Sun, which encodes a unique Samoan sunset total solar eclipse in AD 761. The Kalanu genealogy begins with an event that may encode a major Hawaiian tsunami with a calibrated radiocarbon date range of AD 440-670, and if so, raises the possibility of Hawaiian colonization before the 8th century AD.

Massey, Jason (University of Minnesota - Twin Cities), John Soderberg (University of Minnesota -Twin Cities) and Kieran McNulty (University of Minnesota - Twin Cities)  
**Approaching Human Figure Petroglyph Variability through Geometric Morphometrics**

Jeffers Petroglyphs includes many human figures. They are found across hundreds of meters of the rock surface and in a range of different styles, sizes, and postures. The Jeffers scanning project has acquired three-dimensional models of these figures. This paper analyzes shape differences among these figures using geometric morphometrics. Geometric morphometrics is a comprehensive method for examining differences and similarities in shape. Landmark-based analyses are used here because they are quite effective in quantifying relationships among shapes, allowing for a degree of independent verification for the assessments of shape that form the basis of interpretations. This method has been applied throughout the anthropological sciences to study skeletal ontogeny, human and primate phylogenetics, stone tool standardization, and ptyolith assemblages. Here, landmarks consistent among all figures will be collected and a generalized procrustes analysis will take out information pertaining to orientation, position, and size. A principal component analysis will be performed on the shape of the figures to determine if any specific groups can be visualized. If so, these groups will be placed in a discriminant analysis and each figure will be scrutinized using a cross-validation method determining its significance within its defined group.

Massey, David (The Ohio State University)  
**Unmanned Aerial Vehicles for Archaeological Surveying**

Aerial photography has long been used by archaeologists for the documentation, observation, and surveying of archaeological sites. However often acquiring this imagery can be an expensive and time consuming process. Increasingly, archaeologists have turned to Unmanned Aerial Vehicles (UAVs) to document archaeological sites not only because of their increased availability and affordability but also their speed and reliability. A UAV prototype with GPS triggered vertical photo shooting for orthorectification is built and tested to examine the challenges and implementation issues for other archaeologists.

Massigogoe, Agustina [117] see Otárola-Castillo, Erk

Master, Daniel [79] see Alex, Bridget

Mata-Miquel, Jaime [140] see Overholtzer, Lisa

Matheson, Carney (Lakehead University), Felicia Joseph (Department of Biology, Lakehead University), Ivan Roksandic (Department of Anthropology, University of Winnipeg), Roberto Rodriguez Suarez (Anthropology Museum, Faculty of Biology, University) and Antonio Martinez-Fuentes (Anthropology Museum, Faculty of Biology, University)  
**A Reevaluation of Genetic Evidence for the Human Migrations into Cuba**

This paper focuses on re-evaluating the ancient and modern genetic evidence for migrations into Cuba. Modern genetic data provides little resolution for the origins of indigenous Cubans. Ancient and modern genetic data from Cuba, the Caribbean, North America, Central America and South America, has been analyzed with consideration for the historical and linguistic context of human migrations into Cuba. The genetic data supports the traditional and most widely accepted migration of humans from South America however it also provides evidence of human migrations from elsewhere, suggesting that human migrations from other location like Florida, the Yucatan Peninsula and Central America as viable locations for the origins of some indigenous Cuban people.

Mathews, Bethany  
**Spatial Analysis of the Western Pluvial Lakes Tradition in the Southern Columbia Plateau and Northern Great Basin of North America**

The Western Pluvial Lakes Tradition was proposed relatively early in the history of Great Basin archaeological research to account for an apparent early Holocene adaptation to lake environments in the western Great Basin. Basin-specific studies have since established lake-centered foraging patterns across the early Great Basin landscape. Many studies of early Great Basin hunter-gatherers rely on the proximity of relict lake features to known archaeological sites to confirm this early Holocene lake-centered subsistence-settlement pattern. Were Paleoindian subsistence-settlement strategies focused on pluvial lakes, or is a lake-centered pattern produced by the region’s archaeological research history? Spatial analyses of cultural resource management survey locations in eastern Oregon reveal that pluvial lakes are overrepresented in regional archaeological surveys, biasing site discovery. Analyses of archaeological site distributions suggest that early subsistence-settlement practices were focused on pluvial lake sub-basins. Sites containing fluted and crescent bifaces are strongly associated with lake margins, while sites containing stemmed bifaces are associated with a variety of landscape features within pluvial lake sub-basins.

Mathews, Darcy (University of Victoria)  
**Funerary Ritual, Tradition, and Ancestral Presence: The Late Period Production of Power in the Salish Sea**

The Coast Salish peoples of southwestern British Columbia radically changed their mortuary practice around 1500 BP, transitioning from shell midden inhumations to formal cemeteries of above-ground arrangements of stone and soil. These funerary petroforms, previously termed cairns and mounds, were constructed in a variety of patterned shapes and sizes while utilizing different types and proportions of stones and sediment. This remarkable change in funerary practice is exemplified at the Rocky Point mortuary complex on southern Vancouver Island, where 550 funerary petroforms are distributed between two neighboring village sites. Quantitative analyses of feature morphology and a multi-scalar spatial analysis of feature
placement are framed within an ethnographic thematic analysis and body of social theory. The results indicate that this emerging mortuary landscape was not the passive reflection of hierarchy; it was the very process in which power relations were created and negotiated. The Rocky Point cemeteries are the unintended material and spatial consequence of active ritualizing. Funerary ritual at Rocky Point created places of inclusive and exclusive memory, contributed to the ethnographic pattern of familial history as the basis for tangible and intangible privileges and assets, and ultimately resulted in increasing power asymmetries depersonalized and legitimated by the ancestors.

Mathews, Jennifer (Trinity University) and John Gust (University of California, Riverside) [277] Hidden History: Daily Life in the Sugar and Rum Industry of the Costa Escondida, Quintana Roo Mexico

This paper examines our research into the history of the development of the sugar and rum industry in a remote region of northern Quintana Roo known as the "Costa Escondida" from the 1870s to the mid-twentieth century. This project was inspired by Paul Sullivan’s 2006 book Xuxub Must Die: The Lost Histories of a Murder on the Yucatan, which investigates a mass murder that took place on October 12, 1875 at a remote sugar plantation known as San Antonio Xuxub. Since 2009, we have been conducting archival and archaeological research of Xuxub and several nearby plantations to acquire material evidence of what daily life was like for the people who lived at these sites and worked in the industry. Foreigners often managed these small-scale businesses on small ranches using relatively primitive technology. Despite the remote locations of these sites, we have recovered a surprising number of artifacts imported from the U.S. and other countries, including luxury goods and construction materials. This paper will present an overview of our findings on this poorly understood period, examining in particular the role that coastal trade played in the lives of these isolated populations.

Mathieu, James (University of Pennsylvania Museum) [211] Exploring Political Landscapes and Complexity One Year at a Time

The use of geographic information systems (GIS) by archaeologists has resulted in new and interesting interpretations of archaeological remains. However, much of this research is characterized by a limited utilization of the dimension of time. In order to illustrate the potential GIS may have for producing significant diachronic, anthropological, and historical interpretations, this paper will present the results from a time-sensitive GIS study undertaken on an historically well-known dataset. The spatial, temporal, and functional patterning of medieval England’s royal buildings during the period A.D. 1066-1650 are analyzed to identify specific historical correlations, assess causality, and understand the development of the political landscape and complexity.

Matwich, Nicole (University of Arizona) and Lee M. Panich (Santa Clara University) [119] Excavations of a Native American Dormitory at Mission Santa Clara, California

The 2012 Santa Clara University archaeological field school sampled interior and exterior spaces associated with an adobe structure that housed native peoples at Mission Santa Clara de Asis in Alta California. This structure was in the heart of the mission’s neophyte rancheria, which included several adobe barracks as well as native-style dwellings. This project examines the ties that Native Americans living at the mission had to communities outside the mission walls, and considers how native peoples were able to maintain and re-create distinct indigenous identities during the colonial period. This poster details the field methodologies and preliminary findings. We discuss the relationship between pre-excavation GPR survey and features discovered in situ, including American-period trash pits, mission-era stone foundations and roof fall, as well as a large mission-era pit. All mission-period deposits were wet-screened in order to recover micro-artifacts like glass beads, shell beads, flakes, and small animal bones; flotation samples were taken from every mission context. We offer the results of ongoing analyses of archaeological remains such as stone tools, pottery vessels, glass beads, as well as faunal and floral remains. This research augments the growing study of the life of indigenous peoples outside the walls of the mission quadrangle.

Matisoo-Smith, Lisa [47] see Prost, Stefan

Matisoo-Smith, Lisa (University of Auckland), Jose Miguel Ramirez (Universidad de Valparaiso), Michael Knapp (University of Otago), Olga Kardailsky (University of Otago) and Andrea Seelenfreund (Universidad Academia de Humanismo Cristiano) [47] Redrawing the Polynesian Triangle?

In 2007 we published radiocarbon evidence for pre-Columbian chicken bones recovered from an archaeological site on the coast in south central Chile which, combined with ancient DNA data, we argued was evidence for a likely Polynesian introduction (Storey et al 2007). Based on this data, we began looking for further evidence of Polynesian contact with the Americas. While examining collections at the Concepcion Museum in 2009, we discovered human remains from the island of Isla Mocha, located 30km off the coast of Chile, which had numerous characteristics suggestive of Polynesian ancestry. Cranio metric analyses of these remains confirmed the association with Pacific Island populations (Matisoo-Smith and Ramirez 2010). We are currently undertaking archaeological and ancient DNA research on Isla Mocha looking for chronologically secure archaeological evidence of Polynesian presence on Isla Mocha. This paper will describe our biological results to date.

Matson, R.G. [69] see Cooper, Catherine

Matson, R. (Univ of British Columbia) [170] The Evolution of Northwest Coast Houses and Villages

The Northwest Coast is well-known for its large villages of big rectangular plank houses, particularly in its central and northern parts. Recent investigations show that this pattern evolved from very small isolated structures which were occupied in the winter. In areas without abundant salmon resources this small house pattern continued into the last 2000 years. Since large planked-house existed by this time, winter villages of large rectangular houses existed in areas adjacent to areas apparently without "villages"
and very much smaller houses. This paper focuses on describing the accumulating evidence of these small houses and their relationship to earlier and later habitation.

Matsumoto, Yuichi

Paracas in the Highland? Interregional Interactions between the Peruvian South Coast and South-Central Highlands

The emergence of the Paracas culture has been discussed based on the stylistic similarities between the ceramics from the site of Chavin de Huantar and those from the Peruvian south coast during the Early Horizon. Although it has been widely accepted that religious influence from Chavin reached the south coast during the time that the Paracas culture developed, recent advances in the archaeology of the south coast and our excavations at the ceremonial center of Campanayuq Rumi in the south-central highlands enabled a reconsideration of the formation of Paracas culture and its unique ceramic style. These new data reveal the complex nature of inter-regional interactions among the south coast, south-central highlands, and Chavin de Huantar during the Initial Period and Early Horizon. Although it seems certain that the influence of Chavin reached these regions at the beginning of the Early Horizon, the emergence of Paracas culture/style was not a unidirectional process and it is necessary to reconsider this issue based on regional perspectives that changed throughout the Initial Period and Early Horizon. Stylistic comparisons of regional ceramic assemblages on the south coast and south-central highlands make it possible to describe this process of interaction as historical entanglements of regional agencies.

Matsumoto, Go (Dumbarton Oake Research Library and Collection)

Eating and Drinking with the Dead: Commensal Hospitality for Integrating People in the Multiethnic Society during the Middle Sicán Period (ca. 900-1100 C.E.)

The archaeological site of Sicán in the mid-La Leche Valley on the Peruvian North Coast was the center of a state-level society that emerged after the political demise of the preceding Mochea (ca. 750-800 C.E.) and reached its height of prosperity during the Middle Sicán Period (ca. 900-1100 C.E.). The society is currently thought to have been a multithematic state that consisted of at least two (or perhaps four) culturally distinct groups of people. Recent excavations within the Great Plaza at the focal point of the site, surrounded by major platform mounds and burials, revealed a series of material traces of multiple activities that probably took place side by side (e.g., making and repairing funerary bundles, chicha pouring into a ritual canal, and large-scale food preparations and consumptions) and got involved many people different in social status and/or cultural identity. Focusing on food practices among others, this paper will discuss the integrative role of food consumptions and closely associated ancestor veneration practices within the plaza. I will argue that those practices helped to mitigate an inherent tendency toward factionalism or sociopolitical tensions within the society with a complex ethnic and social composition and inequality under the name of ancestor veneration.

Mattes, Matt and Anna Antoniou (University of Michigan)

Region Perspectives on Prehistoric Wealth, Demography, and Village Life in the Middle Fraser Canyon, British Columbia

Research into the lifeways of pithouse-dwelling First Nations groups in the Middle Fraser Canyon of the British Columbian Plateau has been informed by extensive anthropological studies and documentation, ranging from James Teit’s 19th century ethnographies to decades of archaeological investigations. The opportunities to study social inequality, environmental interaction, and village formation at the levels of the household, the village, and the region are seemingly innumerable and enabled by these records, as well as by actively engaged First Nations groups, generally well preserved and discrete archaeological contexts, and ample radiometric dating. These data have illustrated pictures of extended kin groups living in multi-family pithouse residences, thriving on riverine and terrestrial resources, organized under the tenets of complex socio-political systems. Of particular importance now, after these decades of study, is the investigation of socioeconomic and political patterns within these systems on a regional level, as they are well documented elsewhere in the Fraser Canyon but remain hypothetical in the Middle Fraser. A meta-analysis of past archaeological reports was designed to address this research question, and among several data sets, the measures of material wealth disparities relative to population changes over time augments current knowledge and theory about large village formation.

Matthews, Christopher (Montclair State University)

Discussant

Mauldin, Raymond (UT San Antonio), Robert Hard (UT San Antonio), Cynthia Munoz (UT San Antonio) and Jennifer Rice (Our Lady of the Lake University)

Stable Carbon (513Ccco2gen, 513Ccarbonate) and Nitrogen (513N) Isotopes from Radiocarbon Dated Hunter-Gatherer Remains at Hitzfelder Cave, Texas

The prehistory of much of Texas reflects a long sequence of hunter-gatherer adaptations. While agriculture was practiced to the north, south, east, and west, it was not present in Central Texas until historic contact. This prehistoric sequence provides researchers with an opportunity to investigate processes of hunter-gatherer stability as well as intensification on non-agricultural resources. One method that, until recently, has been under-used in those investigations is a focus on human isotopic data. Here we present stable isotope results for directly dated ulnas that reflect different individuals from Hitzfelder Cave, a vertical shaft site excavated in the 1960s in Central Texas. The isotopic shifts over time identified in our analysis provide a detailed look at diet, with specimens from 19 individuals dating from about 4475 BP, the close of the Middle Archaic, to 1660 BP, near the end of the Late Archaic, and a 20th specimen dating to 470 BP (Late Prehistoric). Focusing on the Middle and Late Archaic materials, the stable carbon and nitrogen isotopic patterns at Hitzfelder are distinct from those shown previously in the region for this period, suggesting that substantial subsistence diversity, and possible multiple adaptive trajectories, characterized the Central Texas Archaic.

Mauldin, Raymond [281] see Munoz, Cynthia

Maxwell, Robert (University of Sydney)

Concrete Ideals: Dissonance and the New Brutalism

A theory of difference recognises that the material and the social can become disengaged over time. Dissonance, or socio-material friction, can occur due to changes in ideology, sociality, or ascribed function, often leading to the failure of a site or settlement. The architecture of The New Brutalism is a key diagnostic indicator of dissonance in the archaeological 20th century. Much loathed and consequently highly endangered, its emergence describes a material response to key ideological pressures of the Cold War period. Now, through its fabric and inertia in the landscape, we are challenged. It is a new century. Do we retain the problematic materials of yesterday, or do we remove them? Difference theory offers a new way of looking at this issue and offers an expanded conception of ‘value’ in archaeology.

Maxwell, David (Simon Fraser University) and Jonathan Driver (Simon Fraser University)

New Approaches to Old Data: Plains Bison Kill Population Dynamics Revisited
Catastrophic and attritional mortality profiles found their first major use in archaeology in the interpretation of Plains bison kill sites. More recently, Mary Stiner and others have advocated the use of triangular graphs comparing frequencies of young, prime-age, and old animals. In this paper, we provide comparisons of triangular graphs with traditional x-y graphs of bison population structures from several sites on the Great Plains, ranging from Paleoindian to Late Prehistoric in age. Preliminary analysis suggests that most of these best fit the expectation of mass kill events occurring after a year or more of attritional mortality. We also offer a comparison with a modern analog to prehistoric Plains bison herds: the African wildebeest. We present wildebeest population and mortality data in the same fashion as bison data, allowing for a comparison between these large, mobile, herbivores.

Maxwell, Timothy D. [252] see Hull, Sharon

May, Sally and Paul Taçon (Griffith University) [163]  
'Taken for Granted? Comparing the Depiction of Southeast Asian and European Watercraft in the Rock Art of Northern Australia'  
Far from the generally accepted notion of an isolated shoreline, the northern Australian coast was teeming with watercraft and their crew engaged in trade for hundreds of years before European exploration and settlement. Most commonly referred to as ‘Macassans’, these early traders came to harvest trepang and for materials such as turtle shell and iron wood. Across the north of Australia, Aboriginal groups used rock art to document these interactions—depicting the watercraft, crew and associated material culture. Likewise, with later (and, for a while, contemporary) European exploration and settlement, artists continued to use rock art to document and interpret their changing lives and experiences. During our 5 year (and ongoing) study of contact rock art in Australia, we found that ships dominate rock art made during the last 500 years. Yet, our western and northwestern Anhern Land case study areas produced some further perplexing results. For example, despite the longer period of interaction with ‘Macassans’, it is the later English watercraft that significantly outnumber any other rock art subject-matter. In this paper, we place our exploration of the historical and localized impacts of these coastal interactions within wider theoretical understandings of rock art and social or maritime identity.

May Ciau , Rossana [171] see Bey, George

Mayburd, Miriam (University of Iceland) [55]  
'Landscapes of Death and Otherness: Icelandic Terrain and Medieval Attitudes about the Dead'  
This paper investigates the unique features of Icelandic geographical terrain and its impact upon the cognitive reality of medieval Iceland, departing from conventional literary interpretations of Icelandic sagas that tend to reduce landscape's role in the narratives to a set of stylistic motifs self-consciously inserted by authors within their creative fiction. Focusing on Iceland's western coast, I examine sagas' depictions of Viking-Age individuals passing into their local mountains when they die (a belief unique to that area), arguing that this does not constitute death in the conventional sense of ceasing to be, but a transformation into ambiguous “other” entities that continue to inhabit the landscape in an altered state. The textual analysis will be brought into dialogue with archaeological data concerning placements of mounds and burial sites in the same region and time frame, aiming to illuminate the role of the landscape as a stage shaping medieval Icelandic beliefs and attitudes regarding their dead. Instead of dichotomous opposition between this-world and other-world, I propose that the Icelandic landscape was perceived as both at the same time, not as a bridge from one to the other but as a very tangible space where such boundaries are confused and do not apply.

Mazzucato, Camilla [9]  
'GIS Practice at Çatalhöyük: From Excavation to Digital Representation'  
Since 2009, close collaboration between the newly created Geographic Information System (GIS) team and various members of the Çatalhöyük Research Project has led to the creation of the Çatalhöyük GIS geodatabase. The Çatalhöyük Research Project GIS is now routinely used for spatial data analysis, map making, excavation and survey data management and storage. The broad range of data collected and stored (excavation, survey data, modern and historical maps, aerial photographs, computer vision data, geophysical data and environmental data) makes it - together with the site database to which it is dynamically linked - the main storage and analytical tool of the project. Since 2012 the Çatalhöyük GIS team has been working on the integration of 3D computer vision models created during the excavation season. The close collaboration between archaeologists and specialists involved in the implementation of computer vision techniques on site provided the opportunity to further develop the Çatalhöyük GIS as the main tool for storing, visualization and analysis of site data.

McAllister, Andrew [62] see Sheppard, Peter

McAllister, Martin [135] see Griffel, David

McAllister, Martin (ADIA), David Griffel (ADIA), James Moriarty (ADIA) and Larry Murphy (ADIA) [135]  
'Archaeological Crime Scene Investigation: Training the Investigative Team'  
Archaeological crime scene investigation is mentioned in at least one general college textbook on criminal investigation, but is not part of any regular college curricula on the forensic sciences or archaeology. However, due to over 100 years of combined expertise in this area, the staff of the firm of Archaeological Damage Investigation & Assessment (ADIA) has taught classes on archaeological crime scene investigation to almost 8,000 government and tribal law enforcement officers and archaeologists. Several federal prosecutors have also attended these classes. ADIA currently has four standard classes dealing with the various aspects of this topic, including violations involving submerged resources. The importance of this educational effort in protecting heritage resources is demonstrated by the fact that a number of the graduates of these classes have been involved in cases that have resulted in successful detection, investigation, and prosecution of violators.

McAnany, Patricia (University of North Carolina, Chapel Hill) and Maxime Lamoureux St-Hilaire (Tulane University) [65]  
'Detaching from Place in Theory'  
A process replete with recursivity, complexity, and equivallinity, detachment from place remains an under-theorized topic that, nonetheless, is central to the hermeneutics of archaeology. Mobility is deeply rooted within human DNA and often cited as a factor in the success of our species; but among peoples characterized as “sedentary”, detachment from place is more often characterized as societal failure. Adopting an agent-focused approach to detachment from place, we examine cycles of habitation, detachment, re-attachment elsewhere, changing perception/use of earlier places of habitation and, finally, the archaeological hermeneutics of this process. Two triggers are thought to stimulate detachment from place: stressors and enablers. Next, the process is negotiated with family and community. Whether abandonment is total or partial, agents
negotiate change in reference to the prevailing stressors and enables. A prime concern of abandonees is establishment at a different locale, which initiates a new cycle of community. Abandonees alter their perception of a previously inhabited landscape in reference to the motivation for abandonment as well as the frequency of re-visitation. Popularly known detachments from place are discussed to facilitate deeper archaeological engagement with the hermeneutics of this process.

[165] Chair

McAnany, Patricia [165] see Rowe, Sarah

Mcardle, Angela

[126] An Iconographic Approach to Lithic Analysis in Mesoamerica

This paper examines depictions of flaked stone and ground stone in the contexts of Mesoamerican iconographic and epigraphic representations, particularly concerning the Cross-cultural use of flint symbolism. Although it is difficult to observe the detailed morphology of stone in most depictions, and thus problematic in distinguishing typologies and constructing technological sequences, it is possible to discern the significance altered stone held in Mesoamerican cultures in both function and symbolic meaning. It is possible to ascertain this significance based upon the spatial placement of stone in artwork and text, its prevalence in certain scenes and absence from others, its association with specific actions and personages, and its symbolic transference of intrinsic attributes that imbue associated non-stone entities with meaning. Analyzing the way in which Mesoamerican peoples utilized images and textual references of stones in their painting, writing, and sculpture can provide a clarifying framework in which to approach the functional analysis of the tangible lithic artifacts archaeologists encounter.

McBeth, Sally (University of Northern Colorado)

[75] The Return of the Native: Northern Ute Removal From and Return to Colorado Ancestral Homelands

Through the lens of an applied cultural anthropologist, this presentation will examine Ute perspectives on connections to landscape and place. Based on historic accounts and recent fieldwork with the Ute, I will investigate Ute loss of ancestral homelands in western Colorado. In 1881 the Northern Ute bands lost possession of their Colorado Territory homelands—a vast territory of over one-third of Colorado. The situation for the Utes in the 1850s and beyond was somewhat unique in the American West—the peaceful and prosperous Utes had rights to a vast territory of over one-third of Colorado—roughly 16-20 million acres. Ute rights were established by the 1868 treaty (sometimes called the Kit Carson Treaty) which has been called “the most favorable Indian treaty in the history of the country.” It was negotiated by multilingual statesman Ouray, named by the federal government in 1868 as spokesman for all Colorado Utes. Historic accounts from western newspapers (1882-1912) will be combined with emotional reflections collected during twenty-first century return visits to their Colorado ancestral homelands. Northern Ute tribal members discussed the cultural significance of removal, connection to place, and rationale for their ignominious displacement from Colorado to Utah.

McCaflery, Geoffrey (University of Calgary) and Sharisse McCafferty (University of Calgary)

[136] Sacasa Striated Shoe-Pots of Pacific Nicaragua: Function and Meaning

Sacasa Striated urns are among the most distinctive artifacts from the Postclassic period in Pacific Nicaragua (AD 800-1520). They tend to be ovoid in shape with the orifice at the top of one end, and they often feature decorative appliques on the upper section of the opposite end. This unique shape has often been described as “shoe-shaped,” and “shoe-pots” have been recovered archaeologically from numerous sites in Pacific Nicaragua, particularly as mortuary urns. This essay will consider the temporal and spatial distribution of Sacasa Striated shoe-pots as they may have functioned as cooking vessels as well as burial urns, and how their archaeological contexts and decorative elements provide evidence of their symbolic meaning for pre-Columbian Nicaraguans. Specifically, we consider decorative elements applied to the exterior of the ‘toe,’ burial contexts, and general morphology to argue that these were effigy cacao pods, and that cacao was an essential regenerative symbol associated with female gender and the life/death cycle.

[210] Discussant

McCaflery, Sharisse [136] see McCafferty, Geoffrey

McCaflery, Geoffrey (University of Calgary) and Geoffrey McCafferty (University of Calgary)

[287] Communities of Practice? Garden Cities of Pacific Nicaragua

Pacific Nicaragua featured a remarkably high population density upon first-contact with Europeans in 1522. “Urban” centers were dispersed, however, and have become known as ‘garden cities’ because residential clusters were generally surrounded by fields and orchards. Intensive excavations at several Early Postclassic/Sapoa period centers since 2000 provide a glimpse of life and social organization in these garden cities. Santa Isabel on the shore of Lake Cocibolca featured a dense cluster of residential mounds, and offers a rich cross-section of domestic material culture. Tepepetate, located about 50 km up the lakeshore, was a regional center with possible civic-ceremonial architecture that adds a socio-political dimension to community organization. Nearby El Rayo also provided insights on commoner domestic practice, but was most notable for the variation in mortuary practice found in two discrete cemeteries. Contemporary in time, relatively close spatially, and all provisioned by lacustrine resources, these three sites offer varying insights on ancient Chorotega culture, raising the question of the degree to which time/space/environment participate in the production of cultural similarities, and the significance of variation. This paper will consider both the commonalities and dissimilarities that have been encountered to argue for the consideration of the ‘cultural mosaic’ of ancient agencies.

McCall, Grant [11] see Enloe, James

McCarthy, Elizabeth (University of Missouri), Richard Kennedy (University of Missouri), Jason Christy (University of Missouri) and Alisa Walton (University of Missouri)

[147] Stones and Bones: A Revist of the Differentiation of Chert and Obsidian Made Cut Marks

Previous research has shown that cut marks made with a range of materials, such as stone and metal, can exhibit different morphological characteristics. This presentation is a continuation of a study attempting to differentiate lithic materials. In an experimental setting, cow long bone shafts were cut using both obsidian and chert flakes with a consistent angle and pressure. Ten morphological characteristics were analyzed for each mark and given a point if the characteristic was “obsidian-like”. The data suggested that obsidian and chert could be differentiated based on the total scores of the cut marks on an assemblage level. Current research consists of two supporting studies. The first had two individuals, one with experience and the other a novice at taphonomic analysis, look at the original set of cut marks and score them. These scores were then compared to the original data set and suggest that with some training, the marks could be differentiated using this method. In the second study, another researcher was also able to differentiate between the chert and obsidian made marks by replicating the original experiment.
McClelland, John (Arizona State Museum) [286]
Integrating Biodistance and Mortuary Behavior: A Search for Patterns at PPNB Beidha, Southern Jordan
The Pre-Pottery Neolithic site of Beidha in southern Jordan is unusual among Levantine sites for its sequence of evolving architectural forms, most likely reflecting parallel changes in social structure. Mortuary patterns evolved in tandem. The earliest phase held an intramural interment of mixed age individuals, possibly a family group. The final occupation phase was characterized by clustered intramural interments of infants, frequently in association with a single adult. Does this grouping of young juvenile burials indicate reduced emphasis on family ties in the mortuary program? In this study, I examine non-metric and metric phenotypic variation in deciduous teeth to test the hypothesis that the spatial distribution of juvenile burials was independent of kinship. Preliminary results do not support the hypothesis, suggesting that juvenile burial clusters are reflective of biological kinship. At Beidha, juvenile burial clusters seem to associate houses with extended family units or lineages. This contrasts with recent work at the contemporaneous Neolithic site of Çatalhöyük in Anatolia (Pilloud and Larsen 2011), where there was minimal evidence for biological affinity related to interment location.

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McClure, Sarah B. [68] see Zavodny, Emily

McConaughy, Mark (PA Historical and Museum Commission) [6]
Reassessing Peter's Creek and Linn Mounds, Pennsylvania
Peter's Creek and Linn (36WH36) Mounds are located in Washington County, Pennsylvania. Dragoo (1955, 1963) believed both mounds were related to Creso phase Adena groups based on artifacts recovered from in or near the mounds. A recent reexamination of the artifacts by the author and radiocarbon dating of various mounds types from western Pennsylvania suggest Peter's Creek and Linn Mounds should be placed in the Fairchance phase of the Middle Woodland.

McCorriston, Joy (The Ohio State University) [195]
Historical Metaphors and Mythical Realities in Bronze Age World Systems
World Systems Theory assumes a technologically advanced core dominates periphery cultures. This is unsubstantiated either in terms of political economies or in the archaeological records of Old World prehistory. Critics have called for models that better describe peer relations and social contexts of long-distance economic exchanges. But World Systems Theory continues to describe large-scale, long-term economic cycles that frame cultural interactions over a large part of the Old World and hence remains an important heuristic device in world history and prehistory. This paper draws upon the well-documented contacts between Europeans and Hawaiians in the famous study of Captain Cook's death at Kealakekua Bay in 1779. Adequately theorized by anthropologist Marshall Sahlins, whose analysis of the apotheosis of Captain Cook has broad implications, the incident provides important guidelines for understanding cultural exchanges elsewhere. In the ancient Near East, where trading ships from Mesopotamia and the Indus Valley landed on the shores of the Arabian Peninsula more than five thousand years ago, the historical metaphors and mythical realities of structural history provide important clues to the social contexts of an archaeological record of sustained cultural interaction.

McCoy, Mark (University of Otago) [255]
The Significance of Religious Ritual in Ancient Hawaii
A session in honor of Patrick Kirch's intellectual contribution to the archaeology of Hawaii'i would be incomplete without a discussion of his wide-ranging scholarship on traditional Hawaiian religion. In this paper, I focus on three themes that can be tracked from his early career through to the present. The first is the incorporation of the study of heiau (temples), shrines, and other sacred sites described in ethnohistory within the historical context of the development of Hawaiian society, most recently represented in his book entitled How Chiefs Became Kings. The second is his contribution to the interpretation of heiau architecture and ritual practices through close attention to architectural details such as orientation, elaboration, and offerings. These works have helped draw us closer to understanding how Hawaiian architects wove elements of the natural and spiritual worlds together to mark places as sacred. The final theme is his commitment to the care, preservation, and protection of sacred places through raising public awareness. In the books, Feathered Gods and Fishhooks, Legacy of the Landscape, and A Shark Going Inland is My Chief, he has brought to a broad audience a message of respect for all of Hawaii'i's archaeological sites, but especially religious sites.

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McCray, Brian (Vanderbilt University) and John Janusek (Vanderbilt University) [50]
Fringe Benefits? Analysis of Microterracing in the Icla Valley, Eastern Bolivia
The study of productive systems is an important component of arguments evaluating sociopolitical structure and ethnonogenesis. This study analyzes canal and terracing systems in the Icla Valley, along the eastern slopes of the Bolivian Andes, toward evaluating the sociopolitical structure of the resident population. Extensive sections of the Icla Valley, along Cerro Salli Salli, contain remnants of unique agricultural systems characterized by canals and narrow terraces less than 1 m in width. Similar terraces (without canals) are present above the nearby site of Chullpamoko-Kochipata. Test pits reveal rich soil directly under gravelly eroded soil currently only supporting xerophytic vegetation. These terraces reflect significant investment, but initial survey could not determine clear associations between the Salli Salli terraces and specific settlements or settlement clusters. The Chullpamoko-Kochipata terraces, conversely, have an obvious site association. Creative approaches to agriculture along the eastern slopes led to the apparently unique productive systems of the Icla Valley. GIS analysis will compare the two regions, and trace associations between hydrological catchment areas, terrace and canal systems, and the pathways connecting the productive systems and contemporary sites. This study analyzes possible sociopolitical implications of this unique agricultural strategy in a context of interregional interaction.

McCray, John [85] see Lail, Warren
McCutcheon, Patrick [70] see Rennaker, Patrick
McDonald, Jo [163] see Veth, Peter

McDonald, Josephine (University of Western Australia) [163]
Oh! I Do Like to Be beside the Seaide… Reflections on Landscape Use in the Coastal Zone of the Sydney Region
The rock art of the Sydney Basin is located between the coast and the Blue Mountains, in south-eastern Australia. Stylistically the art of this region reflects a coherent social bloc. Stylistic variability here is attributable to five defined language areas and to the social
context of the art’s production. This paper looks at the rock art within a single language area (Guringai) and explores how a coastsally oriented group with a strong maritime economy has mapped onto the land. Subject choices in the art – and archaeological evidence from rockshelter and midden sites generally reflect the coastal economy. But the art is more than a menu of the important resources of the Hawkesbury River - at this fertile coastal and estuarine interface. The rock art demonstrates that people are using various landscapes across their territory to signal different types of attachments to the land and different messages about their natural and social realms.

McEwan, Colin (Dumbarton Oaks)  
[60] Discussant

McFadden, Lara (University of Toronto)  
[39] Feasting the Dead: The Significance of a Faunal Assemblage at an Ancient Burial Ground  
Recent excavations at an ancient burial ground, DJRW-14 on the south coast of British Columbia, dated 4000-3500 cal. BP, have yielded an unusual faunal assemblage with a high frequency of deer remains and relatively low frequencies of marine fauna. With little or no evidence of habitation at the site during the period in question, it appears likely that the high proportion of deer is related to mortuary ritual that involved consumption of deer meat. Through analysis of the deer remains, I will examine the ways in which deer were transported, processed, and consumed on site. This assemblage provides a rare opportunity to investigate feasting behavior associated with mortuary ritual.

McFarlane, William (Johnson Co. Community College, KS) and Miranda Suri (Queens College, CUNY)  
[264] Investigating Community Dynamics: Recent Research from the Jesus de Otoro Valley, Honduras  
Three seasons of work in the Jesus de Otoro valley of central Honduras have begun to illuminate the lives of this little-known region’s Pre-Columbian occupants. We address several distinctive factors of life in this mountain valley, including the apparent presence of multiple contemporaneous tier-1 settlements in a geographically constrained region, the role of the nearby La Esperanza obsidian source in the local and long distance economy, and the interplay between public and residential life at the center of Sinsiembia. We also comment on cultural similarities and differences to other potential Lenca settlements within northernmost Honduras, particularly with reference to building practices and pottery production and exchange. In sum, the work of the Proyecto Arqueologico Valle de Jesus de Otoro reveals the potential for small-scale and minimally intrusive research strategies to address complex issues at various scales of analysis.

McGlynn, George [79] see Olsen, Karyn

McGovern, Jeffrey [111] see Rockman, Marcy

McGuire, Kelly (Far Western Anthropological)  
[12] Incised Stones and Social Identity: A Case Study in the Rise of Complex Social Formations in Northern California during the Archaic Period  
One of the largest portable rock art assemblages ever documented in North America was recovered from a series of archaeological sites within and near the Sacramento River Canyon in Northern California. Obtained from components dated from 5,000 to 3,000 years ago, the homogeneity of stylistic attributes associated with these incised stones suggests that they were produced by a singular, highly developed socio-cultural entity. The symbolic potential of these artifacts with respect to internal affiliation, and their role as an unambiguous signal of group identity to outsiders, marks the rise of complex societies in this region.

McGuire, Randall (Binghamton University) and Elisa Villalpando (Centro INAH Sonora)  
[97] Cerros de Trincheras and Defense in the Formative Period Trincheras Tradition  
Visions of peaceful people confronted by a harsh environment have long dominated archaeological studies of the prehistoric Southwest. Some archaeologists argue instead that warfare drove cultural developments in the region. In Sonora, Mexico prehistoric peoples constructed terraces on isolated volcanic hills, and built rooms, compounds, and other edifices on their summits to create cerros de trincheras. Advocates of a violent prehistory for the Southwest interpret these sites as forts and as evidence for warfare. In the spring of 2006, the Cerros de Trincheras and Defense Project conducted eight weeks of fieldwork mapping and surface collecting cerros de trincheras in the Rio Altar and Rio Magdalena. The project used Geographic Information Systems analysis to answer a series of questions: Is there evidence for defense at these sites? If so, how were these sites defensive? What was the range of activities on these sites? What was protected? How did defense relate to other activities on the sites? And, how did these relations change over time? The project demonstrated that the defensive character of Formative Period cerros de trincheras in the Trincheras Tradition changed over time and that defense does not adequately capture the complex activity structure of most of these sites.

McIntosh, Roderick  
[164] A Success too Sweet: Who Sheds Tears when Looting Ends  
After a horrific rise in looting at archaeological sites near Jenne-jeno (Mali, West Africa) (looting to feed the illicit international traffic in terracotta statuettes) that began in the late 1970s, looting essentially came to a complete halt by roughly 1995. That success was due to a concentrated effort of local public education and site monitoring (by the Ministry of Culture’s Jenne Mission Culturelle), to the government’s efforts to interdict objects leaving the country (orchestrated by the National Museum and by the principal heritage protection agency, the Direction National des Arts et de la Culture (DNAC)), as well as due to the effects of the Mali-US bi-lateral protection accord (initiated in 1993). Since 1995, periodic survey circuits of the several hundred archaeological sites within a roughly 40 km radius of Jenne show negligible evidence of renewed looting. This would seem to be cause for celebration. Yet in sworn testimony before the State Department’s Cultural Property Advisory Committee in 2012, art/antiquities dealers and museum directors argued that the Mali-US bi-lateral accord had failed. What is at the root of this massive “cognitive dissonance”?

McKechnie, Iain [71] see Rodrigues, Antonia

McKenzie, Hugh and Alexander Popov (Far Eastern National University (FENU), Vladivosto)  
[194] Cranial Modification from the Boisman II Hunter-Gatherer Cemetery (ca. 5300-6000 B.P., Russian Far East  
Cranial modification is a widely distributed cultural practice in both time and space, being found on every inhabited continent and in a variety of historical and prehistoric cultural contexts. As a permanent bodily modification that is applied to infants, ACM is one important method of symbolizing ascribed social identities and so can be useful for bioarchaeological investigations into inter and intra-group social relations. Previous research (Chikisheva 2003) at the Boisman II hunter-gatherer cemetery (~5300-6000 BP) located on...
the Russian coast of the Sea of Japan has described a variety of forms of deformation in 11 of 17 observable crania, which represents among the earliest – if not the earliest – examples of the practice in Asia. The aim of the present study is to reevaluate this evidence.

McKenzie, Dustin K. [204] see Joslin, Terry

McKenzie, Chantel (Texas Military Forces) [281]
Military Construction and Archaeology: Exercises in Cooperative Planning
Construction project managers on historic building rehabilitations often do not consider the potential impacts of construction to buried cultural resources, particularly when they are working within the footprints of existing features and assumed "previously disturbed" areas. However, failure to adequately plan for such discoveries often negatively impacts project schedules, scopes, and costs. Cooperative and tactical planning between cultural resources staff and construction project managers is crucial for avoiding pitfalls. Working together, personnel can develop standards for investigation, protocol, and oversight early in the planning phases of historic rehabilitation projects. By examining Texas Army National Guard construction projects that have encountered unknown buried cultural resources, this paper offers insights into effective strategies for ensuring successful construction project outcomes.

McKinnon, Jennifer (Flinders University) [73]
Community Archaeology Approaches in the Commonwealth of the Northern Mariana Islands (CNMI)
In 2007 as part of a reconnaissance trip to the Mariana Islands to assess the potential for Spanish colonial archaeology research, the author was struck by the incredibly diverse heritage of the island (Chamorro, Carolinian, Spanish, US, Japanese, German, Korean and Filipino) and a local interest in researching understanding and protecting the past. Driven by community interest and agency support several projects have eventuated including the recording of WWII US and Japanese underwater heritage sites, the development of a maritime heritage trail and 3D interpretive film, the recording of the Indigenous maritime cultural landscapes and seascapes, a feasibility study of Spanish colonial archaeological research and a community-based study for protecting cave shelter sites on private property. Several of these projects were perceived and guided by community members. Further, these projects included community participation and collaboration and trainings to both build capacity on island and raise awareness of protecting heritage. This paper will outline the community archaeology aspects of this research, discussing some of the challenges and successes of working with and for a community.

McLaren, Duncan (University of Victoria and Hakai Institute) [206]
Uncovering Long-Term Archaeological Sequences and Landscapes on the Central Northwest Coast
The Hakai Ancient Landscapes Archaeology Project is being undertaken on the central coast of British Columbia. The primary goal of the project is to find and investigate archaeological sites with long archaeological sequences. The study area is hypothesized as being unique on the Northwest Coast as sea level has been fairly stable over the last 11,400 calendar years. For this reason, shell middens and other site types have evidence of repeated human habitation spanning the Holocene period. In some instances the long-term accumulation of stratified anthropogenic deposits has resulted in landforms over five metres high. Site testing has been conducted using probes, augers, and excavation units. Combined with radiocarbon dating, the collection and analysis of lithic, bone, and water-logged materials from these sites allows comparisons with other diachronic sequences including those developed from palaeo-environmental and oral historical sources. An additional project goal is to search for late Pleistocene archaeological deposits. To enable this, a relative sea curve is being constructed using isolation basin coring and diatom analysis. The resulting curve, combined with LiDAR data, will help pinpoint the locations and elevations of raised relict shorelines that resulted from late Pleistocene glacial isostatic depression, providing targets for future field investigations.

McManamon, Francis [10] see Kintigh, Keith

McManamon, Francis (Center for Digital Antiquity) [72]
Goals of a Passing Generation: Saving and Sharing Archaeologists’ Legacies
The 1960s and 1970s were full of ferment and new ideas in archaeology. The New Archaeologists were challenging Cultural Historians; CRM was developing as a shift from the “salvage archaeology” approach. The “new archaeologists” and early CRMers are now facing the ends of their careers. Some have taken steps to ensure the long-term access and preservation of the results of their work. Others are only now considering the legacy of their careers. This presentation will examine how aging affects the perspective of practicing archaeologists regarding the data and interpretations that they produce during their careers. One aspect of this examination will focus on how or whether individuals benefit from knowing that their professional work contributes to a larger legacy of advancing knowledge. The presentation also will describe the Digital Archaeological Record (tDAR), an archaeological digital repository that archaeologists use to save and share their professional legacies.

McManus, Ellen (University of Aberdeen), Kate Britton (University of Aberdeen; Max Plank Institute for Evolutionary Anthropology), Keith Dobney (University of Aberdeen) and Rick Knecht (University of Aberdeen; University of Alaska Fairbanks) [20]
A Stable Isotope Investigation of Human-Dog Relationships at a Permafrost-Preserved Site in Prehistoric Western Alaska
Dogs have frequently been used as analogues for past human diet in situations where human remains have not been found, or where their investigation by techniques such as stable isotope analysis is not possible. In regions such as the Arctic, where dogs have played a critical role in human transport and hunting activities, the close, interdependent relationship between humans and dogs makes them an even more valuable source of information on past human behavior and subsistence. The Western Thule village site of Nunalleq (Yup’ik for ‘the old village’), in the Yukon-Kuskokwim Delta region of Western Alaska, is the focus of a major project currently being carried out by the University of Aberdeen, in partnership with the local Yup’ik village corporation. Permafrost conditions at the site have resulted in incredible preservation of organic material and faunal remains in house floor deposits, including canid fur, bones and teeth. Human hair has also been recovered from these non-mortuary contexts. This paper will explore the relationship between humans and dogs at Nunalleq through stable isotope analysis, and will address how people and their animals lived in and adapted to this region of extreme climatic variation and fluctuating resource availability.

McManus, Ellen [138] see Britton, Kate

McMillan, Alan [71] see Arndt, Ursula

McNabb, Caitly [236] see McNabb, Caitlyn
McNabb, Caitlyn (Washington State University) and Caitly McNabb (Washington State University-Pullman) [236]

Water Management and Settlement Patterns in the Lower Nepeña Valley

Recent investigations on the nature and implications of large-scale irrigation have centered around the Moche State. Irrigation propelled the complexity and extent of the Moche sphere, as irrigation-based subsistence strategies were employed long before the complexity of the state. This study examines early urbanism as a precursor to the state by modeling potential spatial, social, and political dynamics of early irrigation systems in the Nepena Valley, a region argued to be a social and political periphery. By doing so, I dispel the myth that certain settlement pattern shifts were a result of warfare. In order to examine shifts in subsistence and settlement, potential canal trajectories are estimated for each time period based on site location as well as degrees of social complexity and political authority as indicated by architectural analysis. Ultimately, it becomes apparent that politically organized forms of irrigation strategies were present as early as the Late Preceramic Period. Evidence suggests gradual, in-situ, intensification of irrigation systems along the river plain until the transition to large urban centers, which reflects a transition to a subsistence strategy coupled with a socially complex political structure. These results shed doubt on warfare based narratives for the region that rely on punctuated change.

McNamee, Calla (University of Calgary), Christopher R. Moore (Savannah River Archaeological Research Program, So), Mark J. Brooks (Institute of Archaeology and Anthropology, University of South Carolina), Andrew H. Ivester (Department of Geosciences, University of West Georgia) and James K. Feathers (Department of Anthropology, University of Washington) [243]

Microbotanical Analysis of Carolina Bay Sand Rims: Reconstructing Holocene Vegetation and Paleoenvironment through Phytolith Analysis

Carolina Bays are shallow, upland ponds that have provided important wetland resources to prehistoric populations dating back to the Paleoindian period. Sites are located on the bay rims (water-lain and eolian shoreline deposits), generally characterized by visually undifferentiated sand rich sediments. Recent geoarchaeological research by Moore and others that incorporates OSL and 14C dating, as well as microsampling at 2.5 cm intervals, provides chronologic and stratigraphic control at three Carolina Bay sites (Flamingo Bay, Johns Bay, and Frierson Bay) found on the South Carolina Coastal Plain. This has enabled interpretation of Holocene palaeoenvironment based on physical and chemical data. Due to acidic conditions and coarse sediment texture, sparse paleobotanical data have been recovered from these sites. Silica phytoliths, however, with their resistance to chemical and physical degradation, provide a reliable microbotanical proxy for palaeoenvironmental change in these settings. This study presents the results from a phytolith analysis of ten samples collected from the Flamingo Bay site (38AK469). The phytolith results are integrated with the geoarchaeological results to examine changes in Holocene vegetation and climate. By investigating the types of vegetation near the site, this phytolith analysis sheds light on prehistoric resource availability in Carolina Bay environments.

McNeill, Fiona [51] see MacDonald, Brandi Lee

McNiven, Ian (Monash University, Australia) [163]

Discussant

McNulty, Kieran [94] see Greer, Sean

McPherron, Shannon [10] see Dibble, Harold

McPherron, Shannon (Max Planck Institute) [155]

Modeling Trampling Damage on Flakes: An Experimental Approach to Substrate Size, Raw Material Type, Edge Angle, and Contact Face

Very little is known of the use of unretouched flakes during the Paleolithic. This is a considerable gap in our understanding of ancient lifeways. Studies of damage on the edges of unretouched tools may help to address this issue. Unfortunately, there is currently substantial equivocality in determining the behavioral relevance of macroscopic damage patterns. Experiments demonstrate that considerable damage is caused by trampling, and that this can be mistaken for use related damage. Factors that predict patterning in trampling damage are still poorly understood. We trampled flakes made from different raw materials on different sized gravel substrates. We controlled the surface (interior or exterior) exposed to the gravel. Damage patterns were investigated relative to variance in edge angle based on pre-trampling measures of edge angles equally spaced around tool edges. We explore differential patterning of damage using digitized tool outlines. Preliminary results suggest a signature of damage resulting from trampling. If confirmed this will provide a baseline for identifying residual patterning resulting from use.

Chair

McTavish, Rachel (University of Wisconsin-Milwaukee) [173]

Evaluating the Aztec Palimpsest: Faunal Analysis of a Mixed Late Woodland and Middle Mississippian Context

Archaeological contexts at the Aztec site (47JE0001) in southeast Wisconsin typically reflect a mix of Late Woodland and Mississippian materials. This paper examines the faunal remains excavated by the 2011 UWM Advanced Archaeological Field School from one such culturally ambiguous context at the site. A total of 7,743 vertebrate and 3,343 invertebrate remains recovered from a midden context outside the eastern palisade were analyzed. This is compared to reported assemblages from four other Late Woodland sites in Southeastern Wisconsin. Results are used to discuss variation in Late Woodland and Mississippian patterns of faunal exploitation.

Chair

Meadow, Alison [111] see Rockman, Marcy

Meadow, Richard (Harvard University) [245]

Discussant

Means, Bernard (Virtual Curation Laboratory) [29]

Geographic Variation in New Deal Archaeology Across the Lower 48 States

An examination of New Deal archaeology survey and excavation projects across the lower 48 states has revealed considerable geographic variation in the nature and extent of work relief archaeology projects. Some of this variation can be linked to strong regional personalities (e.g. William S. Webb and Tennessee Valley Authority archaeology), while other variation depended on local political acceptance or resistance of New Deal programs in general. In some cases, the nature of the archaeological record itself influenced the amount of New Deal archaeology conducted within a region. One challenge to examining geographic variation in New Deal archaeology is the fact that much of this work is unpublished or is only published in low circulation local archaeology or local historical society journals. Other challenges include the lack of specificity of the type of relief agency that funded individual archaeology projects, which renders it difficult to find further information. How an examination of geographic variation in New Deal archaeology can contribute to
interpretación que "Alta Vista es el taller más grande de turquesa herramientas antes mencionadas, condujeron a la exagerada fechados entre 500/550 d.C. y 680/800 d.C. Estimaciones utilizadas en su manufactura dentro de contextos arqueológicos cuentas y mosaicos de turquesa, así como algunas herramientas realizadas en este sitio arqueológico, obtuvieron piezas cortadas, Chalchihuites fue sometido a dichos análisis. Las excavaciones se expondrán datos no publicados y recientes análisis realizados de este proceso. El Mirador. A survey of the Maya lowlands shows that defensive features were a regular component of Preclassic architecture. No evidence was found to support the claim that Preclassic warfare was ritualistic. Instead, considerable evidence shows that massive expenditures were directed at making site cores defensible. This suggests that warfare was a serious concern during the Preclassic.

Medina González, José (INAH/Zacatecas) and Baudelina García Uranga (INAH/Zacatecas) [252] La Turquesa en Alta Vista, Narrativas versus Evidencias En los años setenta del siglo XX, gracias a los análisis por activación neutrónica se descubrió que varias piezas de turquesa recuperadas en diversos sitios arqueológicos en el noroeste de Zacatecas pertenecientes a la Rama Suchil de la cultura Chalchihuites, provienen de yacimientos mineros en Nuevo México en los E.E.U.U. y de Concepción del Oro en los límites de Zacatecas con Coahuila en México. No obstante, ningún espécimen de turquesa del centro ceremonial de Alta Vista-Chalchihuites fue sometido a dichos análisis. Las excavaciones realizadas en este sitio arqueológico, obtuvieron piezas cortadas, cuentas y mosaicos de turquesa así como algunas herramientas utilizadas en su manufactura dentro de contextos arqueológicos fechados entre 500/550 d.C. y 680/800 d.C. Estimaciones incorrectas sobre la cantidad real de turquesa y el número de herramientas antes mencionadas, condujeron a la exagerada interpretación que "Alta Vista es el taller más grande de turquesa [se calcularon 17,000 o 18,000 piezas] a la fecha encontrada en la arqueología norteamericana y mesoamericana. En esta ponencia se expondrán datos no publicados y recientes análisis realizados de la turquesa en este sitio con el fin de ofrecer una interpretación más acorde con el registro arqueológico recuperado.

Medina-González, Isabel (ENCryM-INAH) [29] Chair

Meanwell, Jennifer (MIT) [229] A Petrographic Analysis of Domestic Pottery Consumption at Calixtlahuaca Petrographic analysis is a powerful tool, allowing the archaeologist to examine clay sources and aspects of production, such as firing temperatures, tempering materials, and manufacturing techniques. In this study, pottery from two separate domestic contexts, one likely elite, is examined through time to determine if pottery production or consumption patterns altered with the introduction of new ceramic forms (comals) and wares from the Aztec Empire. Earlier petrographic studies of the surface collected material suggest that the majority of the ceramics used in Calixtlahuca were locally produced, although some variation in clay source and firing temperatures was noted. The current research will allow us to evaluate whether production and consumption patterns varied either with time (due to the Aztec conquest) or with status.

Medina, Paulo (Boston University) [290] Architecture that Infers Violence at El Mirador: Assessing Warfare in the Preclassic Period This paper presents archaeological data collected in 2008, 2010 and 2011 from El Mirador to assess Maya warfare during the Late Preclassic (400 B.C. – A.D. 250). One school of thought argues that warfare prior to the Late Classic (A.D. 600) was largely ritualistic. If true, it would preclude the need for large scale defensive features prior to this time. The other school believes warfare played a major role in the rise of complexity as early as the Middle Preclassic (600 B.C.). I document a feature called "El Muro Perimetral," the Wall, one of the features that enhanced the defensive posture of El Mirador. A survey of the Maya lowlands shows that defensive features were a regular component of Preclassic architecture. No evidence was found to support the claim that Preclassic warfare was ritualistic. Instead, considerable evidence shows that massive expenditures were directed at making site cores defensible. This suggests that warfare was a serious concern during the Preclassic.

Medina González, Isabel (ENCRyM-INAH) [252] Chair

Meierhoff, James (University of Illinois at Chicago) [92] World War II and the American Home Front: A Preliminary Exploration of Three German POW Camps Near Chicago As Europe was being destroyed for the second time in 40 years, American cities and their hinterlands during World War II lay unscathed. However, the war would come home to America in the form of hundreds of thousands of prisoners of war. Imprisoned in almost every State in the Union, interactions with these prisoners were often the only link between the war raging in Europe and the American home front. The story of these men, and the United States’ methods of housing and caring for them, is largely forgotten amid the larger and more dramatic events that occurred 1941-1946. This paper explores three World War II German Prisoner of War camps located in the Chicago suburbs. These camps, which held over 200 prisoners each, were established to utilize captive labor in civilian agricultural industries while millions of American men fought in the European and Pacific theaters of war. The initial archaeological pedestrian survey has confirmed that despite the apparent destruction and subsequent abandonment of these camps, the POW occupation surface still lay intact. These camps were branch camps of larger Fort Sheridan, and comprised of veterans of the African American soldiers who were put to work in suburban truck farms.

Mehta, Apurva [253] see Walton, Marc

Mejia Appel, Gabriela (Dirección de Salvamento Arqueológico) [17] Eating Patterns of the Population of Teopancacazo through PIXE Analysis This paper is the result of interdisciplinary research, which analyzed the food consumption patterns in Teopancacazo, Teotihuacan. The central hypothesis is that, through dietary studies, we can understand some aspects of the cultural life in ancient populations because sustenance is tied to different social processes. This analysis was conducted on a sample of the neighborhood center’s population with the Particle-induced X-ray Emission (PIXE) technique for the paleodietary study of trace elements. The results allow us to approach the multi-ethnic population that lived in Teopancacazo at different stages of its occupation during the Classic period.
Melgar, Emilio [252] see Ruvalcaba, Jose

Melgar, Emilio (Posgrado UNAM) [252] The Manufacturing Techniques of the Turquoise and Blue-Green Objects in Mesoamerica

In different sites of Mesoamerica, the archaeologists have found several turquoise and blue-green objects, like inlays assembled as mosaics and beads and pendants as necklaces and strings. Unfortunately, most of the studies about those objects had been focused on the symbolic meaning, its morphology, trade and use, but very few studies focus on the manufacturing techniques and the organization of their production. In this paper, I will present the technological analysis of the manufacturing traces that I applied on turquoise and blue-green inlays, beads, and pendants, from different sites of Mesoamerica, like Chiapa de Corzo, Teteles de Santo Nombre, Monte Albán, Alta Vista, Cerro Mochetumara, Pajones, El Bajío, Xochicalco, Tula, El Saltine, Chevè Cave, Eajola Cave, Tlaxiaco, Tamtoc, Nevado de Toluca, and Tenochtitan. To analyze the manufacturing traces of these pieces, I employ experimental archaeology and Scanning Electron Microscopy (SEM). This methodology allowed us to identify the lithic tools employed in their production with great accuracy and distinguish different technological styles and local and foreign lapidary traditions.

[252] Chair

Mendelsohn, Rebecca (University at Albany, SUNY) [185] The Effectiveness of Low-Cost 3D Alternatives for Archaeology and Museums

Archaeologists often overlook the use of 3D technology in cultural heritage, as they find the technology too expensive or the learning curve for 3D techniques too steep. This study analyzes the results of two user-friendly and cost-effective 3D techniques for medium and small-sized objects, and comments on their advantages and disadvantages. The first method employs close-range photogrammetry. It uses a standard digital camera to capture images of the objects and combine them in a software program to create a 3D image. The second method uses a low-end laser scanner to capture data points and develop them into a 3D model. The study seeks to determine, in what circumstances are low-cost 3D methods the most effective? What are the limitations of low-cost alternatives? How does the size of the object impact the effectiveness of these techniques? How feasible are these methods for use in the field? The study concludes with a discussion of the myriad ways 3D models can be effective research and teaching tools in archaeology and museum studies.

Méndez Melgar, César (Universidad de Chile), Omar Reyes (Centro de Estudios del Hombre Austral, Instituto d), Amalia Nuevo Delaunay (Instituto Nacional de Antropología y Pensamiento L), Juan García (Universidad Católica de Chile) and Charles Stern (University of Colorado) [26] Holocene Human/Environment Dynamics along the Eastern Andean Flank of Central Patagonia (Aisén Region, Chile)

The forest steppe ecotone at the eastern slope of the Andes in the Aisén region (43°40‘-49°15‘ S, Chilean Patagonia) provides a singular opportunity for assessing long and short term mutual responses between prehistoric/historic occupations and the environment. As a demographically marginal zone, northern Aisén developed an unstable dynamic equilibrium where the presence and absence of human beings during the Holocene can be understood as responses to climate change. On the other hand, human presence also produced measurable effects on the environment, especially through fires. By integrating archaeology, paleoecology, and geomorphology, we have investigated the following methodological approaches for evaluating these interactions. Evidence of human occupations starting at 11500 cal B.P. is positioned within the regional geomorphologic framework and paleoclimate reconstructions for the last 19000 cal B.P., as obtained from a pollen record at Lake Shaman and nearby peaks/troughs of charcoal from this record, compared with series of 14C dates from the archaeological sites provide insightful means for assessing the magnitude of human effect on the environment. ICP-MS obsidian sourcing and isotopic ecology are used as means for establishing mobility and space use through time.

Menendez, Damaris [65] see Navarro-Farr, Olivia

Mentesana, Roberta (University of Sheffield - UK), Peter M. Day (University of Sheffield - UK) and Simona Todaro (University of Catania - IT) [288] Pottery Manufacture in Phaistos: Continuity and Change over Two Millennia

Phaistos, a site in the Mesara Plain of Central Crete, is perhaps best known for the building of a court-centered building or "palace" at the beginning of the second millennium B.C. The innovative and highly accomplished polychrome pottery of the palatial period has overshadowed the early ceramic history of this important site, which sees intense human activity from the Final Neolithic period onwards (ca. 3600-1460 B.C.). A recent detailed study of the early phase stratigraphy and pottery has revealed that since the first phases of occupation the site of Phaistos was involved in periodic consumption events and that a pottery production area may have operated in the western slope of the site.

Pottery of these early phases has been analyzed with a multi-technique approach, consisting of PE and SEM analysis, revealing idiosyncratic ways of forming, of the combination of different pastes and of choices and manipulation of raw materials. The longevity of these “ways of doing” lies in contrast to the major social transformations that the timespan of our study encompass, notably the transition from the Neolithic to Early Bronze Age and the establishment of the “palace,” a trait of the emergent Cretan states.

Mentzer, Susan [76] see Thompson, Jessica

Mentzer, Susan (Eberhard Karls Universität Tübingen) [224] Approaches to Integrating Multiple Geoarchaeological Analytical Methods in the Study of Archaeological Features

The micro-contextual approach to the study of archaeological features utilizes a variety of microscopic analytical techniques to document the internal spatial organization and chemical compositions of anthropogenic materials. Developed for the study of hearths and other combustion features, this approach typically includes petrography paired with molecular spectroscopy, with all analyses conducted on one micromorphological thin section or resin-impregnated slab of sediment. Using an expanded suite of analytical techniques suitable for micromorphological blocks and closely-associated loose samples, this approach can be employed in the study of many types of archaeological features and sediments. Examples presented here span the Middle Stone Age through the Neolithic and include: 1) the integration of micromorphology, elemental compositional analyses, and stable carbon and oxygen isotopic analyses in the study of calcareous plasters; 2) radiocarbon dating and botanical analyses coupled with micromorphology and reflectance petrology in the study of deposits containing charred plant materials; 3) the integration of micromorphology, observation of materials in grain mount, elemental compositional analyses, and the extraction of soluble salts for the study of dung and stabilizing deposits; and 4) the use of micromorphology paired with μ-XRF or μ-FIR to aid in the collection and interpretation of luminescence and uranium-series dating samples.
Mercader, Julio

Plant Microbotanical Data from Middle Stone Age Sites to Understand the Environments in which Early Modern Humans Lived

The detection of areas suitable for hominins during late Pleistocene drought intervals is currently a priority for Middle Stone Age research. Predicting the location of populations and dispersal pathways through the East African Rift System during the last glacial phase is a challenging task due to scarce direct archaeo-vegetation data. We present a Mozambican phytolith record spanning 105-29 ka and argue for the necessity and utility of using local plant microbotanical data from archaeological sites to understand the past environments in which early modern humans lived. We assess biome structure, spatial variability, and compare phytolith-based to lacustrine environmental reconstructions to conclude that dense wooded landscapes dominated the area over much of the last glacial phase. Archaeological and botanical data suggest the hypothesis of a palaeodispersal along a montane woodland archipelago that could have attracted hominin settlement and facilitated dispersals through an inland bridge that connected Southern, Central and East Africa, and the two branches of the East African Rift System.

Meredith, Clayton [217] see Jerrems, William

Merrett, Deborah C. [38] see Zhang, Hua

Mesia, Christian (Museo de Arte Precolombino Casa del Alabado)

Feasting and Power during the Andean Formative: Interactions between Chavin and Cupisnique

Evidence for feasting activities has been identified in a midden located in the Wacheqsa sector at Chavin de Huantar. Deposits from the midden were formed from waste produced by collective consumption of food and drink, in other words, suprathousehold feasts. Ceramic types, faunal remains, narcotic paraphernalia and exotic items together yield the evidence necessary to argue for a feasting explanation of the stratigraphy recorded in the aforementioned midden. The occurrence of feasting at Chavin de Huantar carries implications for the interpretation of power strategies and corporate activities sponsored at Chavin during the Andean Formative. Feasting at Chavin de Huantar was a way to materialize power. It was an avenue for authorities’ propaganda, a way to control ritual knowledge and entice people into the system, an opportunity for display of success. The evidence from Chavin is contrasted with the existing evidence published for Cupisnique sites from the Peruvian north coast in order to compare scale, strategies and feasting paraphernalia between Chavin de Huantar and its ceremonial counterparts from the Peruvian north coast.

Meskell, Lynn [32] see Pearson, Jessica

These recent disasters have led to reevaluation of earthquake and tsunami potentials for other parts of the world, including the Caribbean Basin. Geological conditions suggest the potential for such future catastrophic events in parts of the Caribbean Basin. Since the European arrival there, we have some historical references to eruptions as well as tsunamis. Such geological preconditions suggest that paleotsunamis may have affected the Mesoamerican Caribbean littoral, thus encouraging attention to potential archaeological and geological paleotsunami indicators.

Messenger, Phyllis (University of Minnesota)

Gender, Archaeology, and the Pedagogy of Heritage

Since the seminal article by Conkey and Spector in 1984 calling for an archaeology of gender, a robust body of literature and theory on archaeology and gender have developed. Gendered aspects of archaeological practice include work relationships, divisions of labor, communication and cognitive styles, and specializations. This paper will discuss what feminist archaeologists have to say about the use of multi-vocality, multimodal narratives, and active engagement and collaboration to de-center archaeologists’ knowledge claims and open space for community-based frameworks of heritage work. It will also address the lingering impact of gender inequality in the profession, heard through the stories of mid-career heritage professionals. It will conclude with the lessons we can learn from these stories and the work of feminist archaeology in order to develop a pedagogy of heritage that serves all.

Messersmith, Mallory (University of Alabama at Birmingham) and Mark McCoy (University of Otago)

Airborne LiDAR Survey of Fortified Earthwork Sites in Northland, New Zealand

Maori constructed some +6,000 fortifications, called pa, in the pre- and early post-European contact era. But, few of these sites have been surveyed at a level of detail necessary to evaluate the commonplace ditch-and-bank feature as a defensive strategy. The research presented here explores the utility of airborne LiDAR-derived remote sensing to advance this aspect of research in New Zealand. Digital elevation models (DEMs) and digital terrain models (DTMs) for several known sites in the Northland region of New Zealand were used to measure key functional aspects of ditch-and-banks in currently unexcavated earthwork sites (pa). These results were ground truthed using traditional archaeological methods (handheld GPS, and tape and compass) to evaluate the accuracy of LiDAR surface modeling. The results support the notion that LiDAR can provide an accurate and cost-effective method for quantitative analysis of these archaeological features. Furthermore, the resulting measurements contribute to our understanding of Maori fortifications. This work was funded by the National Science Foundation’s East Asia and Pacific Sumer Institutes program.

Metcalfe, Jessica (University of British Columbia) and Fred Longstaffe (Western University)

Paleoenvironments of the Great Lakes Region Inferred from Stable Isotope Analysis of Mammoths and Mastodons: Implications for Clovis People

The first humans in the Great Lakes region arrived around 11,000 14C yrs B.P., at a time when mammoths and mastodons still inhabited the lands exposed by glacial retreat. In this study, we use stable isotope analysis of mammoth and mastodon bones and teeth to reconstruct aspects of the climate and environment of the Great Lakes region (Ontario and New York) during and prior to the arrival of Clovis-era humans. This approach allows secure chronological control, since bones and teeth can be directly dated. It also provides climatic information at a “human” time-scale (i.e., local seasonal and annual environmental changes), in contrast to
the longer-term and/or global climate variations recorded by other proxies. Our data support the expectation that mammoths and mastodons inhabited distinct environmental niches. Serial sampling of mastodon tooth enamel reveals regular seasonal variations, with distinct patterns among individuals. We discuss the potential of these data for reconstructing seasonal changes at precise moments in time, and their implications for understanding human responses to environmental change.

Meyer, Matthias [20] see Thalmann, Olaf

Meyers, Maureen [24]

Exchange, Control, and Power at a Mississippian Periphery: The Fourteenth-Century Carter Robinson Chiefdom

Excavations at the Carter Robinson mound site in southwestern Virginia have expanded our understanding of Mississippian peripheries by providing detailed excavations of a late prehistoric frontier chiefdom. The migrant inhabitants located themselves at the periphery to more directly control production and movement of trade goods. Ceramic analyses demonstrate that over time inhabitants increased their relations with local populations, resulting in a mixture of ceramic attributes. Concomitant with this change was an increase in craft production, and I suggest the two are closely intertwined. This examination of a Mississippian periphery highlights the role of exchange in border communities, and the effects of that role on local and regional populations at and beyond the core.

Meyers, Cory (Indiana University of Pennsylvania), Victoria Harding (Graduate Student Indiana University of Pennsylvania), Ryan Spittler (Graduate Student Indiana University of Pennsylvania) and Justin Daley (Graduate Student Indiana University of Pennsylvania) [187]

Rediscovering Dragoo

This poster presents the research conducted by the Advanced Graduate Field School at Indiana University of Pennsylvania on a Monongahela village site in Blairsville, Pennsylvania. The primary goal of this project was to locate the western edge of the village being excavated for the Late Prehistoric Project run by Dr. Beverly Chiarelli and Dr. Sarah Neusius. During excavation we located evidence of Don Dragoo’s 1952 excavations at the Johnston Site (36IN2) and possibly an additional outer stockade of the western edge of the village and an earlier occupation. Five 1 x 2 meter units were excavated in the western portion of the site. Four of the five units showed evidence of Dragoo’s western excavation trench. Using maps from the Carnegie Museum in Pittsburg we were able to line up Dragoo’s findings with the features evident in our units. These five units provided a better understanding of previous excavations at the Johnston Site and the extent of the site. Artifact analysis supports the idea of a change in artifact use moving from east to west across all five units. Further excavations and research are needed to gain a better understanding of the entire site and the change in artifacts.

Mgeladze, Ana [226] see Varoutsikos, Bastien

Michel, Mark (The Archaeological Conservancy) [110]

Protecting Sites through Ownership

The United States is almost alone in the world in not protecting its ancient heritage sites no matter where they are located. Because of our strong national commitment to the rights of private property owners, privately owned archaeological sites in America have little or no legal protection. Instead, property owners are the legal possessors of all the artifacts and cultural materials on a private site. These owners are largely free to do as they like with the site – save it, loot it, or destroy it. Given these facts, the best way to preserve and protect privately owned archaeological sites is, in fact, for responsible parties to own them. For more than 30 years The Archaeological Conservancy has been acquiring and permanently preserving archaeological sites throughout the United States. Acquiring land from willing sellers is a time-consuming process, but it is a successful one. In the Southwest, a large number of the region’s most important sites are now permanently preserved.

Mickel, Allison (Stanford University) [9]

Diary of the Day: Database to Display

Since 1996, the Çatalhöyük Research Project has employed the use of diary-writing to encourage reflexivity and dialogue among members of the project. These diary entries represent an opportunity to write about hypotheses, interpretations, and findings without the constraints of prompts or forms. The platform was created to encourage dialogue between team members about developing theories, since anyone on site could read and respond to each others’ diary entries. This year, there was a renewed focus on generating discussion amongst researchers within the diaries. The database was redesigned to allow direct, linked responses to specific diary entries, as well as tagging with keywords. Furthermore, as part of this effort, an excerpt from one diary entry each day was posted in two visible locations on site in order to encourage debate and discussion on the database. The hope was that making the diary entries part of the site's visible landscape would raise awareness about the diary database, generate excitement about its potential, and spark conversation between individuals who might not otherwise feel compelled to share their ideas. Here, I assess the efficacy of the 'Diary of the Day' endeavor and outline its particular effects on the information created in the diary database.

Mickleburgh, Hayley [79]

Teeth Tell Tales: Dental Anthropology of the Pre-Columbian Caribbean

This paper presents a selection of results from a dental anthropological study into diet and non-alimentary tooth use in the pre-Columbian Caribbean. The first of its kind in the region, this study includes 458 human dentitions from sites spanning the main Ceramic Age occupation phases and cultural areas of the archipelago (400 B.C. – A.D. 1500). The research combines bioarchaeological approaches including analyses of dental pathology, macrowear, and microwear (SEM), with evidence from previous archaeological, paleodemographic, paleoenvironmental, and stable isotope studies. Ethnographic and ethnohistoric sources are consulted to contextualize results.

This project has revealed considerable variation in dietary practices between sites, yet demonstrates agricultural intensification throughout the region over time. Sex differentiation in diet and non-alimentary tooth use was found in many sites. New insights into LSAMAT may help understand this pattern of wear in other regions. A single case of intentional dental modification in Cuba may evidence the first (forced) migration under the auspices of the European colonial powers. For the Caribbean this study highlights the importance of bioarchaeological research. In a global perspective, this study contributes to the ever growing body of dental anthropological work dedicated to understanding past human culture and society.

Mickleburgh, Hayley [254] see Hoogland, Menno

Micklin, Destiny [38]

The People of Actuncan: Locals or Migrants?

Excavations at Actuncan in the upper Belize River valley revealed nine burials in a household patio group northwest of the civic core. Ceramic analysis dated three burials to the Early Classic period, approximating the other six to the Late and Terminal Classic. This poster uses isotopic analysis to explore two questions: do the individuals interred during Late and Terminal Classic originate
from different regions than those buried during the Early Classic? Do individuals buried in this location have origins differing from those interred elsewhere at Actuncan and the Belize River Valley?

Strontium, carbon and oxygen isotope analysis supplies key data for identifying population movement. Isotope values in the tooth enamel of 13 individuals provide information on food and water inputs during infancy and early childhood. Strontium isotope values from the Belize River Valley are distinct from those of the central and southern Maya lowlands, as well as the Maya Mountains and its foothills. Carbon and oxygen isotope analysis provides information on dietary staples and water source. Identifying the origins of the individuals at Actuncan allows for richer understanding of how the ancient Maya moved across the landscape in this region and how this movement affected the occupation of Actuncan.

Middleton, Angela (University of Otago) [73]

Mission Archaeology in the Pacific: From Matavai Bay to the Bay of Islands

Mission outreach into the Pacific began with London Missionary Society arrivals at Matavai Bay, Tahiti, in 1797. This initiated an evangelical network extending across the islands of the Pacific Ocean to Port Jackson (Sydney), and Bay of Islands, northern New Zealand. This expanding network of mission sites and personnel will be explored, along with an examination of the current state of knowledge of mission archaeology in the Pacific. Particular reference will be made to archaeological investigations at Hohi, New Zealand’s first mission station and first permanent European settlement, and its successor at nearby Te Puna. These were examples of the ‘household’ mission, modeled on the Christian family, the male missionary as household head and the wife teaching domestic arts to indigenous Maori. Consideration will be given to how the New Zealand examples compare with other Pacific localities, and the shared and opposing characteristics of mission engagement across the region.

Middleton, William [264] see Hedgepeth, Jessica

Mihailovic, Dusan [80] see Boric, Dusan

Miksic, John [104]

Highland-Lowland-Mainland Relations in Sumatra and the China Factor

The highland-lowland diad has long been a staple of Southeast Asian studies. Some scholars have posited an antagonistic relationship analogous to that between pastoral nomads and settled farmers. Bennett Bronson in a much-cited paper developed a theory according to which lowlanders with access to imported technology and information exerted economic exploitation over highlanders. Almost all historical data on the highland groups of Southeast Asia originates from the lowlands. Recent archaeological research in Sumatra suggests that the position of the highland dwellers of Sumatra in intra-island economic networks was relatively equal to that of the populations of the lowland ports and their trading partners in mainland Asia. Earlier notions of dendritic patterns and gateway cities are being challenged by new archaeological discoveries, particularly in the headwaters of the Batanghari and the Batusangan river region of west Sumatra. The historical stereotype of the highlanders as subordinates of the lowland polities and their overseas trading partners in South and East Asia is gradually being replaced by a more complex picture. This paper will discuss the implications of recent archaeological research in Sumatra for the reconstruction of this relationship in the premodern period.

Milbrath, Susan (Florida Museum of Natural History)

[166] Evidence for Astro-Agronomy among the Ancient Maya

Venus is closely linked with the solar cycle in Venus almanacs that integrate five Venus cycles with eight solar years. Use of this almanac spans from central Mexico to the Maya area, and it apparently originated in the Late Preclassic period. The earliest written reference to the Venus cycle appears on the La Mojarra Stela from Veracruz, where texts also refer to the annual cycle and a solar eclipse. An interest in Venus in the context of the eclipse cycle is apparent in Postclassic texts showing Venus appearing in an eclipse almanac of the Dresden Codex. Recent research on the Madrid Codex shows a similar interest in integrating the Venus cycle with eclipse events. This almanac depicts a repeating pattern of solar eclipses linked to Venus as the evening star at times of year that overlap with the agricultural cycle. Clearly Venus phases and eclipse events were closely watched in relation to the planting cycle, reflecting a form of astro-agronomy that we are only beginning to understand.

Miles, Wesley [89]

Traditional Crop Production in the Middle Gila River Valley: An Experimental Study

The Historic Akimel O’odham and the antecedent Hohokam material culture reflect an irrigated agriculture tradition spanning the past 2000 years in the Middle Gila River Valley. Hohokam canal systems involved the short-term management of available river water in addition to long-term management of agricultural soils across variable biotic communities and soil types. Ongoing experimental agronomic studies of traditional crops are being conducted on the Gila River Indian Community to better understand crop productivity in relation to soil quality and irrigation water supply. Traditional O’odham maize was grown during the second growing season of 2012 using ethnographically-observed planting techniques and crop density. Soil chemistry, soil moisture, precipitation, relative humidity, and temperature data were recorded for each experimental field plot. Grain production per plot is compared to environmental conditions, soil properties, and total irrigation supplied over the growing season. These preliminary data are used to refine models of ecological “risk landscapes” in the Hohokam case study area.

Millaire, Jean-François (University of Western Ontario), Flannery Surette (University of Western Ontario) and Jordan Downey (University of Western Ontario) [19]

Entangled Pots and Rags: Luxury Object Making in the Virú Valley, Peru

A broad-spectrum analysis of ceramics and textiles from the Virú Valley reveals fascinating processes of relational and material entanglement, allowing us to move beyond the “local-foreign” dichotomy and to question earlier, essentialist, periodizations of the region. Focusing on contextual data from the Early Intermediate period (200 B.C. – A.D. 800), this paper highlights how shifting trade relations with neighboring societies over the long term (Salinar, Moche, Recuay, Huari) has shaped luxury object making, and how these, in turn, may have shaped how foreign affairs were conducted. This focus on the entangled nature of object making also brings us to query the value of utilitarian and fancy ceramics and textiles as building blocks for archaeological chronologies.

Miller, G. Logan (Ohio State University) [6]

Lithic Microwear Analysis of Hopewell Bladelets from Fort Ancient: Implications for Ritual Economy

The Hopewell horizon in eastern North America is marked by the large-scale production, distribution, and deposition of ritual and craft objects. However, no clear model currently exists for the organization of production of these objects. It is generally assumed that they were produced at earthworks by individuals with special access to ritual knowledge and materials. If this is the
case then were the objects produced in households, specialized workshops, or communal spaces? Is there any evidence for changes in the patterns of production through time? This study addresses these questions through a large-scale microwear analysis of Hopewell bladelets recovered from several different contexts at the Fort Ancient earthworks. Results indicate that stone and copper artifacts were produced at Fort Ancient using bladelets. Additionally, some households, especially those in the interior household cluster, were more involved in craft production than others. Radiocarbon dates suggest that craft production may have shifted from corporate communal spaces to household production through time. All of these findings have important implications for the study of the Hopewell ritual economy and social organization.

Miller, Jennifer (University of Alberta)

[8] Possible Middle Stone Age Ostrich Eggshell Beads

Ostrich eggshell (OES) beads are some of the earliest forms of personal ornamentation; they can be found at many African archaeological sites and first appear in the late Middle Stone Age (MSA) or early Later Stone Age (LSA). This poster presents data from a newly excavated assemblage from Magubike rockshelter, which may have evidence of MSA OES beads. The site consists of a granite rockshelter in the southern highlands of Tanzania, and thus far has yielded evidence of occupation from the late Acheulean through modern times. The OES beads analyzed here were excavated in the summer of 2012, and were recovered from a sequence of stratified Historic/Iron Age and Middle Stone Age (MSA) levels, with no apparent Later Stone Age component. Approximately 100 beads and bead making materials were recovered, including 8 OES artifacts found in association with a MSA assemblage. If direct dating methods (possibly available at the time of presentation) confirm the antiquity of these MSA beads, they will rival beads from Enkapune ya Muto, Kenya, and Mumba Rock Shelter, Tanzania, as some of the world’s oldest. These new artifacts from Magubike may provide insight into the early use of OES beads.

Miller, Naomi (Univ of Pennsylvania Museum-ISAW) and Ayse Gürsan-Salzmann (University of Pennsylvania Museum)

[30] Plants and Politics: Preserving the Historical Landscape and Open-Air Archaeological Site at Gordion, Turkey

Vegetation management on open-air archaeological sites can mitigate the deleterious effects of environmental conditions. Plants can also play an important aesthetic and educational role in site presentation. In the Gordion region of central Anatolia, more than 100 Phrygian tumuli and an extensive ancient settlement are outstanding features of the historical landscape. The tumuli date to the Phrygian period (ca. 800 BC). They are covered with remnants of the diverse native steppe vegetation, yet tumuli and biodiversity are both threatened by agricultural development. The excavated settlement mound is protected by an encircling fence, so plants grow unhindered. There, plant roots harm the walls of the exposed structures, and patchy growth makes it difficult for tourists to understand the site plan. Vegetation management is therefore critical for the preservation and interpretation of both types of open-air archaeological remains. This contribution presents straightforward technical solutions to a site-preservation problem whose implementation is strongly affected by local, national and international entities.

Miller, Melanie (University of California, Berkeley) and Christine Hastorf (University of California, Berkeley)

[74] What Else Can Teeth Tell Us? Investigating the Socialization of Children through Food Using Stable Isotope Analyses

Human teeth record the chemical signatures of foods consumed during childhood and can provide information about the dietary changes that a child experiences such as the age of being weaned from breast milk to a solid-food diet. Because food is dynamically involved in the creation and expression of social identities, such dietary transitions are important indicators of new stages in the social life of a child. Through the lens of a life course approach, stable isotope data from human teeth can be used to track the social development and trajectory of individuals as their diets change from infancy through adolescence. Stable isotope data (carbon, nitrogen, and oxygen) from organic and inorganic fractions of human teeth from early settled inhabitants of the Taraco Peninsula, Bolivia will serve as a case study to investigate how childhood diet may be a way to understand the development of particular social identities that are distinguished through diet.

Miller, Myles (GMI)

[218] A Millennium of Identity Formation and Maintenance in the Jornada Mogollon Region

Social and ideological developments of the Jornada Mogollon region of southern New Mexico and west Texas are often considered peripheral to the greater Southwest. This perspective belies the fact that inhabitants of the region maintained one of the more successful and stable societies in the prehistoric Southwest. The fluorescence of Jornada style iconography in rock art, ceramics, and other media during the 14th century is well known. Recent chronometric and iconographic studies show that the underlying cosmology and ideology – the basis of Jornada ethogenesis and identity - can be traced to as early as the 6th century and perhaps earlier. Over the span of several centuries, Jornada social identity was also expressed through agave fermentation and feasting, acts of ritual dedication and termination, ceramic technology, and orientations of rooms and settlements. The Jornada region offers a unique setting for the study of how identity was formed, conserved, and maintained over periods of several centuries.

Miller, Christopher

[224] Deposits as Artifacts: Using Microfacies Analysis to Interpret Intrasite Settlement Dynamics

Over the past few decades, micromorphology has become the key method in geoarchaeology for identifying and interpreting the roles played by geological, biological and human agents in the formation processes of archaeological sites. In particular, geoarchaeologists can use micromorphology to extract data and information from anthropogenic deposits on past human activities and behaviors. In this sense, by using the proper methods, geoarchaeologists can treat deposits as artifacts. A valuable concept in the analysis of deposits as artifacts is the microfacies concept. Originally developed in sedimentary petrology, the microfacies concept has been successfully applied to the geoarchaeological investigation of several types of archaeological sites. Distinct microfacies and microfacies associations can be linked to certain past human activities. In particular, because microfacies have an inherent spatial component, microfacies analysis of anthropogenic deposits can be informative about the spatial arrangement of activities within archaeological sites. Here, I discuss recent advances in the microfacies concept in geoarchaeology, particularly focusing on how it can be used to investigate intrasite settlement dynamics. As an illustration of the concept, I present data from Paleolithic and Stone Age hunter-gatherer sites from Germany and South Africa.

Miller, Heather (University of Toronto)

[245] Discussant

Miller, Melanie [263] see Porter, Benjamin

Mills, Peter [62] see Lundblad, Steven

Mills, Peter (University of Hawaii Hilo)
independently documented differences in ceramic production, different network "textures" emerged and compare them to at several network measures to better understand how these rival the well-known Mauna Kea adze quarry in their extent of and distribution, and the existence of multiple quarries that could Findings point to regionally divergent patterns in adze production Hilo, Otago and Queensland, over 21,000 samples have now been of archaeological basalt and volcanic glass in Hawaii, first by Marshall Weisler and later by geoarchaeology labs in Oregon, Hilo, Otago and Queensland, over 21,000 samples have now been analyzed. A review of the expansive data set is presented. Findings point to regionally divergent patterns in adze production and distribution, and the existence of multiple quarries that could rival the well-known Mauna Kea adze quarry in their extent of intersiland distribution.

[73] Discussant
[142] Chair

Miller, Barbara (University of Arizona)

Multiscalar Perspectives on Social Networks in the Late Prehispanic Southwest

The application of social network analysis (SNA) to archaeology is closely tied to historical trajectories and interactions occurring across widely varying social and spatial scales. Rather than seeing this as an impediment to the application of social network analysis in archaeology, we show how changing the regional scale of inquiry can lead to different yet complementary interpretations about the relationships among settlements. Using decorated ceramic frequency data from the Southwest Social Networks Project we present the analysis of three different spatial scales over time to show how the same social processes of migration in the 13th century followed by widespread movements in the 14th and 15th centuries were expressed in terms of their network characteristics. In the southern Southwest these processes resulted in a highly connected network with many long-distance connections, while in the northern Southwest networks were more discrete with more short-distance connections. We look at several network measures to better understand how these different network "textures" emerged and compare them to independently documented differences in ceramic production, population density, and migration histories.

[161] Discussant
[106] Chair

Minc, Leah, Jason Sherman (University of Wisconsin-Milwaukee), Christina Elson (Science Visualization), Charles Spencer (American Museum of Natural History) and Elsa Redmond (American Museum of Natural History)

Clay Survey and Ceramic Provenance in the Valley of Oaxaca: Mapping Out Pottery Production and Exchange in the Late to Terminal Formative

The Oaxaca Clay Survey was initiated to map trace-element and mineralogical variation in clay composition as a basis for determining, ceramic provenance. Natural clays have now been sampled from more than 250 locations throughout the valley, and analyzed using INAA in combination with ceramic petrography. Spatial averaging was used to create a series of smoothed "topo maps" showing how element concentrations vary over space, and to generate a regular reference grid of concentration values against which ceramics could be compared. Here we apply this continuous spatial model to the task of sourcing pottery (N=430) from the Late and Terminal Formative periods (500 B.C.E. - 200 C.E.). We focus on the Valle Grande (Ocotlán-Zimatlán region), in order to examine the regional organization of pottery production and extent of ceramic exchange among key regional and local administrative sites during the era of early state formation. By providing a robust means for monitoring exchange at the intra-valley level, the clay survey and ceramic provenance determinations allow us to revisit long-standing models for craft production and market system development, and force us to reexamine the relationship between political and economic processes in the Valley of Oaxaca.

Miranda, Paula [168] see Scheinsohn, Vivian

Misarti, Nicole (Water and Environmental Research Center), Luis Borroto (CONICET-IMHICIHU, UBA), Manuel San Roman (University de Magallanes), Herbert Maschner (Idaho State University) and Bruce Finney (Idaho State University)

Marine Paleo-Food Webs from Southernmost Patagonia: Tracing Human Resource Use by Geographic Area through Stable Isotope Analysis

The archaeological records of the coastlines of southern Argentina and Chile are well preserved and provide data critical to understanding the effects of climate change on humans and the marine ecosystems they relied upon. Preliminary isotopic analysis (C and N) of 290 bird, fish and mammal samples from archaeological sites spanning 7000 years in both regions provide evidence of changes in marine ecosystems based on geographic location. This affects how researchers should interpret differential resource consumption by humans across these areas. Species analyzed include southern sea lion (Otaria flavescens), southern fur seal (Arctocephalus australis), cormorant (Phalacrocorax sp.), penguin (Aptenodytes patagonica and Eudyptes chrysocome), gull (Larus dominicanus), fish (Eleginops maclovinus and Salilota australis) and human (Homo sapien).

Misarti, Nicole [45] see Barnes, Kelli

Mitchell, Patricia (kp environmental, LLC)

Camp Young Revisited

Camp Young (CA-RIV-1117) was the first divisional camp for General George S. Patton's Desert Training Center/California-Arizona Maneuver Area (DTC/C-AMA) during World War II and served as his headquarters. It was one of the more permanent facilities and contained the most improved quarters of the divisional camps. The entire Camp has not been physically inspected to determine what does or does not remain, and although the main living quarters for the camp were located north of Interstate 10 in the 1970s, it is the outlying ranges and associated resources located south of the freeway that have had focused fieldwork conducted in the past decade. Since the work was required by CEQA or NEPA only the resources located within the footprint of each project have been documented. kp environmental revisited the site in the spring of 2011 for the 110-mile Desert Southwest Transmission Line Project and expanded on the southern boundary use area of Camp Young. This presentation provides a historical view of Patton's headquarters and the projected reconstruction of the divisional camp and DTC/C-AMA activities derived from those studies.

Mitchell, Myles [165] see Guilfoyle, David

Mixter, David (Washington University in St. Louis) and Lisa LeCount (The University of Alabama)
ABSTRACTS OF THE 78TH ANNUAL MEETING

[256] Dating Actuncan: Contextualizing Social and Political Transitions within a Long-Lived Maya Center

Recent research at the Maya site of Actuncan, Belize has revealed a long occupation history dating from the terminal Early Preclassic to the Early Postclassic periods. In the absence of hieroglyphic texts, local ceramic sequences and radiocarbon dates must be used to place Actuncan within historical context. Ceramic dating indicates that Actuncan was subject to boom and bust cycles that correlate with demographic shifts in early settlements and later political power dynamics within the upper Belize River valley region. This paper presents the results of recent radiocarbon dating at Actuncan. Our absolute dating strategy includes samples from civic and household contexts from across the site as well as those from a complex building sequence associated with a long-lived elite house. We focus on dating major milestones within the site’s history – its initial occupation associated with Early Preclassic Cunil ceramics, the Late to Terminal Preclassic transition to divine kingship, the collapse of the site as a major Classic period center, and its reestablishment as a post-royal political center during the Terminal Classic period. These dates will more securely situate Actuncan’s social and political transitions and provide insight into the participation of individual households in these transitions.

Miyamoto, Kazuo (Kyushu University)

[216] Reconsidering Modes of Contact between the Northern Chinese Bronze Culture and Those of Southwest China: The Crescent-Shaped Exchange Belt Reconsidered

This paper resolves the question of the dating and chronology of stone cist graves containing bronze artifacts in the Southwest China, according to the results of Sino-Japanese joint excavations conducted on stone cist graves in Sichuan Province of China between 2008 and 2010. It is furthermore argued that the emergence of bronzes in this area might be connected with those from Northwest China, suggesting that the model of the Crescent-shaped Exchange Belt would need to be modified significantly. It will thus be reasoned that the bronzes in this area developed independently.

Mizoguchi, Koji (Kyushu University, Japan)

[106] Prestige Goods and Social Hierarchization Revisited: A Formal Network Approach to the Hierarchization of Intercommunal Relations in the Middle Yayoi Period in Northern Kyushu, Japan

This paper shows that the monopolization of contacts with the Other, signified by the monopolistic acquirement and distribution of prestige goods, can indeed be the “prime mover” in social hierarchization. This was demonstrated by examining discrepancies between the intercommunal hierarchy simulated by centrality analysis methods of formal network analysis and that indicated by the differences in the contents of grave goods from the richest burials in the individual polities comprising the northern Kyushu Yayoi cultural horizon. The former shows that the highest centrality scores are achieved by those polities that occupy the geographical core of the northern Kyushu region whereas the latter shows that one of the highest-ranked burials of the region is actually located in the northwestern periphery of the network of interactions reconstructed by the distribution of prestige goods, such as bronze mirrors, imported from the Han Chinese outpost of Lelang. The polity where the burial existed neither had the largest population concentration nor enjoyed any particular advantage in food/material production, strongly suggesting that its position at the top of the hierarchized network was achieved by its geographical location, advantageous for contacts with Lelang.

[161] Discussant

Moats, Lindsey (Texas Tech University) and Sarah Nicole Boudreaux (Texas Tech University)

[213] Powerful Landscapes: A Glimpse of an Elite Settlement on the Dos Hombres to Gran Cacao Archaeological Project

In 2012, the Dos Hombres to Gran Cacao Archaeological Project (DH2GC) began the first formal excavations at N950, a medium-sized elite group located approximately one kilometer from the large Maya center of Dos Hombres in Northwestern Belize. The group consists of several sizable structures, the largest of which are located on a knoll, elevated above the surrounding area. The group shows extensive use and because of this the 2012 excavations at N950 focused on collecting chronological information about the occupation and possible function of the area. This paper will detail the results of the 2012 excavations focusing on initial occupation data gathered from archaeological excavations and laboratory analysis of artifacts recovered from the group. This information will then be used to make initial conclusions about the function of the N950 group and how it fits into the settlement patterns observed in the DH2GC Archaeological Project area.

Moe, Jeanne (Project Archaeology-BLM) and Crystal Alegria (Montana State University)

[269] Absaroka Agency Volunteer Project: Longitudinal Learning Research

In July 2011, twelve volunteers from Montana and Wyoming participated in excavations at the Absaroka Agency. Staff from Project Archaeology, a national education program, designed and conducted the volunteer project. All volunteers attended a three-hour training session before excavating. Participant evaluations show that the volunteers considered this project worthwhile and expressed interest in participating in future volunteer projects. Telephone interviews conducted in the winter of 2012 indicate that many participants continued to learn about archaeology and Crow history after the field experience. This paper examines the efficacy of the learning experience and provides recommendations for volunteer excavation projects.

Mogetta, Marcello [105] see Opitz, Rachel

Mohanthy, Sudarsana and Jillian Serio

[106] An Analysis of Burials found in Yschma Domestic Spaces at the site of Panquilma in the Lurin Valley, Peru

The Yschma site at Panquilma yielded two burials. The mumified remains of two individuals were discovered in the same unit; however, they were separate and exhumed from different layers. These burials were not found within the mortuary area of the site, such as a cemetery or mausoleum, but rather in the domestic sector of Panquilma. Ancestral veneration could explain this blurring of boundaries within the organization of Yschma society, however the contextual information associated with the find is not consistent with typical methods of ancestor worship. The evidence lends itself to a different explanation worth investigating. The known burial practices of the Yschma describe notable changes in their mortuary behaviors upon the Inka conquest, but offer little explanation specifying what kind of changes were adopted. Through this paper we present the archaeological context and associated artifacts found within this unit with the intent of describing the ancient rituals which lead to the final resting place of these individuals within the domestic sector and in an attempt to relate this mortuary alteration to the effects of the Inka conquest, e.g. the shift in economic, political and religious power and control in the region.

Mol, Angus (Leiden University, Netherlands), Corinne Hofman (Leiden University) and Menno Hoogland (Leiden University)

[106] Remotely Local: A Network Model of the...
Fourteenth-Century Settlement of Kelbey’s Ridge, Saba

The settlement of Kelbey’s Ridge is located on Saba in the heart of the Northeastern Caribbean archipelago. During the past 25 years Saba has been the focus of intensive and extensive archaeological fieldwork undertaken by the Caribbean Research Group, Leiden University. Building on the archaeological relational datasets that have been collected during this period, this paper will investigate the role of Saba, specifically the site of Kelbey’s Ridge, in the Late Ceramic Age network of the Northeastern Antilles. Several unique features of the island and the site testify to the fact that, although Saba itself is small (5 sq mi/13km²), its inhabitants were taking part in patterns of mobility and interaction that took place at the local, regional and interregional level. Through an ego-network approach the island of Saba will be shown to be a microcosm of overarching, 14th century network processes and dynamics. By doing so this paper will contribute to the evolving view of Caribbean Late Ceramic Age patterns of interactions, approaches that seek to integrate varied archaeological relational datasets, and discussions on the status of “islands as units of analysis” in archaeological network studies and beyond.

Moderator

Molenda, John (Columbia University)

Overseas Chinese Islands in the American West

This paper uses Islands as a metaphor to explore similarity and difference in Overseas Chinese artifacts, sites, and landscapes along the first transcontinental railroad. A multiscalar approach will be applied to archaeological residues of Overseas Chinese activities in the Tahoe National Forest dating from the 1860s-1880s. The author will present interpretive sketches at three distinct scales: a single artifact, a bounded site, and the landscape of the railroad itself to explore how differing scales of analysis allow ‘the past’ the ‘show up’ in different ways. Archaeological investigation will be presented as an engagement with a productive tension between methodological enclosure and interpretive disclosure.

Mollard, Priscilla (California Academy of Sciences/SFSU)

Integrated Studies of Maya Bioarchaeology and their Potential

Maya archaeology is not typically known for its application of the bioarchaeological approach. Environmental factors belie the wealth of mortuary remains that are revealed through excavation in the Maya lowlands and yet, while artifacts from mortuary contexts are smoothly incorporated into the corpus of excavation data, the physical remains of the inhumed are often considered separately from their cultural contexts. An increase in integrated mortuary and bioarchaeological research would have the potential to shed light on crucial concepts such as health, diet and pathology among the ancient Maya, and could reveal trends associated with multifaceted issues such as demography, environment, status, and even the factors contributing to the Maya collapse. This work will serve as an overview of the immense potential that such integrated research has for the field of Maya archaeology, and will delineate the multiple lines of evidence that can be revealed by incorporating studies of the body and its material-mortuary context directly into the archaeological data. Furthermore it will be shown that the Maya population, particularly during the Classic Period, is an ideal sample population from which to both draw bioarchaeological data and to test and refine the methods by which these data are recovered.

Molle, Guillaume (CIRAP) and Eric Conte (CIRAP - University of French Polynesia)

New Investigations on Hane Dune Site (Ua Huka) and the Implications for the Colonization of the Marquesas Islands

Since the first fieldwork conducted by Suggs, the Marquesas archipelago has remained at the center of discussions regarding the colonization of East Polynesia. One among several key sites, Ua Huka Island’s Hane Dune site proves particularly important. Previously excavated by Sinoto and Kellum in 1963-64, it demonstrated a complex stratigraphy associated with rich deposits of material remains. However, the oldest dates included in Sinoto’s orthodox model of settlement for the region were later put into question. Facing the problems of both the validity of the dating results and the interpretation of the stratigraphy, it was determined that the site demanded further investigation. In 2009, E. Conte and G. Molle directed a new fieldwork session, excavating 18 m² of the site and documenting 10 stratigraphic layers. Based on the consistency between the stratigraphy and associated radiocarbon dates, we are now able to reconstruct a chronological sequence from approximately 900 to 1650 A.D. Our results are integrated into a reflection about the colonization of the Marquesas Islands, highlighting the idea of initial settlement occurring at the end of the first millennium A.D. Our results are also compared to other chronological data sets recently obtained in the central archipelagoes of East Polynesia.

Monroe, Cara (UCSB Anthropology and Washington State University), Eric Lenci (San Jose State University; Muwekma Ohlone Tribe), Alan Leventhal (San Jose State University College of Social Science), Rosemary Cambra (Muwekma Ohlone Tribe) and Brian Kemp (Washington State University Dept of Anthro/Sch Bio)

Ancient Human DNA Analysis from CA-SCL-38 Burials: Correlating Biological Relationships, Mortuary Behavior, and Social Inequality

The Late Period (1000 YBP—European Contact) in the San Francisco Bay area of California witnessed an increase in social complexity as well as an emerging ceremonial and social interaction sphere that included similar treatment of the dead distinct from earlier periods. These changes in mortuary treatment have been interpreted as either a reduction in overall inequality with a shift toward an egalitarian corporate group identity based on kinship or represent emerging elites that were increasingly differentiated from other segments of the community. Neither scenario is mutually exclusive. The predominately Late Period earth mound cemetery site of CA-SCL-38 (“Yukisma”) located in the Santa Clara Valley of California suggests that the site was spatially structured according not just to age and sex, but also through a dual moiety system and/or elite status. Using an ancient DNA (aDNA) approach, we tested for correlations between the genetic relatedness of individuals, grave goods, and burial patterns. This will provide a direct examination of prehistoric mortuary practices and the emergence/maintenance of social inequality.

Monroe, J. Cameron (University of California, Santa Cruz)

State and Community in Precolumbian Dahomey

Scholars have long argued that sub-Saharan Africa in the era of the slave trade was dominated by ethnically distinct communities whose members underwent the process of cultural creolization only after being displaced to New World slave societies. Historical archaeological research across West Africa, however, is challenging this notion, revealing how the contours of West African cultural identity transformed dramatically in response to intersecting economic, political, and cultural forces unleashed by trans-Atlantic commerce. This paper examines the nature of cultural identity on the Abomey Plateau in the Republic of Bénin, the precolonial heartland of the Kingdom of Dahomey, focusing on the relationship between settlement history, political transformation, and Fon ethnic identity at Cana. Regional survey data reveals a long-term and dynamic history of settlement across...
the region, extending as far back as the 1st millennium BC. However, urban landscape planning schemes initiated by Dahomean monarchs in the Atlantic Era all but erased the local memory of this deeply rooted history. The production of urban space in Dahomey was centrally important for gerrymandering social identities vis-à-vis the emerging state, providing new insights into complex intersections between space, power, and ‘history-making’ in the West African past.

Montenegro, Alvaro, Richard Callaghan (University of Calgary) and Scott Fitzpatrick (University of Oregon)
[47] From West to East Polynesia: A Voyaging Analysis Using Two Complementary Computer Simulations
The temporal gap between the colonization of West and East Polynesia has long been a controversy in the study of Pacific Island colonization. Here we present the results of two complementary computer simulations of voyaging between the two regions with the goals of determining if environmental factors were an issue in the proposed late colonization of East Polynesia and evaluating the programs against each other. The two simulation programs are dynamically and statistically based, respectively. Both simulations consider wind and current patterns, island distribution, mortality at sea, and sailor’s navigational intent. The dynamical model, developed by the US Coast Guard, is based on fluid dynamics and deterministically computes vessel trajectory. It offers a representation of impact by environmental variability and is capable of accounting for the temporal and spatial autocorrelation of currents and winds. Speed and direction generated by the deterministic model have been validated against a large number of derelict vessel trajectories and historically documented voyages. The statistical model computes statistical probability of vessel trajectories under given physical conditions to generate a description of possible voyages which has been validated against historically documented voyages. Results highlight the importance of voyaging simulation studies for understanding human seafaring strategies and capabilities.

Montgomery, Barbara, Daniela Triadan (University of Arizona) and Nieves Zedeno (University of Arizona)
[64] The Incidental Journeys of Three Pottery Queens
We came from different parts of the world---Montgomery from the East Coast, Triadan from Germany, and Zedeno from Ecuador---and met at the Grasshopper Field School in the late 1980s, where we worked as graduate research assistants until its final year in 1992. Like so many others, our experiences and work at Grasshopper started and defined our careers. We became the ceramic ladies as we all did our dissertations on ceramics from Grasshopper Pueblo or Chodistaas Pueblo. After our Ph.D.s, however, we took flight again into very different directions. Montgomery continued to work on ceramics with CRM companies in Tucson, although she expanded into Hohokam buff wares. Triadan went across the border to Chihuahua and back to her Mesoamerican roots and has been running projects at large Maya sites in Guatemala. And Zedeno has taken her interests in human mobility and migration to the Midwest and most recently to prehistoric and historic Plains buffalo hunters in Montana. The years at Grasshopper were formative, inspiring and fun, and laid the solid foundation for our careers in archaeology. Our journeys demonstrate the wide-ranging impact the University of Arizona Field School had on the discipline.

Montgomery, Christine (University of Wyoming), David Diggs (University of Northern Colorado) and Robert Brunswig (University of Northern Colorado)
[75] Reconstructing a Prehistoric Ute Sacred Landscape in the Southern Rocky Mountains
Reconstructing a prehistoric Ute sacred landscape in the southern Rocky Mountains of Colorado necessitates the integration of additional fields of study within the archaeological work. First, Ute consultations and ethnohistoric research strengthen the interpretation of sacred sites and provide information about how to protect these places. Next, we utilize Geographic Information Systems (GIS) to analyze the connection between sacred places through their viewsheds and orientations and to examine the influence of geographical variables in predicting locations of other sacred sites. The synthesis of this information begins to reveal how and why the Ute inscribed their spirituality onto the landscape.

Montiel, Rafael (Laboratorio Nacional de Genomica para la Biodiversidad, Cinvestav-IPN), Brenda A. Alvarez-Sandoval (Langebio, Cinvestav-IPN) and Linda R. Manzanilla (Instituto de Investigaciones Antropológicas, UNAM)
Multiethnicity in Teopancazco is represented by foreign elements associated with the coast of the Gulf of Mexico, Puebla, Tlaxcala and Hidalgo, as well as by the variability observed in funerary rituals. Studies on both stable and strontium isotopes suggest the presence of three population groups, the locals, immigrants from nearby areas, and immigrants from more distant areas. However, to date no systematic genetic analysis has been conducted to address this issue. As a first approach to understand the genetic variability in Teopancazco, we conducted an ancient DNA (aDNA) analysis using a set of samples from different temporalities, activity areas, ages, and sexes. Estimates of both genetic and nucleotide diversity indicate high levels of genetic variability in Teopancazco, which is consistent with the multiethnicity phenomenon at the neighborhood center. Likewise, sex determination shows a differential ratio in the population analyzed, and the comparison of variability levels between men and women indicate a patrilocal residence pattern.

Montiel Ángeles, Alma [145] see Zapien Lopez, Victor
Montón, Sandra [95] see Cruz Berrocal, Maria
Monton-Subias, Sandra (ICREA Research Professor.Universitat Pompeu Fabra.)
[95] Chair
Mooder, Karen [77] see Moussa, Nour
Mooney, Susan Moorhead and P Gregory Hare (Government of Yukon)
[92] The Arctic Trails Have Their Secret Tales…
In November 2010, several deeply buried wooden coffins with associated human skeletal remains were accidently uncovered by construction workers in Dawson City, Yukon, Canada. The graves were located within the area of historic Fort Herchmer, the North West Mounted Police post for the region, and provided evidence of an unmarked burial ground for individuals executed during the Klondike Gold Rush at the end of the 19th Century. The recovery and osteological analyses of these well-preserved remains offers insight into the quality of life during the Klondike Gold Rush, as well as the administration of justice in the Canadian frontier. This paper reviews salvage excavation activities and explores the identities of some of the first individuals to be executed in the Yukon Territory.

Moore, Jacy (University of Guam), Jasminda Ceron (University of Philippines, Diliman) and Stephen Acabado (University of Guam)
[7] Agricultural Development and Settlement Patterns in Early Ifugao Societies
Intensive agricultural systems commonly concentrate on a
particular crop to support the food requirements of a population. This appears to be the case among the Ifugao of the northern Philippines, especially, with the existence of labor-intensive and architecturally magnificent, rice terraces. Recent studies, however, indicate that the Ifugao agricultural system is composed of both intensive and non-intensive forms of agricultural production (wet-rice cultivation, upland swiddening, and agroforestry), a system that is associated with agroecological and complementary complexes. Excavations in the Old Kiyyang Village (an early Ifugao settlement, c. 1000 YBP) provided important paleoenvironmental information on the development of such system, specifically, changes in the crops cultivated in the region. As such, this presentation provides material evidence on landscape changes and the role of agricultural and complementary systems in the development of Ifugao rice terracing tradition.

Moore, Jerry (CSU Dominguez Hills) and Carolina Vilchez (Proyecto Qhapag Nan, Ministerio de Cultura, Peru) [59]

Techné and the Thorny Oyster: Spondylus Craft Production and the Inca Empire at Taller Conchales, Huaca Cabeza de Vaca, Tumbes, Perù

The creation of objects from the lustrous shells of the thorny oyster (Spondylus princeps) and the large rock oyster (Spondylus califer) was an important focus of embodied craft for over five millennia in Andean South America. S. princeps and S. calcifer are warm water species whose southernmost natural limits are coastal Ecuador and far northern Peru. Spondylus was highly-prized over a broad area of Andean South America, exchanged as whole valves, worked objects, and beads throughout much of prehistory and over thousands of kilometers. The transformation of Spondylus shells into beads, pendants, and other objects underwent fundamental shifts in theme and focus in late prehistory, with major reorganizations occurring at circa AD 1470 as the Inca Empire expanded into northern South America. Excavations in 2011 at the site of Taller Conchales—a sector of the Inca provincial center Huaca Cabeza de Vaca in Tumbes, Peru—resulted in detailed insights into Spondylus craft production. The only known Spondylus workshop directly associated with the Inca Empire, data from Taller Conchales document the decisions and assessments by craft workers as they transformed shells into highly desired objects, providing a unique perspective into the techné of craft production in the Inca Empire.

Moore, Daniel (SIU Carbondale) [117]

Earthen Architecture at Poggio Civitate, Italy

Over 400 fragments of daub with timber impressions and mudbrick were recovered from the destruction level of the protohistoric Etruscan building complex at Poggio Civitate, Italy. This paper will describe the system developed to classify the daub and mudbrick morphologically and the archaeometric and petrographic tests performed on samples retained for further study. The morphology and timber impressions left on the daub revealed that wattle-and-daub and mudbrick were used in tandem to construct the walls of the complex. Daub fragments also provided information about the construction techniques used to build the complex’s gabled roof. Petrographic analysis and archaeometric tests (including thermogravimetric analysis (TGA), X-ray fluorescence (XRF), and laser ablation inductively coupled plasma-mass spectrometry (LA-ICP-MS)) were performed on samples of the daub and mudbrick fragments, as well as ceramics recovered from the complex and the plaster facing of the earthen walls. These tests revealed that the daub, mudbrick, and ceramics reached different firing temperatures, were likely sourced from separate clay beds, and experienced different formation processes. The TGA tests on the plaster suggested that the mixture used by the Etruscans imparted some hydraulic properties that would have helped to preserve the earthen walls and protect them from rain erosion.

Moore, Summer (Bishop Museum), Gina Farley (Bishop Museum) and Ashley Robinson (Bishop Museum) [185]

Digitizing Archaeology Collections at the Bishop Museum: A Case Study from the Nu‘alolo Kai Site

In the 1950s, archaeologists from the Bishop Museum in Honolulu, Hawai‘i, began a systematic effort to better understand the chronology of Hawaiian settlement. One of the first archaeological sites investigated as part of this program was Nu‘alolo Kai, a fishing settlement on the coast of Kauai that was excavated between 1958 and 1984. Thousands of artifacts, including fishhooks, domestic objects, and perishable items, were recovered from the site. In 2010, Bishop Museum’s Anthropology Department launched the Hawaiian Archaeological Survey, an online database envisioned as a means for consolidating Hawaiian archaeological data. Currently, the database contains 12,800 entries for archaeological sites in Hawai‘i investigated by the Bishop Museum. The Museum hopes to make artifact inventories for each excavated site, as well as field notes, archaeological maps, and artifact photographs, available to the public via the Internet as part of a process destined to last many years. Under this program, Nu‘alolo Kai was chosen as the first site to have its artifact collections completely digitized. This poster presents an overview of the Nu‘alolo Kai digitization project, with the aim of using it as a test case to explore the benefits of digitizing archaeology collections in museums.

Moore, Christopher R. [243] see McNamee, Calia

Moore, Kaitlyn (University of Arizona) [264]

Negotiating the Middle Ground in a World-System: An Example from the Northern Rocky Mountain Fur Trade

The little known archaeology of the early fur trade in the northern Rocky Mountains (1796-1821) illustrates important processes of incorporation of remote colonies into a global political economy. This study focuses on two early nineteenth century trading posts in the northern Rockies—Rocky Mountain House and Kootenae House—where the North West Company engaged in trade with the Niitsitapi (Blackfoot) and Ktunaxa (Kootenai) respectively. A world-systems framework is used to explore the array of negociative processes that occurred between trading parties as expressed on the landscape. Native and European groups mutually constructed a “middle ground” of trade in an expanding world-system. Material expressions of negotiation in the early fur trade are manifest in the phenomena of the travelling trading post,” i.e. the (often rapid) movement of trading posts across the landscape, selecting the location for trading facilities in relation to tribal territory, and post architecture. My research shows that, while Native groups were at times shaped by the world-system, they also renegotiated their participation in the fur trade according to their own cultural logics through a process of active decision-making and compromise over time.

Moore-Jansen, Peer (Wichita State University) and James Simmerman (Wichita State University) [286]

Integrating Archaeological, Biological, and Archival Data in Culture Historical Interpretation of Historic Mortuary Contexts

The study of mortuary contexts in anthropology can contribute to a further understanding of human history. Materials of cultural and biological nature, and when available, archival and other historical records, can be essential to the reconstruction of the historic cemeteries and the reconstruction of the social behavior of their corresponding temporal and geographical, reference communities. This paper discusses biological, material and structural site data revered from a mid-17th to early 19th century cemetery (D-1) in Western Poland. This region has been politically and administratively unstable for centuries with consequences to
ethnic composition, economic stability, food security, and nutritional status. Although neither is evident in the skeletal record among the skeletal remains from D-1, nor verified historically, the conditions of health and general social behavior of the D-1 "reference" communities are addressed based on data obtained from historical demographic reconstruction and certain non-biological manifestations of material from the subsequent analysis of the 2008-2009 excavations of the site. Historical demographic profiles from vital records for selected reference populations using archival records preserved on microfilm are contrasted with paleodemographic profiles. The results demonstrate shortcomings in using profile reconstruction relying solely on standard osteological technique.

Moraes, Claide [15] see Neves, Eduardo

Morales, Pedro [17] see Casar, Isabel

Morales, Pedro (Pedro Morales Instituto de Geologia UNAM), Edith Cienfuegos (Instituto de Geologia, UNAM), Isabel Casar (Instituto de Fisica, UNAM), Linda R Manzanilla (Instituto de Investigaciones Antropológicas, UNAM) and Francisco Otero (Instituto de Geologia, UNAM) [17] 
Geographic Origins and Immigration of the Teopancatzco Population in the Context of the Ancient City of Teotihuacán México: Stable Oxygen Isotopic Evidence

Identification of geographic origins and migratory patterns of the individuals buried in the Teopancatzco neighborhood center of Teotihuacan were established using the isotopic composition of oxygen in the carbonates of the apatite of their teeth. Also the isotopic composition of oxygen of actual rainwater from the local site (Valley of México) was determined as well as rainwater from the geographic locations of sites located in corridors towards the Gulf Coast of Mexico, in which caravans from Teotihuacan stopped in their trip. The geographic origins of the individuals from Teopancatzco and six other compounds and structures from Teotihuacan with isotopic analysis were divided into 10 different geographical provenience zones with corresponding altitudes from sea level to 4000 mosl. Teopancatzco has immigrants coming from 8 of the 10 geographic zones and 62% of its population has values in the local range for oxygen of carbonate δ18OVPDB from -8. to -6. %o.

Morales, Reinaldo (University of Central Arkansas) [18] 
The Oldest Rock Art in the Americas?

Debate over the earliest peopling of the Americas tends to resurface periodically as new lines of evidence appear. Recently, paintings at the site of Serrote de Bastiana (Serra da Capivara National Park, Brazil) have emerged as possible evidence of South American rock art as ancient as the famous cave art of Europe, more than 30,000 BP. Very different estimates for the age of this "Serra da Capivara style" rock art have been published, some estimates in disagreement by an order of magnitude. Using multiple lines of evidence and traditional art-historical methodology, this paper reconciles those differences with significant results. The analysis of paintings from 130 local sites indicates there are many "Serra da Capivara" styles. One of these sites, Baixo da Perna I, includes the oldest securely dated rock paintings in the Americas (at the cusp of the Holocene; c. 10,000 BP). Another Serra da Capivara "style" is represented at Serrate da Bastiana (at the cusp of the Formative; c. 3700 BP, millennia later than expected for this "style"). Effective style analysis -- with reasonable expectations of "style" -- can reconcile seemingly contradictory chronometric data and better inform our understanding of culture and its fickle connection to art.

Moran, Kimberlee (Forensic Outreach)
Morello Repetto, Flavia (Instituto de la Patagonia, Universidad de Magallanes) [26] Hunter Gatherers of Cerro Benitez, Southern Patagonia: Discussing Environmental Changes and Cultural Developments over 10,000 Years

This study assesses archaeological evidence regarding hunter-gatherer activities in Cerro Benitez, southern Patagonia, project Fondecyt N°1100822. This information is evaluated in relation to the archaeological record associated with the late glacial setting of the Pleistocene versus the Holocene epoch. In particular, two specific issues are considered. First, we consider changes in hunter-gatherer and fauna interaction, including predation evidence from a 10,000 year span, as well as prey fluctuations – especially after the big herbivore extinctions during Pleistocene-Holocene transition. Second, we address the role of technological variations in lithic materials in relation to how humans adapted to fluctuating environments over time.

The results of the analysis of the anthropic component at Cueva del Medio and the few archaeological features of Cueva del Milodón are presented for the Pleistocene. This information is compared to Holocene archaeological data from: the Cerro Milodón locality (including the old and new records), Cueva del Medio (Holocene collection), Alero Pedro Cárdenas, Alero del Diablo, Dos Herraduras and Cueva Ciro.

Chair

Morgan, Christopher [28] see Barton, Loukas

Morgan, Christopher (University of Nevada, Reno), Loukas Barton (University of Pittsburgh), Robert Bettinger (University of California, Davis), Mingie Yi (Institute of Vertebrate Paleontology and Paleoanth) and Dongju Zhang (Lanzhou University) [222] Behavioral Evidence for the Arrival (or Inception) of Modern Human Behaviors in Northwestern China During the Late Pleistocene

Around 40 kya in northwestern China, multiple lines of evidence point towards significant behavioral changes that temporally correlate with other evidence suggesting the arrival of modern Homo sapiens in East Asia. On China’s Western Loess Plateau, a longstanding Paleolithic core-flake technology becomes geared more towards the deliberate manufacture of usable flakes and settlement patterns shift to encompass more intensive use of a greater array of environments. Along the middle Yellow River, re-dating of Shuidongguo Locality 1 suggests the invention or arrival of a flat-faced core and blade technology ca. 41 kcal BP. Combined, these data suggest significant behavioral changes that are arguably consistent with the hypothesis that modern humans arrived in East Asia ca. 40 kya with a novel suite of behaviors that contrasted sharply with preceding indigenous ones. But evidence for blade technologies persisting from then until approximately 24 kcal BP, when true microblade technologies appear, is scant. Further, core-flake technology persists throughout the region through the Pleistocene, and broad spectrum settlement patterns revert to narrow spectrum ones during the Last Glacial Maximum, suggesting an alternative hypothesis that modern humans did not become well established in the region until the Last Glacial Maximum.

Morgan-Smith, Maggie (University of North Carolina at Chapel Hill) [65] Placing Abandonment: Investigating the Process of Detachment from Rancho Kiuc, Yucatán, México

Abandonment is both an experience and process of detaching oneself physically and emotionally from a landscape that is profoundly shaped by the abandoner’s sense of place. To understand this complexity, we must move past conceptualizing place as a “target of attachment” (Rodman 1992:204), by exploring the processes by which people detach. I suggest that the use of oral history, in concert with traditional household archaeological methods, allows us to more meaningfully explore the nexus of experiential and processual aspects of leaving place. In this paper, I explore the human experience of abandonment using examples from ongoing research at Rancho Kiuc, an 18th-20th century Yucatec Mayan landed estate, abandoned by its laboring population. Despite citing oppressive working conditions and marked inequality between themselves and the landowning family, the descendant population maintains a connection with their old community that calls assumptions about the finality of abandonment into question. Meaning attached to Rancho Kiuc in the present is colored by the memory and physical remains of past inequality, and by the abandoners’ sense of place. These complex relationships impacted decisions to leave the community, produced the material manifestations of that detachment, and continue to shape the descendants’ interactions with the landscape today.

Moriarty, James [135] see McAllister, Martin

Moriarty IV, James [135] see Grifel, David

Morin, Eugene (Trent University) and Ready Elspeth (Stanford University) [96] Why Transporting Bones? An Analysis of Anatomical Profiles from Pleistocene European Archaeofaunas

Most studies of Paleolithic faunal assemblages assume that body parts of ungulates were transported largely as a function of associated whole food value. Our paper tests this assumption in Europe by comparing 167 human-accumulated cervid, equid, large bovine, and caprine assemblages with several utility models focusing on whole food, dry meat, marrow and bone grease value. The results we obtained, which consider a wide spectrum of rockshelter/cave and open air assemblages dating from the Lower Paleolithic through the early Holocene, appear to refute the commonly-held view that skeletal parts were transported to sites mostly as a function of associated whole food utility. Instead, we found much stronger correlations in our comparisons with models focusing on unsaturated marrow. These results have important behavioral implications because they suggest that fat acquisition was a driving force underlying animal food procurement during the Pleistocene in Europe.

Morin, Jesse (University of British Columbia) [137] Near-Infrared (NIR) Spectrometry of Stone Celts Reveals Interaction Spheres in Pre-Contact British Columbia, Canada

Aside from one large scale obsidian sourcing study, there has been very limited research into broad patterns of trade and exchange in pre-contact British Columbia, Canada. This paper addresses that shortcoming by summarizing the results of mineralogical study of 1374 stone celts from more than 200 archaeological sites across British Columbia. These artifacts were an integral part of the woodworking toolkits of aboriginal peoples in this region from about 3500 BP to AD 1790. The mineralogy of these artifacts was determined using a portable near-infrared (NIR) spectrometer, and the resulting data mapped using GIS. The results of this study indicate that celts were exchanged primarily within six discrete regions, each approximately 200 km in diameter. These six regions each display a unique pattern of reliance on a particular raw material or suite of raw materials for making celts. Only in one case – on the Canadian Plateau – do celts appear to have been used in a primarily social role as prestige goods, rather than as functional tools. These results challenge the common assumption that cultures on the Northwest Coast had a greater emphasis on ranking and disparities of wealth compared to the adjacent Canadian Plateau.
Morisaki, Kazuki (Nara National Research Institute for Cultural Properties), Masami Izuho (Tokyo Metropolitan University) and Hiroyuki Sato (The University of Tokyo) [28]


This presentation discusses human adaptive reactions to environmental change of the Pleistocene-Holocene transition (15-10 Ka BP) in the Japanese Archipelago, focusing on correlations between behavioral strategies and environmental change. Past chronological studies established by Jomon pottery typology and radiometric data help us to recognize regional differences of lithic technology during this transition. Since those studies, however, have focused on typological changes of lithics and pottery, it is still unclear how humans reorganized their behavioral strategy to adapt to the environmental change. Accordingly, this research aims to examine spatio-temporal change of human behavioral strategy reflected in lithic technological organization, and discusses history of human environmental adaptation during this transition by integrating the above behavioral study into recent studies on climatic, faunal, and floral changes.

Main topics are as follows. Lithic technology and behavioral strategy in Hokkaido was always different from those of Honshu and Kyushu throughout the terminal Pleistocene because their ecological settings were different. Lithic technology and behavioral strategy in Honshu and Kyushu rapidly changed at the warm period of the Late Glacial, while the course and pace of those changes varied. Lithic technology and behavioral strategy characteristics of the Jomon period did not appear until the onset of the Holocene.

Moritz, Ryan P. [35] see Whistler, Emily

Morley, Mike [76] see Stewart, Brian

Morley, Mike (Oxford Brookes University)

Later Pleistocene Paleoenvironments of Lesotho: River System Responses to Climatic Change and Implications for the Viability of Valley Floor Environments as Cultural Landscapes

Our knowledge of Later Pleistocene palaeoenvironmental change in southern Africa is scant. There is a striking lack of terrestrial sequences from which to derive high-resolution palaeoclimatic data and model the response of geomorphological systems to climatic trends. This is especially true of the Kingdom of Lesotho, which is yielding a particularly rich and diverse archaeological resource set within a uniquely high-relief, mountainous landscape. Current geoarchaeological research in this region is focusing on the generation of palaeoenvironmental data from the analysis of alluvial sediments, valley-marginal colluvial-palaesoil sequences and fluvial geomorphological features. This research is beginning to elucidate river system and landscape response to climatic shifts, thus providing environmental and climatic context to the rich archaeological narrative emerging from this region. From an archaeological perspective, this work aims to address an important question that is often overlooked: how can reconstructing river system dynamics inform us about changes in valley floor environments, and what are the implications for Later Pleistocene hominin populations traversing and inhabiting these landscapes?

Morris, Matt [78] see Ringle, William

Morris, Annelise (University of California, Berkeley) [99]

Excavating Our History: Public Archaeology in Rural Southern Illinois

In the 18th and 19th century, many free people of color found their wellbeing increasingly threatened in the southern U.S., and as a result began to make their way to the northern frontier. They came to Indiana territory in significant numbers; founding small towns, clearing farms, and building schools and churches. Though often not highly visible in contemporary historical accounts, generations later many of these places still exist. I was born into one such area, and my research focuses on the archaeological and documentary investigation of its history. In July of 2012 I, along with a team of experienced archaeologists, students, and community volunteers conducted excavations at a farmstead built in the early 19th century and occupied through the 1920’s by my African-American ancestors. Some key research goals of this project are to make the area’s pioneer history accessible to the larger community, and to enter the deep roots of the African-American community into the local historical consciousness. This paper will discuss the methodological implications of these goals, the advantages and pitfalls of occupying the positionality of archaeologist, stakeholder, and descendant, and finally the benefits and logistical issues associated with opening a field site to community volunteers.

Morris, Ellen (Barnard College) [134]

Oases as Desert Islands, as Devil’s Islands, and as Isles of the Blessed

If Aegean islands are defined as much by connectivity as by insularity, as Bernard Knapp suggests, the oases of Dakhleh and Kharga in Egypt may be argued to better conform to the stereotype of islandness than many actual islands. This paper will consider a number of parallels between Egypt’s western oases and islands, comparisons engendered primarily by remoteness and boundedness. The peril of the journey out to Egypt’s oases is archaeologically attested by camel bones (desert shipwrecks) and by makeshift shrines to those who perished along the way. This isolation resulted in many ways for many governments—the ancient Egyptian, the Roman, and the English, to name a few—employing the oases as places of banishment. Conversely, due to their same remoteness, the oases served at other times as safehavens for enemies of the state and bases for predatory raids. Like the islands encountered by Odysseus, Egypt’s oases were often imagined to be inhabited by monstrous creatures, and gods and creeds banned elsewhere in Egypt thrived in the oases. Further, the oases enjoyed a hothouse environment in which, as Robert Carneiro’s circumscription model might predict, march lords assumed powers that would never have been permitted in the Nile Valley.

Morris, Zoe (University of Western Ontario), Christine White (University of Western Ontario), Lisa Hodgetts (University of Western Ontario) and Fred Longstaffe (University of Western Ontario) [263]

Stable Isotopic Comparison of Maize-Consumption by Wild Turkeys from Late Woodland Ontario Iroquoian vs. Western Basin Sites

We compare stable isotopic evidence for purposeful feeding of wild turkeys by two Late Woodland groups: the agricultural Ontario Iroquoians and the semi-mobile, horticultural Western Basin peoples. According to the ecological literature, wild turkeys are unable to eat maize from stalks, but will consume it opportunistically from ground scatter. Since maize has a carbon isotopic composition distinctive from most other plants in the region, its consumption by wild turkeys can be tracked using such data for bone-collagen and bone-carbonate. Carbon and nitrogen isotopic results for turkey bone collagen also offer the opportunity to compare the plant-heavy adult diet to insect-heavy juvenile diet as a possible indicator of seasonal differences in maize field-access. Our results suggest that during the Late Woodland period, maize consumption increased among some adult and juvenile wild turkeys from Ontario Iroquoian sites. When combined with archaeological evidence of turkey burials and seasonal killing, the data support the purposeful feeding of wild turkeys. In contrast, no increase in maize consumption was noted for wild turkeys recovered from contemporary Western Basin sites despite the
recent record of heavy maize consumption determined for Western Basin humans.

Morrison, Alex (University of Hawaii, Manoa) and Melinda Allen (University of Auckland)
[27] Did Climate Change Drive Polynesian Migrations and Island Colonization? Modeling Climate Effects on Marine Ecosystems and Human Resources

While recent archaeological studies have led to revisions in the chronologies of numerous island archipelagos, and generated fruitful methodological debates, little research has focused on the underlying causes of population migrations. We address the question of how regional scale climate change, and its effects on marine ecosystems in particular, might have contributed to the processes of migration and colonization.

Using life history data, contemporary marine survey reports, and archaeological information we begin by modeling the spatial and temporal distribution of select marine organisms. We then develop an Agent Based Model to examine how specific climate parameters might have affected the productivity and sustainability of a model marine ecosystem, using the “almost-atoll” of Aitutaki, Cook Islands as a case study. Known or hypothesized climate conditions in the central Polynesia region during the last millennium are modeled, including variability in ENSO, sea surface temperatures and the magnitude and periodicity of tropical storms. The effects of these parameters on marine organisms, both individually and ecologically, are investigated. Our findings are relevant to a variety of island settings, informing on the dynamics of climate-marine fisheries-cultural interactions and identifying “tipping points” which might have stimulated regional scale migrations.

Morrison, Alex [27] see Rieth, Timothy

Morrison, Kathleen (University of Chicago)
[146] The Hidden Foundations of European Colonial Expansion in South Asia: Swidden, Foraging, and Their Misrecognition

European colonial expansion into South Asia was linked to trade and motivated, in part, by profit. Many goods of the east relied on the labor of marginalized and historically ‘invisible’ groups, including shifting cultivators and hunter-gatherers. Tropical forest commodities such as pepper, indigenous to tropical southwest coastal India, were both collected wild in upland forests and grown in intercropped swidden plots; thus, the ‘king of the spices’ was produced by peoples not directly controlled by or known to most traders. Early Modern expansion of pepper exports led to specialization by many ‘commercial foragers’ as well as new opportunities for small farmers. Later suppression of swidden reduced subsistence diversity and flexibility. Both foraging and swidden were represented as ancient, primitive practices by European observers and officials; prejudice continued in anthropological scholarship. In this paper, I highlight the role of long-fallow agricultural systems in the spice trade, noting the close connections between foraging, farming, and trading. While there is growing recognition that foraging was sometimes adopted as a specialist profession, swidden farming continues to be seen as an archaic ‘remnant’ of the deep past, a notion at odds with the historical record of economic flexibility and diversity in this region.

Morrow, Juliet (Arkansas Archeological Survey), Patti Wright (University of Missouri-St. Louis), Robert Taylor (Arkansas Archeological Society) and Robert Scott (Arkansas Archeological Survey)
[54] Mississippian Occupations of the Western Lowlands of Arkansas, circa A.D. 800-1300

We present our interpretations of ceramic and lithic technologies and plant and animal use among different societies who lived in year round villages in the Western Lowlands of northeastern Arkansas. Three villages are on the Cache River: Bruce Catt (3CY91), Buffalo Head Slough (3GE6), and Kreb’s Place (3CG453), and one village is at the headwaters of Village Creek: the Jarrett site (3RA95). Multiple ethnic groups living in the Western Lowlands during the early Mississippian period (A.D. 800-900) appear to have been influenced by expansion of people from southeast Missouri based on the presence of Varney (red filmed) pottery. The distribution of this early, red-filmed, shell-tempered pottery occurs primarily throughout the Mississippi River corridor, and the Western Lowlands lie at the western fringe of the Varney “heartland.” A site-unit intrusion from Cahokia which occurred around A.D. 1100, the Cherry Valley phase (Perino 1959, Morse and Morse 1983), seems to have little influenced societies in the Western Lowlands; however, a slightly later site-unit intrusion from southeast Missouri related to the Powers Phase (Price 1978) is evident at the Jarrett site (3RA95) around A.D. 1250-1300. Much of the Western Lowlands is suddenly abandoned around A.D. 1350. Possibilities for abandonment are discussed.

Morton, Shawn (University of Calgary)
[109] Polity Development during the Late/Terminal Classic as Attested in Subterranean Site Contexts of the Caves Branch and Roaring Creek Valleys of Belize, C.A.

Over the past five years, archaeology’s understanding of the Caves Branch and Roaring Creek Valleys of Central Belize has changed drastically. The view of political organization has shifted from that of a peripheral, if significant, area focused around a number of small to medium-sized nucleated centers, to a recognition of the area containing one of central Belize’s largest and most complex prehistoric polities fluorescing during the unsettled early years of the Classic Maya “Collapse” (ca. 750 CE). Our understanding of these events, and the processes driving them, are informed in no small part by findings in the caves, sinkholes, and rockshelters of the region. This paper presents the contribution of my ongoing doctoral research to the broader exploration of archaeological resources (both surface and subterranean) of the region.

Moses, Sharon (Coastal Carolina University)
[127] Slavery, Syncretized Rituals, and Repurposed Objects: Native American and African Slaves in South Carolina Lowcountry

Africans imported to South Carolina and Native American captives taken from within the region were sold as slaves during the Colonial settlement period in the South Carolina Lowcountry during the 17th and early 18th centuries. Evidence suggests these slave populations repurposed European materials to suit their own cultural identities in defiance of their slavehood, and shared sacred concepts, creating syncretized practices and objects. This paper will discuss excavations at the Hume Plantation on Cat Island, South Carolina and evidence of syncretization in ritual deposits and repurposed material culture.
Moss, Madonna (University of Oregon)

Obsidian in Southeast Alaska and British Columbia: Travel, Trade, and Exchange, or Geochemical Overlap?

Obsidian artifacts from archaeological sites in the Alexander Archipelago of southeast Alaska have been used as evidence for exchange systems across the Northern Northwest Coast dating to >7000 BP. Obsidian artifacts have been assigned to sources on Suemez Island in the outer archipelago, or to sources on Mount Edziza in interior British Columbia, based on trace element geochemistry. The spatial distribution of different obsidians has important implications for understanding the early occupants of the Northwest Coast, their maritime mobility and social relationships, both along the coast and in the interior.

Differences in the geochemical signatures of obsidian artifacts were inferred to indicate early Holocene travel or trade/exchange across hundreds of kilometers. The logistics of travel to source areas and the colors of obsidian in artifacts and sources are also assessed. We review the geochemical data to evaluate whether Suemez and Edziza sources have been reliably distinguished. Previous analyses and new data show that obsidian from Aguada Cove (Suemez), and from Mount Edziza are indistinguishable, and the obsidian from Cape Felix (Suemez), has a geochemical signature different from Aguada and Edziza. Obsidian artifacts previously assigned to Edziza sources may alternatively have been sourced at Aguada Cove. Previous archaeological interpretations require revision.

Discussant

Most, Rachel [257] see Lerner, Sherreene

Motsinger, Thomas [123] see Thompson, Kevin

Mountain, Rebecca (University of Arizona, Arizona State Museum)

Assessing the Relationship between Antemortem Tooth Loss and Osteoporosis among the Early Farmers of the Sonoran Desert

Previous analyses of skeletal samples from the Early Agricultural period (c. 2100 B.C.-A.D. 50) in the southwest United States and northwest Mexico have documented significant differences in the rate of antemortem tooth loss (AMTL) between males and females. One possible cause of the increased AMTL in females is osteoporosis and the associated loss of mineral density in the alveolar bone. A number of archaeological studies have successfully used dual-energy X-ray absorptiometry (DEXA) to measure bone mineral density in dry bone. This method, however, has thus far only been applied to the postcranial skeleton. Approximately 20 skeletons from several Early Agricultural period sites in Southern Arizona were examined in this study. The goals of the study were twofold. The first was to determine the efficacy of DEXA in measuring mandibular bone density. The second was to assess the relationships between postcranial bone density, alveolar bone density, and antemortem tooth loss. The results of this study not only elucidate different contributing factors to tooth loss in Early Agricultural period populations, but also support a new method for evaluating a potential cause of AMTL that is widely applicable in archaeological specimens.

MOUNTJOY, JOEESH B. [38] see Rhodes, Jill

Moussa, Nour, Karen Mooter and Fiona Bamforth

A Comparison between Two Late Neolithic-Early Bronze Age Cemeteries List’Ida and Kurma XI through The Analysis of mtDNA

Lake Baikal area was home to two temporally distinct populations, the Kitoi (Early Neolithic, EN) and the Serovo-Glazkovo (Late Neolithic-Early Bronze Age, LN-EBA). The project seeks to reconstruct the lifestyle of the hunter-gatherers inhabited the area.

Several cemeteries have been excavated. Maternally inherited mtDNA from Kurma XI (LN-EBA) samples, not previously analyzed, was compared to another previously analyzed LN-EBA cemetery (Ust’Ida). DNA analysis from Kurma XI burials will strengthen our analysis of the genetics of LN-EBA populations, as Ust’Ida is the only LN-EBA cemetery examined to date. 26 KurmaXI teeth samples were cut using a sterile saw and their roots were soaked in bleach, rinsed with HPLC water and UV irradiated. After crushing the whole root, DNA was extracted. mtDNA was amplified and sequenced. Results obtained previously from mtDNA analysis of 40 Ust’Ida bone samples, revealed that the predominant haplogroups are A, C, D, F and G2a. Kurma XI samples have also haplogroups F and D. Haplogroup Z is a novel haplogroup in the Kurma XI population of the region.

The presence of haplogroup Z in Kurma XI and not in Ust’Ida populations might indicate different female migration patterns around the area of Lake Baikal during LN-EBA.

Moy, Rachel (UCLA)

Travelling the Fayum: Agricultural Landscape and Economy in the Greco-Roman Period

From the time of the Middle Kingdom, and again in the early Ptolemaic and Roman Periods, the Fayum was a homogenic agricultural landscape, characterized by regular patterns of canals, irrigation ditches, plotted fields, and roads designed for agricultural exploitation and transport. This paper examines how movement of people, goods, and agricultural produce functioned and changed in the Greco-Roman period. A study of Greco-Roman settlement, field, and road patterns is compared to a wealth of papyrological material that has come out of the Fayum. Many of these papyri contain correspondence between periphery and centers, discussing the management and economics of the region through contracts and letters. Rather than solely focusing on the content of these documents, this paper tracks their movements. Through examination of satellite imagery, least cost path analysis, and selective ground survey, many ancient routes can be reconstructed. These reconstructed maps allow closer examination of the existing agricultural trade network and what types of transportation were most likely exploited. It takes an in-depth look at ground versus water transport and explains how crops moved from farm to market.

Moyer, Teresa (National Park Service)

Youth, Community Partnerships, and the Urban Archeology Corps

The National Park Service coordinated the Urban Archeology Corps with Groundwork Anacostia River DC to experiment with archeology as a way for youth to explore the urban environment and the park units therein. Learn about the program, the lessons learned, and view the participants’ messages to the NPS about its management of the park and communication with the community.

Moyes, Holley [36] see Robinson, Mark

Moyes, PHD, Holley [109] see Nation, Humberto

Mraz, Veronica (University of Tulsa)

An Examination of the Plains Woodland and Plains Village Periods in North Central/Eastern Oklahoma through Lithic Assemblage Comparisons

This report will involve a study of late prehistoric (Plains Woodland and Plains Village) sites within north central/eastern Oklahoma within the eastern Arkansas and west Verdigris river basins. This study will compare the cultural historic framework of this region, in an effort to understand the differences in material cultural signatures and land use strategies in a poorly understood area.
The data sets for this research are derived from primary studies as well as limited site report distributions largely from archaeological projects funded from the Army Corps of Engineers Tulsa division.

Mt. Joy, Kristen (Texas Army National Guard), Heidi Fuller (Texas Army National Guard), Jimmy Arterberry (Comanche Nation) and Holly Houghten (Mescalero Apache Tribe) [281] Survey without Shovels: Rethinking Cultural Inventories with Tribal Nations

Archaeological inventories are standard fare for agencies such as the Texas Military Forces. However, these are limited in scope to identifying individual artifacts and features and do not accurately capture the entire cultural landscape. At the request of tribal partners, Texas Military Forces initiated an inventory to identify traditional cultural properties on their lands. This paper looks at the progress of the first project at Camp Bowie, Brownwood, Texas. It then discusses the challenges faced and lessons learned in working outside the standard archaeological methods and techniques to build a better understanding of the history of the lands managed by the Texas Military Forces.

Mulder, Karen (Archeology Program) [30] Henry T Wright: His Student Legacy, Service to the Field, and Contributions Beyond Academia

Henry Wright’s important contributions to the understanding of complex social organization have influenced archeological theory for 45+ years. His research spans the world, from investigations of early state formation in the Near East, Madagascar, and China to Paleoindian settlement and Archaic adaptations in North America. Equally important are the contributions that Wright has made through mentoring students, promoting public and amateur archeology, and through professional service. This paper examines Wright’s continuing influence on archeology through his many students and through his work to promote archeological research through numerous venues.

Mulhern, Dawn (Fort Lewis College) and Mona Charles (Fort Lewis College) [16] Trauma Patterns in a Basketmaker II Population from Durango, Colorado

The Eastern Basketmakers are known primarily from three sites in Durango, Colorado. Recent analysis and compilation of skeletal data from two of these sites has resulted in the most comprehensive look at health patterns in this population to date. The purpose of this study is to assess cranial and postcranial trauma patterns in the Eastern Basketmaker population (750 B.C - A.D. 500) from Durango. Data collected for the human skeletal remains from the Basketmaker II sites of Darkmold and the Falls Creek Rock Shelters were evaluated for patterns of trauma by age and sex. Comparisons by sex show a higher frequency of cranial trauma in females and higher frequency of postcranial trauma in males. Subadults did not show any evidence of trauma. Results were also compared to a Pueblo I sample from the Durango area (A.D. 700-900); overall frequencies of cranial and postcranial trauma are consistent over time, although incidents of perimortem trauma are more frequent in the later time period and also affect subadults, implying changes in the types of interactions in prehistoric Durango area populations over time. Regional comparisons will also be discussed.

Mulhern, Dawn [16] see Charles, Mona

Müller, Noémi (NCSR Demokritos), Maria Dikomitou-Eliadou (University of Cyprus) and Vassilis Kilikoglou (NCSR Demokritos) [179] Calcite Tempering and Thermal Properties Of Ceramic Cooking Ware: The Case of Prehistoric Marki Alonia in Cyprus

The notion of the beneficial effect of calcite temper on the thermal shock resistance of ancient cooking ware appears to be embraced by many archaeologists and is frequently used to explain the particular manufacturing practice. The effect of calcite temper on a ceramic vessel’s affordances has been widely discussed, explanations are, however, almost exclusively based on theoretical considerations, and contradicting statements are reached using different material models. When a recent study on utilitarian pottery from prehistoric Marki Alonia, Cyprus, revealed the synchronous use of imported cooking ware containing calcitic temper and locally produced vessels, made with a volcanic fabric, it was felt necessary to embark on an experimental investigation to overcome ambiguities inherent in the theoretical models, commonly employed to assess the thermal properties of such ceramics. While not per se explaining technological variation, an understanding of the influence of manufacturing parameters on material properties can provide the baseline when considering technological choices in utilitarian ceramics. Results obtained on experimental briquettes will be presented, outlining the influence of calcitic temper on thermal shock resistance and thermal conductivity. Beyond providing a baseline for considerations regarding consumption practices in prehistoric Cyprus, the results are applicable to calcite-tempered ancient cooking ware more generally.

Müller, Noémi [288] see Day, Peter

Mulrooney, Mara (University of Auckland) and Simon Bickler (Bickler Consultants Ltd.) [27] Radiocarbon Chronologies at the Margins of East Polynesia

Radiocarbon dates are fundamental to archaeological interpretations of East Polynesian prehistory. Despite a growing corpus of radiocarbon dates, debate persists regarding the interpretation of these data. We assess the latest radiocarbon dates from Aotearoa/New Zealand, the Hawaiian Islands and Rapa Nui (Easter Island) to examine how archaeological sampling and analyses are used to construct models of earliest settlement, palaeodemography, and cultural dynamics at the fringes of East Polynesia. Academic research and cultural resource management have rapidly increased the number of dates available for these island sequences in recent years. We explore the spatial distribution of dates in these contexts and compare models of Polynesian settlement on both the large and small islands at the apexes of the Polynesian Triangle.

Munns, Anna (University of Minnesota) [108] Ychsma Shells: A Malacological Analysis at Panquilma

The Inka influence on the Ychsma inhabitants of Panquilma can be observed by noting variations in the malacological remains, and this presentation will convey the significance of the malacological data recovered from the site during the 2012 excavation season. The analysis of the malacological remains, conducted by speciation, determining minimum number of individuals, and weighing, demonstrates fundamental differences between the site’s religious and domestic sectors as well as disparity between the Ychsma A and Ychsma B phases of occupation. The contextual locations of the recovered malacological materials, such as funerary contexts and middens, and the presence of lomas snails and non-local species such as Spondylus further explain the social and economic interactions which occurred during the site’s occupation. When compared to other sites along the Peruvian coast, Panquilma demonstrates a unique assemblage of recovered shell species, which emphasizes its importance in pre-colonial studies of Peruvian archaeology.

Munoz, Cynthia [41] see Mauldin, Raymond
Munoz, Cynthia (University of Texas at San Antonio) and Raymond Mauldin (University of Texas at San Antonio) [281] Deep Sands, Dense Sites, and Cool Water: Exploring Prehistoric Site Distributions on a Texas Army National Guard Facility using GIS

Camp Swift, an 11,500-acre training facility, is one of eight installations maintained by the Army National Guard in Texas that contain archaeological sites. Over the past four decades, Camp Swift has been surveyed by various investigators resulting in the documentation of 306 sites (214 prehistoric and 136 historic components) that date from the Paleoindian period to the early 1940s. Using ArcGIS, we overlay this archaeological site data on georeferenced soil and hydrological maps to study the distribution and relationship of sites to these landscape features to determine if site distribution was a function of behavior or of geomorphic processes of exposure. We document that, contrary to our initial expectations, prehistoric site components are underrepresented on shallow soils and overrepresented on deep soils. This pattern may be a function of past decisions regarding access to water, as areas adjacent to streams tend to have deep soils. However, when we control for distance to water, the geomorphic pattern is not significantly affected. Other factors, including modern decisions to focus survey on high probability areas, may result in an underrepresentation of site discoveries in shallow soil areas.

Munro, Natalie [201] see Olszewski, Deborah

Munro, Kimberly (Louisiana State University) and David Chicoine (Louisiana State University) [236] Grinding Stone and Plant Processing at Caylán: A GIS Study

The site of Caylán, which measures 80 hectares in its monumental core, is a Late and Final Formative (800-1 BCE) center located 15km inland in the lower Nepeña Valley, coastal Ancash. Several hundred grinding stones were mapped using GPS in and around the site of Caylán during the summer of 2012. This poster presents the results of a spatial analysis conducted (using the Arc10 suite) on the three different categories of grinding stones, including; Manos, Batanes, and Chungsos. Stone material, form, size, and location as well as spatial clustering of the stones are analyzed to determine plant processing, ritual use, and domestic areas of the site. We pay particular attention to the architectural and spatial contexts associated with the use and discard of the stone tools, and their meanings to understand urban production and consumption during the Early Horizon.

Munro-Stasiuk, Mandy [125] see Manahan, T.

Munschauer, Lyman [186] see Bailey, David

Munson, Jessica (Simon Fraser University) [171] Social and Material Transformations in an Early Maya Community: Changing Views from Caobal, Petén, Guatemala

Settlement expansion and major social transformations during the Preclassic period led to significant changes in the organization of lowland Maya society. This pattern is exemplified by changes in the form of large terraced platforms as well as by changes in ritual practices associated with residential and ceremonial structures. Against this backdrop, this paper presents recent data from the site of Caobal, a minor center with ceremonial architecture located near the site of Ceibal in the Pasión region. Multivariate clustering techniques were applied to data from multi-layered stratified units to infer synchronous episodes of construction throughout Caobal’s 1600-year occupation history. This detailed reconstruction demonstrates continuities in settlement layout and significant changes in the architectural forms and materials used to construct monumental buildings. The transformation of Caobal from a rural hamlet to minor ceremonial center is contextualized in terms of broader sociopolitical change during the Preclassic period. Minor temples like those at Caobal are interpreted as local nodes of community and religious interaction for households outside the core of major Maya centers.

Murakami, Tatsuya (University of South Florida) [63] State Administration and Political Dynamics at Teotihuacan: Early Classic Interaction Viewed from the Core

While the presence of Teotihuacan-related material culture outside of the city has been taken as evidence for indirect administration, elite interaction or alliances, it is often difficult to discriminate these different models of interaction since they may result in similar material patterns. This paper examines changing political organization of the Teotihuacan state and explores different facets and scales of its interaction with other regions based on distributional analyses of non-local resources, such as lime, andesitic cut stone blocks, lapidary materials (e.g., greenstone), and other types of materials. Specifically, this study addresses how different social segments, including rulers, bureaucrats (both upper and lower echelons), intermediate elites, and commoners, sought to enhance their power and/or consolidate their social identity through external relations. The results indicate highly complex nature and multiple levels of interaction with other regions along with diachronic changes in the distribution of some materials.

Murakami, Tatsuya [63] see Kabata, Shigeru

Muros, Vanessa (UCLA/ Getty Conservation Program) [253] Analyzing Deteriorated Glass Using pXRF: A Preliminary Study of Vitreous Beads from the Late Bronze Age/Early Iron Age Tumulus of Lofkënd

The availability of portable analytical instrumentation, such as portable x-ray fluorescence spectroscopy (pXRF), has allowed for more archaeometric research to be conducted on archaeological materials in the field, where artifacts can be analyzed in situ. The application of this technique to the study of ancient materials has been advantageous in that many more artifacts can be analyzed non-destructively without the need for sampling. Issues are often encountered, however, in the characterization of these objects due to the heterogeneity of the materials used, the method of manufacture or the alteration the artifacts underwent during burial.

This paper will describe the characterization of a group of vitreous beads excavated from the Late Bronze Age/Early Iron Age tumulus (14th-9th c. BC) of Lofkënd in Albania. The beads, which exhibited varying degrees of deterioration and corrosion, were analyzed using pXRF in order to identify the raw materials used. The factors considered in the creation of the analytical methodology will be presented. The challenges encountered in the interpretation of the results, and the importance of understanding the deterioration processes of archaeological materials when studying ancient artifacts will be discussed.

Murphy, John, Mark Altaweel (University College, London), Lilian Alessa (University of Alaska) and Andrew Kliskey (University of Alaska) [23] Water Then and Water Now: Computational Approaches to Modeling Archaeological and Contemporary Water Management

An important promise of the modeling approach in archaeology is generalizing from historically particular archaeological test-cases to dynamics and principles applicable across contexts and even into contemporary life. A long-running simulation project, the Hohokam
Murphy, Joanne (University of North Carolina Greensboro) [61] Same, Same, but Different: Ritual in the Archaic States of Pylos and Mycenae

This paper explores how two contemporary and culturally related archaic states, Pylos and Mycenae, manipulated ritual to communicate and create status. By exploring the evidence for rituals in these two Greek Bronze Age states I illustrate that although each was using ritual to express and confirm the elevated status and identities of their elites, both states used different types of ritual to achieve this. In the final periods of the palace's use, Pylos was becoming architecturally similar to Mycenae yet it began to differ in its use and location of ritual. In Pylos as the state grew in size, status, and power it deemphasized its burial rituals in favor of rituals at the palace itself, such as feasting and sacrifices in its most elaborately decorated room. In contrast, Mycenae continued to invest large amounts of labor and wealth in its burials while also conducting large scale feasts at the palace and having areas at the palace reserved for ritual use, such as the cult center. This paper highlights the need for and the value of detailed contextual analysis of individual states in any society in order to understand the reasons behind their similarities and differences.

[61] Chair

Murphy, Larry (ADIA) and Linda Scott Cummings (PaleoResearch Institute) [135] Analytical Techniques for Organic Remains in Submerged Sites: Examples and Potential

Submerged sites, both archaeological and forensic, possess potential for high degrees of preservation of organic remains. This paper discusses the nature and potential of this preservation and analytical technical tools and processes that can be applied to examine organic cultural remains from submerged contexts. Methods and concepts employed successfully in the archaeological investigation of submerged sites provide the basis for forensic applications.

Murphy, Larry [135] see McAllister, Martin

Murray, Samantha (SWCA Environmental Consultants) [102] The People of Plaza Church Cemetery (1822-1844): An Osteological Analysis of Los Angeles's First Cemetery

In October of 2010, archaeological monitors encountered a portion of the old Plaza Church Cemetery that was thought to have been moved in 1844. As tree roots grew deep into the soil, as buildings were erected, and as blacktop was poured, the people of Plaza Church Cemetery had lain silently forgotten below the surface for over 150 years. This study presents the results of an osteological analysis of approximately 130 individuals excavated from the Plaza Church Cemetery between 2010 and 2011. Despite extremely poor preservation of skeletal material and amidst the controversy between Native American groups and local agencies, the osteological analysis produced important data about a population living in 19th century Los Angeles as it transitioned from pueblo to city. Examination of the bones revealed a mixed group of hard working men, women and children with extremely modest burial practices and in overall poor health. The bones provide a glimpse of the people who built early Los Angeles and were then laid to rest in its first official cemetery.

Murray, Daithi [263] see Bunce, Michael

Mutin, Timothy [58] see French, Kirk

Myers, Sarah (Indiana University South Bend), Sarah Nixon (IU South Bend), Bryan Dull (IU South Bend) and James VanderVeen (IU South Bend) [269] It Takes a Village to Excavate a House: Community Engagement in Archaeological Field Schools

An archaeological field school is not often viewed as a public archaeology program. The members are university students whose primary goal is to learn the process of research design and the techniques of excavation. The field schools at Indiana University South Bend, however, have been conducted with the aim of involving the local communities in a sustained manner. We partner with area museums and historical societies, volunteers dig alongside students for the whole field season, the public and press are invited to visit, and the artifacts and information recovered are shared with the wider community through presentations and exhibits. The results of this effort are measured through interviews with field school participants and the associated institutions. Volunteers learned as much about general issues of stewardship and contributions made by archaeological research as they did specific site histories and the proper way to hold a trowel. In addition, the time students spent instructing the volunteers and visitors increased their own engagement in the discipline. By directly involving those who live and work in the area where the excavation is conducted, we are making public archaeology more personal.

Nadeau, Jaclyn (University at Albany) [155] Research, Museum Collections, and Cultural Resource Management

This study focuses on the relationship between emerging residential sedentism and technological change. It compares tools and cores, production stages, and technological efficiency from
multiple assemblages in eastern New York. It is designed for application to museum and cultural resource management collections where information crucial to interpretations of settlement and subsistence is often stored. Expressly emphasized is the importance of incorporating these underutilized resources into a formal research program. Materials are curated to allow for future research and contend with changing research paradigms. Using contemporary techniques of lithic analysis on curated materials thus ensures that preexisting models are still relevant.

Chair

Nadel, Dani [162] see Power, Robert

Nagaoka, Tomohito [194] see Shimoda, Yasushi

Naito, Yuichi [138] see Yoneda, Minoru

Najjar, Mohammad [201] see Knabb, Kyle

Nakamura, Carolyn [32] see Agarwal, Sabrina

Nakassis, Dimitri (The University of Toronto)

[239] Livin’ in a New World: Elite Strategies during the Mycenaean Collapse

This paper proposes a new view of inequality and how it was reproduced during the collapse of the Mycenaean states in Late Bronze Age Greece. It is commonly accepted that the collapse of the palaces ca. 1200 BCE engendered a deep-rooted change in the social order and a substantial decrease in social and economic inequality. It is thought that the elite disappeared along with the palaces, leaving local communities to their own devices, and resulting in the promotion of local leaders. I show that this explanation relies on a monolithic and bureaucratic model of the state that does not stand up to scrutiny. Recent work shows that palatial affairs were managed by a broad array of independent high-status individuals. Thus the palace is not so much a free-standing and closed system as a framework for interactions between heterogeneous agents. The collapse of the palatial system does have significant effects, but recent work on the archaeology of the 12th century BC suggests that these patially-active elites did not simply vanish. They rather continued to assert their elevated status in ways that were largely unchanged. These strategies failed to account for their new socioeconomic environment, however, and were ultimately unsuccessful.

Nakazawa, Yuichi [147] see Iwase, Akira

Nakazawa, Yuichi (Hokkaido University), Akira Iwase (Meiji University), Masami Izuho (Tokyo Metropolitan University), Toshiro Yamahara (Obihiro Centennial Museum) and Minoru Kitazawa (Obihiro Centennial Museum)

An Evaluation of Site Occupation Intensity: Hearth-Centered Spatial Organization at the Upper Paleolithic Open-Air Site of Kawanishi C, Hokkaido, Japan

Prehistoric hunter-gatherers have often occupied flat open-air surface, while degree of site occupation intensity varied across occupational surface depending on how activities were organized. Given the perception that hearths have served for central nodes of human activities, we scrutinize how burnt obsidian artifacts with and without hearths, we scrutinize how burnt obsidian artifacts originally dropped into hearths scattered around the locations of hearths in terms of artifact size-sorting. Natural and cultural size-sorting processes of burnt and non-burnt artifacts suggest that inferred occupation intensity and performed activities changed among hearth-centered areas. A quantitative comparison of burnt artifacts and refitted specimens among the clusters will further provide an implication of Upper Paleolithic hunter-gatherer’s labor organization.

Naleimaile, Sean (University of Hawai‘i-Manoa)

[203] Discussant

Nanavati, William (Washington State University), Rachel Sullivan (Washington State University), Nichole Bettencourt (Washington State University), Louis Fortin (Washington State University) and Melissa Goodman-Elgar (Washington State University)

[224] Characterizing Tropical Anthrosols by Laser Diffraction Particle Size Analysis

Particle size distribution or texture is a fundamental physical property used to deduce soil and sediment formation and other characteristics. Humans alter natural soils and sediments through additions, such as food refuse, and losses, such as tillage-induced erosion. We seek to characterize these anthropogenic patterns. However, traditional archaeological texture determinations by dry sieving and hydrometer or pipet methods are not universally effective. In our study of archaeological sediments from Bolivia, we found dry sieving considerably underestimated the fine fractions compared to wet sieving. Dispersion of tropical soils in sodium hexametaphosphate caused clay flocculation reducing the accuracy of pipet and hydrometer determinations.

We addressed these concerns by conducting a series of experiments using wet sieving and laser diffraction under different pretreatment methods. A major advantage of laser diffraction is high data resolution in 0.25 φ intervals. This allows comparison of particle size distribution curves that can be used to “fingerprint” the size classes impacted by human activity when compared with controls. Although all PSA methods have limitations, our comparative data show that wet sieving followed by a dispersion targeted to clay composition produces a replicable PSA method that better estimates sediment composition compared to standard treatments in these tropical soils.

Nash, Donna [61] see Williams, Patrick

Nash, Donna (UNCG)

[100] The Haves and the Have-nots: Poverty in the Ancient Andes?

At European contact the Andes lacked a developed market system but was home to the New World’s largest polity, the Inka Empire. Even though there were stark differences in access to resources, because extraction was largely based on labor, social theorists argue that the empire was free from depredation. Ethnohistorical accounts praise the just administration of the Inka, however archaeology provides a check on these potentially polemical narratives. In this paper I examine household data, human remains, and labor demands from both the Inka and Wari empires to assess if these extractive polities subjected conquered groups to conditions of poverty.

Nation, Humberto and Holley Moyes, PhD


Archaeological investigations indicate that extensive political, economic, religious and military interactions existed between ancient Maya polities in Belize. One documented form of interaction is the breakage of speleothems from sacred caves and transport to political centers, which has become an increasingly
well-documented phenomenon (Brady et al. 1997). One way to elucidate the extent, meaning and significance of this practice is through chemically sourcing these cultural materials. With the exception of a few pilot studies, no substantial effort has been made in developing a methodology and database for that would help establish the provenance of lithic materials such as speleothems. This paper examines the ways in which spectrometric techniques are substantial changing our understanding of the social dynamics surrounding caves.

Naudinot, Nicolas (University of Nice - UMR 7264 CNRS)  
[291]  
*Entering the Mountain Range: Altitude Settlements at the End of the Late-Glacial in the Italic Epigravettian Area*  

This paper aims to discuss the interpretation of dates/sites effective by integrating several major taphonomic and socio-economic parameters that could affect the data and the way we interpret them. Among these parameters, using a techno-economic approach of lithic material, we specifically focus on the consequences of mobility strategies on these interpretations. In this perspective, we study the interaction between human societies and the altitude environments in the Italic recent Epigravettian techno-complex that spread between Bølling-Allerød and early Holocene. For the present paper we decide to focus on three research areas among this territory: 1. Venetian Pre-Alps; 2. Tuscany Appenin and 3. Ligure-Provençal Arc. Date/sites effectiveness vary consequently between the Veneto and Tuscany. How can we interpret these differences behind the taphonomic/research/politic bias? The techno-economic data from the Ligure-Provençal Arc allow us to discuss these variations. Our result show that even if the 14C/population relationship brings interesting information about population tendency, these data cannot be only interpreted in term of demography but also in term of territory management.  

[291]  
Chair  

Nauman, Alissa [120] see Hill, Katherine  

Nauman, Alissa (Hamilton College) and Nathan Goodale (Hamilton College)  
[127]  
*Exploring Expressions of Gendered Identity in Household and Community Organization at the Slocan Narrows Pithouse Village, Upper Columbia River Drainage, British Columbia, Canada*  

Studies examining the activities of women, men and children in the archaeological record have become gradually more common, yet have remained relatively absent in the Interior Pacific Northwest. In this paper we draw upon ethnographic literature and oral narrative to aid in the exploration of household and community organization at the Slocan Narrows Pithouse Village, a community located within the Upper Columbia River system dating c.a.3100-250 cal B.P., with the specific aim of examining aspects of identity and gendered behavior. Recent investigations have detailed a chronology of the site indicating four major occupations. Study of village layout at different slices in time offers insight into possible community dynamics, while material culture identified from excavations in a housepit dating to 1050 cal B.P. serves as a case study to examine the organization and use of space within a household. We utilize this data to assist in formulating an archaeological research strategy to aid further investigation of engendered activities at the Slocan Narrows Village site.  

Naumann, Madeline [121] see Schubert, Ashley  

Navarro Farr, Olivia [63] see Freidel, David  

Navarro-Farr, Olivia (The College of Wooster), Griselda Perez (La Universidad de San Carlos), Damaris Menendez (Proyecto Arqueologico El Peru-Waka’), Francisco Castaneda (Proyecto Arqueologico El Peru-Waka’) and Juan Carlos Perez (Proyecto Arqueologico El Peru-Waka’)  
[65]  
*Staying Power: Ritual Dynamics of Pre-Abandonment Political and Symbolic Agency at Classic Maya El Perú-Waka’*  

Macro-scale abandonment and collapse studies have provoked rich discussions about the dynamics of decline. They have also encouraged healthy skepticism about the seeming simplicity with which complex societies both rise and fall, as though subject to a kind of inevitable ebb and flow like the tide. Framing collapse in macro terms forces us to look at the intricacies of the micro-scale, revealing diverse processes of active social memory and notably deliberate responses which, in some instances, call into question the idea that decline is inevitable and passively responded to by a given populace. Indeed, fascinating new data from the main civic-ceremonial shrine at El Perú-Waka’ reveals a striking emphasis on symbolic capital and reliance on corvée labor to execute a series of intentional symbolic “statements” and grand public ceremonies. It is suggested these acts were conducted to ensure continuity and the maintenance of balance in the midst of the dissolution of dynastic authority.  

Nawrocki, Stephen [193] see Latham, Krista  

Ndiema, Emmanuel [225] see Dillian, Carolyn  

Nealis, Stuart [40] see Killoran, Peter  

Nedelcheva, Petranka and Ivan Gatsov  
[90]  
*Bullet Core Technology at South Marmara Region Seventh–Sixth Millennia B.C.*  

This paper deals with the main technological and typological characteristics of the Neolithic and Chalcolithic bullet core technology in the areas of South and East of Marmara and Northern Aegean shore. This technology spread in Northwestern Anatolia during the 7-6 mill BC and has been recorded in the lithic assemblages at different settlements such as Barcin Hayük, Ulucak, Menteşe, lipinar, Fikirtepe, Pendik, etc. The fact that general technological and typological structure of the flint and obsidian assemblages didn’t change in the space and time for around 1000 years predicts a generalized steady behavior and defined net of activities. As a whole the research reveals underlying uniformity concerning the lithic industry and the system of procurement, and documents evidence for common lithic traditions and in some degree similar environmental traits between plain and coastal settlements as well.  

Neff, Linda (N Arizona University)  
[48]  
*Getting Your Students to Read the Text in an Undergraduate Archaeology Classroom*  

Getting students to read the course-related texts in the archaeology undergraduate classroom is one of the biggest challenges facing instructors. Yet in order to teach undergraduate students how to think, they need to learn the language of the field. One way students can learn the basic language of archaeology is by reading about it. Yet undergraduate students have this amazing ability to avoid the reading assignments thereby thwarting instructor efforts to teach them how to think in well thought out critical thinking activities. While the summative mid-term and final exam is one way to assess a student’s cognitive skills and mastery of the content, sometimes more frequent formative assessments offered at regular intervals, can help a student move toward the course goals. In addition, frequent assessments also help the instructor clarify and guide the students along the way; they help keep the students on track. In this presentation, I will share my...
experiences using a variety of techniques to assess course-related texts in the undergraduate archaeology classroom (online and off). Using the misconception/preconception check, empty outlines, and muddiest point strategies in three different undergraduate course contexts, I will discuss how the course structure can lead to student success.

Neff, Hector [186] see Sweeney, Angelina

Neff, Ted (USU Archeological Services/Museum of Northern Arizona), Kenneth Cannon (USU Archeological Services), Molly Cannon (USU Archeological Services), William Eckerle (Western GeoArch Research) and Paul Santarone (Archeological Services) [281]

Creative Mitigation in Action at Camp Williams, Utah: Archaeological Testing Results from Three Upland Sites

While archaeological research in northern Utah is well established, only a relatively small percentage of it has focused on upland settings. The Utah National Guard and Utah State University Archeological Services recently completed an interdisciplinary assessment of three archaeological sites in upland contexts at Camp Williams in the West Canyon area. This research represented a creative approach to archaeological site mitigation. Work included geomorphic assessment, a magnetometer survey, and Optically Stimulated Luminescence (OSL) dating. The project area is notable for a high density of upland sites dating to the Archaic and Fremont time periods. The results presented in this paper shed some additional light on regional settlement in the uplands along Utah’s Wasatch Front.

Negrino, Fabio [28] see Riel-Salvatore, Julien

Nehler, Olaf [71] see Arndt, Ursula

Neitzel, Jill (University of Delaware) [139]

Hair Styles and Identity in the U.S. Southwest

This paper explores the issues of identity and interaction as evidenced by the hair styles and hair decorations worn by prehistoric Southwesterners. After first reviewing available historic period data, it analyzes two sets of archaeological evidence-material remains from throughout the Southwest and artistic depictions on Mimbres bowls, Casas Grandes effigy vessels, and Ancestral Puebloan kiva murals. These data document how hair styles and their decorations conveyed a myriad of identity messages as well as deeper layers of meaning. Some coiffures and accessories were restricted to particular groups, and some reflected broader connections. Within groups, women and men generally wore different styles both in daily life and on special occasions. Some accessories reinforced these gender messages, but this redundancy was secondary to their main purpose of marking social status and ceremonial roles. These additional messages varied, depending on the occasion and the complexity of the group. The most elaborate headdresses, and possibly some simpler decorations, were worn only as part of sacred rituals. Finally, some coiffures and hair ornaments linked people to their ancestral past and had embedded religious symbolism.

Neller, Angela (Wanapum Heritage Center, Grant County PUD) [246]

Moderator

[246] Discussant

Nelson, Ben (Arizona State University) [97]

Discussant

Nelson, Amy (University of Oregon), Patrick O’Grady (University of Oregon) and Mike Rondeau (Rondeau Lithics Analysis) [128]

A Survey of Clovis Technology in The Great Basin

The Northern Great Basin has been a source of Clovis archaeology for many years and with the discovery of new sites throughout the Great Basin we are expanding our understanding of Clovis technology, people and culture more and more each day. The summer of 2012 I worked as a supervisor at the University of Oregon’s Archaeology Field School located near Wagon Tire in Eastern Oregon in the Northern Great Basin, directed by Dr. Patrick O’Grady, a museum archaeologist at the Museum of Natural and Cultural History. Dr. O’Grady and I, along with Mike Rondeau, an expert in Paleoindian lithics, put together a survey of the area surrounding the rockshelter we were excavating for the field school. The goal of this survey was to gather as much information about the area as possible and to learn more about Clovis technology. The site has point types ranging from Rose-Springs points all the way to Fluted bifaces and associated technology such as overshot flakes and fluted tools and bifacial thinning flakes. We collected thousands of lithics and Mr. Rondeau has been working on the analysis of the lithics to give us a summary of the site’s history and its Clovis component.

Nelson, Peter (UC Berkeley) and Sara Gonzalez (Carleton College) [169]

Decolonizing the Ranks: Learning Field Methodology with and from Descendant Communities

In this paper we will consider how the practice of decolonization impacts the values we foster in our roles as researchers, instructors, and mentors. Decolonization provides a process for thinking about the ways that our research can and does matter (and to whom). Particular attention will be given to the ways in which thinking about our accountability to both discipline and community changes how we train the next generation of archaeologists. We will explore one case, a UC Berkeley field school at Pinnacles National Monument, which was a collaborative effort between the National Parks Service, UC Berkeley, and the Amah Mutsun Band of Ohlone People. As a community-based project, Amah Mutsun community members were not only involved in planning and commenting on research design and methodology, but were also essential players in the operations of the field school itself (i.e., as instructors, project leaders, crew members, and even as cooks). This integrated involvement provided students from UC Berkeley and Vassar College with a unique learning landscape in which they had the opportunity to study Amah Mutsun history and heritage directly from and with the tribal community.

Nelson, Sarah (University of Denver) [289]

Leadership in the Silla Kingdom of Ancient Korea and Relationships with the Yamato Kingdom in Ancient Japan

This paper is inspired by a recent book which details the effect of ‘immigrant’ families from Korea into the Japanese islands at the time of the formation of the state in Yamato, based on documents. The author discusses silk weaving, goddesses, and cults in relation to families from Korea, detailing the strong place of women among royalty, and the importance of silk and silk worms. The author’s uses the Hata clan from Goguryo for many of his examples. Other writings have noted influences from the Baekje elite, especially as the bringers of Buddhism to Japan – not merely as a religion, but also architecture, sculpture and rituals. I will push this idea in another direction and compare the place of elite women in the hierarchies of both Silla and Yamato by exploring the archaeology of the Three Kingdoms period in Gyeongju and comparing it to sites in Japan, especially shrines.
Monuments in the Moche Valley
Abandoned Initial and Early Horizon
After They've Gone: The Reinterpretation of
Horizon monuments that dotted the landscape of the Moche Valley
remains and argue that the numerous Initial Period and Early
1470) cultures. In this paper, I discuss the significance of these
reutilized for mortuary purposes and other types of ceremonial
Caballo Muerto found abundant evidence that the site was
several centuries. However, excavations at several buildings at
Valley) demonstrated that by the middle part of the Early Horizon,
well-developed and long-lasting tradition of monument building.

Vulnerabilities to Food Securities: Can People Be Buffered from the Impact of Rare Climate Events?
With careful attention to the relationship between climate, population levels, and ways of living, people can adjust to fluctuations in climate conditions within understood ranges. These are fluctuations that have been experienced or can be predicted from recent history and social memory. More challenging are the rare events – those outside of human experience and memory. Are there ways to think about such uncertainties that can help people build resilience to rare events? We use long-term histories of climate and social change to examine consequences of rare events under different vulnerability conditions in the Southwest US and North Atlantic Islands. We focus on rare climate events likely to impact the adequacy of food resources for provisioning people. We examine these dramatically different climates and social contexts as a way to understand how people experience rare climate shocks in the context of different kinds of vulnerabilities. Eight challenges to food security are defined, which we use to delimit constellations of vulnerability conditions that may limit resilience to the impact of a rare event and may offer resilience.

Neubauer, Fernanda (University of Wisconsin-Madison, CAPES Foundation)
Playing with Projectile Points: Umbu Childhood Flintknapping Imitation in Southern Brazil
This study highlights how we can identify children in the archaeological record through the study of finished lithic products. Children are a significant component of most documented social groups and it is expected that they played a role in the creation of the archaeological record. In seeking to understand the many roles that children have played, I contrast lithic tools created by children with the products of more skilled flintknappers. As a case study I use Adelar Pliger site (RS-C-61), an Umbu hunter-gatherer rock shelter habitation site in Southern Brazil dated to 8,000 BP. By linking decisions related to raw material selection with the aesthetic and technological properties of projectile points, I have identified three types made by expert knappers, apprentices, and children. I demonstrate how these agents' differing final products represent distinct behaviors, intentions and choices. At the Pliger site, I suggest that children were producing projectile points around the fire as a form of play in imitation of the adults' knapping activities. Through their play, children were able to roughly imitate formal projectile point shapes but could not reproduce the tools in a three dimensional or technological sense.

Neusius, Sarah (Indiana University of PA), Laura Kaufman (Indiana University of PA) and Andrea Boon (Indiana University of PA)
Assessing Faunal Assemblage Comparability at the Johnston Site
Since 2005, IUP archaeologists have been re-investigating the Johnston site, a large, Late Prehistoric village located near Blairsville, Pennsylvania, that has been considered the type site for the Johnston Phase of the Monongahela tradition of southwestern Pennsylvania. IUP excavations have produced a well-preserved faunal assemblage that can be compared with the faunal remains collected in the early 1950s by Don Dragoon of the Carnegie Museum. Flotation sampling by IUP also has generated a micro-assemblage of animal bone that provides other insights about Monongahela animal usage. Assessing these assemblages for comparability allows us to explore the ways in which sampling and recovery methods as well as differential preservation contribute to our data and interpretations. Key variables for assessing assemblage comparability include recovery method, context, fragmentation, and weight. Even though these assemblages are not entirely comparable, each contributes to the understanding of the use of animals by the inhabitants of this site, and interpreting the different faunal assemblages from the Johnston site promises to contribute to archaeological studies of the Monongahela tradition. Our studies show that it is important for zooarchaeologists to explore comparability in their analyses and make this kind of information available along with their interpretations.

Neubauer, Fernanda [50] see Schaefer, Michael

Nelson, Margaret (Arizona State University)
[273] Discussant
Nelson, Shaun (Utah National Guard), John Crane (Utah State University/ Utah National Guard) and Kenneth Cannon (USU Archeological Services)
[281] A Creative Approach to Archaeological Site Mitigation at Camp Williams, Utah
While archaeological data recovery is a common approach to mitigation, on-site excavation is not always an option. A recent range construction project at Camp Williams presented project planners and archaeologists with the challenge of mitigating impacts to a site that could not be accessed for data recovery due to significant concentrations of unexploded military ordnance. This paper will summarize the deliberate and thoughtful approach taken by the Utah National Guard and Utah State University archaeologists to develop a creative plan to ensure that impacts to the site are mitigated in a way that is meaningful and that contributes to the body of archaeological knowledge in the region.

Nesbitt, Jason (Tulane University)
[65] After They've Gone: The Reinterpretation of Abandoned Initial and Early Horizon Monuments in the Moche Valley, Peru
During the Initial Period (1700-800 cal .B.C) and middle Early Horizon (800-300 cal B.C.), the north coast of Peru was home to a well-developed and long-lasting tradition of monument building. Recent investigations at the Caballo Muerto Complex (Moche Valley) demonstrated that by the middle part of the Early Horizon, monument construction ceased and the site was abandoned for several centuries. However, excavations at several buildings at Caballo Muerto found abundant evidence that the site was reutilized for mortuary purposes and other types of ceremonial activities by the Moche (A.D. 100-800) and Chimu (~800/900-1470) cultures. In this paper, I discuss the significance of these remains and argue that the numerous Initial Period and Early Horizon monuments that dotted the landscape of the Moche Valley (and elsewhere) were significant and highly visible places that were reinterpreted by later cultures and may also have inspired subsequent developments in the region beginning in the early first millennium A.D.

Neusius, Phillip (Indiana University of PA), Sarah Neusius (Indiana University of PA), Beverly Chiarulli (Indiana University of PA) and Ben Ford (Indiana University of PA)
[257] Teaching Heritage Values to Applied Archaeology Students
The IUP MA in Applied Archaeology Program is specifically focused on providing its students with the skills necessary to become practicing archaeologists prepared to work as professionals in cultural resource management and related heritage fields. Two of our goals are to provide background in archaeological law and ethics and to expand students understanding of archaeology’s place in the broader arena of heritage management. Thus, we do not just teach archaeological theory, skills and knowledge. We offer a series of integrated courses including a required course in Archaeological Laws and Ethics, two required seminars in Cultural Resource Management as well as a variety of electives in topics such as Public Archaeology, Issues in Historic Preservation and Contemporary
Native Americans. Internships are also encouraged, as are related courses from other disciplines such as Public History and Environmental Planning. Related extracurricular activities are encouraged. We believe that combining these courses with more traditional archaeological training in a master’s program is the best approach to educating our students. Although our program is only four years old, our initial graduates have had great success in finding employment, and have entered the workforce with many of the specialized skills needed by today's professional archaeologists.

Neusius, Sarah [257] see Neusius, Phillip

Neves, Eduardo (University of São Paulo), Michael Heckenberger (University of Florida) andClaide Moraes (Universidade Federal do Oeste do Pará) [15] 
Super Villages, Small Towns, Garden Cities: Understanding the Large Settlements of Late Precolonial Amazonia

Research done in the last few years brings mounting evidence for the presence of large settlements during the first and second millennia A.D. across the Amazon. Some of those settlements show the presence of highly structured and ordered spatial structures as well as long-term, century old, occupations that would qualify them as cities. However, a closer examination of the data shows that their wide range of forms and shapes defy their classification into received categories. This presentation brings the archaeological evidence to account for such diversity and proposes a different framework, based on the long-term symbolic and economic ties established by ancient Amazonian and the tropical environment, to account for the occupation and abandonment of those large settlements.

Newbold, Bradley (Washington State University) [217] 
Addressing Diet Variability via Bayesian Multi-Source Isotope Mixing Models

The stable isotope signatures from agrarianist groups covary with the degree of reliance on plant or animal protein, facilitating useful reconstruction of the diets of incipient farmers in the distant past and pinpointing local establishment of agriculture. In this study, stable carbon and nitrogen isotopes from bone collagen were used in concert with Bayesian multi-source mixing models to estimate proportional contributions of various food sources to the diets of Fremont-affiliated individuals of the eastern Great Basin and western Colorado Plateau. This source population (AD 400-1400) spans the beginnings of Fremont culture and associated agricultural practices, the peak of sociocultural and subsistence diversity, and subsequent demise and abandonment of farming. A novel freeware package, SIAR (Stable Isotope Analysis in R), is introduced and utilized as a more robust alternative to IsoSource and similar linear mixing model packages, as it is capable of both incorporating variation and uncertainty as well as accounting for grouping structure within the data.

Newman, Tiffany [87] see Villagran, Victor

Newsom, Lee A. [172] see Kistler, Logan

Newsome, Seth D. [88] see Etnier, Michael

Nez, Nanebah (Arizona State University / Tonto Nat. Forest) [174] 
What are the Moral Considerations of Engaging in Tribal Consultation?

Anthropology in the Americas is besmirched with examples of academic researchers using Native American history and culture to build names and niches for themselves. Unfortunately these case studies of abuse define the current animosity that exists on behalf of Native Americans toward anthropologists. So where does that leave us as agency representatives? Tribal entities see letters from agency liaisons and think, “What do they want now?” “What are the motives behind this request?” “How will this information be used?” “Who will benefit from this documentation?” In this paper I will explore the existing relationship between tribal entities and Federal Agencies. I will also explore personal experiences and strategies that I have employed as a Tribal Relations Specialist to overcome suspicion and build mutually respectful relationships with Tribes.

Nials, Fred (Desert Archaeology, Inc.; GeoArch) [199] 
The Role of Piping in Abandonment of Prehistoric Agricultural Sites and Interpretation of Site Features

Piping (tunneling, subsidence, subsurface erosion) is a geological process described from almost every continent and climate regime, but is of particular importance in arid and semiarid regions such as the American Southwest. The role of piping in destruction of modern farmlands and development of badlands topography has long been recognized, but its import to prehistoric agriculture has been under-appreciated. Recent excavations in Arizona reveal the hazards of piping for irrigation farming and lead to new ideas regarding the formation and interpretation of some types of site features. The traditional association of piping and arroyo formation is not necessarily correct, and customary methods of excavation of pit features may not be adequate for identification of piping-related features. Many previously-identified “cultural” pits may be of natural origin. New evidence from floodplain agricultural sites in the Southwest suggests that piping may have been a significant factor in the abandonment of some agricultural sites. Criteria for recognition of piping-related features are reviewed, and suggested methods of excavation of some types of cultural features are presented.

Nicewinter, Jeanette (Virginia Commonwealth University) [178] 
Geometric Communication on Cajamarca Ceramics

With the advent of kaolin ceramics and a unique style of representation that includes naturalistic and geometric depictions, the prehistoric Cajamarca culture in the north highlands of Peru was archaeological defined. Daniel G. Julien has deemed the hallmark style on Cajamarca ceramics a marker of Cajamarca ethnicity. However, the analysis of ceramics within terms of form and style is an abbreviated version of the complex communication intended to be understood by the viewer of the object. I argue that the geometric paintings prevalent on Cajamarca ceramics during the Late Intermediate Period, between 1000 and 1460 CE, at the site of Yanaocaro represent a visual communication system that functioned within the code of Cajamarca culture and society. I will compare elements from representational and non-representational imagery on decorated Cajamarca ceramics to demonstrate that individual elements or signifiers worked within a communication system intended to employ ideas and concepts from the artist to the viewer. By reconstructing the visual communication system evident on Cajamarca ceramics, the ideological and artistic function of Cajamarca ceramics within prehistoric north highlands culture is better understood as a marker of identity and an implement for the formation of ethnicity.

Nicholas, George (Simon Fraser University) [118] 
Chair

Nicholas, Linda [133] see Feinman, Gary
Nichols, Deborah (Dartmouth College), Wesley Stoner (University of Missouri), Bridget Alex (Harvard University) and Destiny Crider (Luther College) [288]

An Analysis of Surface Ceramics from Cerro del Gentil, a Paracas Adobe Mound in the Chincha Valley, Peru

Our 2012 research at the site of Cerro del Gentil (PV 57-59), an adobe platform mound in the Chincha Valley of the Peruvian south coast, revealed data suggesting that members of the Paracas regional community built and occupied the site during the Early Horizon. As a component of our long-term site management plan we systematically recovered and analyzed surface artifacts associated with looted pits and areas disturbed by earth-moving machinery. We focused on diagnostic ceramic sherds as one component of our recovery project. Our results suggest that occupants in the area immediately surrounding Cerro del Gentil utilized at least three distinct ceramic styles: Paracas, Topará, and later Carmen. Analysis indicates that both food preparation and consumption activities took place on site. Finally, recovery of decorated ceramic panpipe fragments suggests that musical performance was an important component of the Carmen period occupation. Our study highlights the usefulness of cleaning looted contexts during early stage research as a method for gaining an preliminary, broad-picture perspective on site occupation and reuse, and as a compliment to concurrent data sets.

Nigst, Philip (University of Cambridge and Max-Planck-Institute for Evolutionary Anthropology), Larissa Koulakovska (Archaeological Museum, Institute of Archaeology, National Academy of Sciences of Ukraine), Vitaly Usik (Archaeological Museum, Institute of Archaeology, National Academy of Sciences of Ukraine), Freddy Daniëls (Royal Belgian Institute of Natural Sciences) and Jean-Jacques Hublin (Department of Human Evolution, Max-Planck-Institute) [207]

Exploring the Middle and Upper Paleolithic of Western Ukraine

Neanderthal and modern human adaptations to various climatic conditions are a heavily debated issue in the archaeological and anthropological communities. In order to contribute to a better understanding of these adaptations during roughly MIS 5 to 2, we recently started an interdisciplinary research project in Western Ukraine. It was mainly selected for its rich archaeological record and the thick loess deposits. Since 2010 we are conducting surveys and test-excavations. Here we present first results of our survey in the Dnister valley and of the excavations at Beregovo (Transcarpacia). In the Dnister valley we discovered many Paleolithic sites. These include one Middle Paleolithic site probably predating MIS 5e, mid Upper Paleolithic as well as late Upper Paleolithic sites. Excavations at Beregovo provided a rich Proto-Aurignacian assemblage. First 14C dates and the lithic assemblage including Dufour subtype Dufour bladelets are presented. This is the first Proto-Aurignacian site in this region.

Nikita, Efthymia [172] see Radini, Anita

Nightengale, Sheila (City University of New York, Graduate Center), Alex Mackay (School of Archaeology and Anthropology, Australia), Jessica Thompson (School of Social Science, University of Queensland), Victor de Moor (Department of Archaeology, Leiden University, Leid) and Elizabeth Gomani-Chindebvu (Ministry of Tourism, Wildlife, and Culture, Lilong) [76]

Variability in Middle Stone Age Stone Artifact Reduction Strategies and Raw Material Use in the Karonga District of Northern Malawi

The variability of Middle Stone Age stone tool production has previously been demonstrated in the archaeological record of northern Malawi. However, evaluation of these assemblages in relation to those of more intensively studied parts of Africa has been minimal. This is in part because of a lack of chronological resolution and an analytical framework for typo-technological classification and comparison. From 2009 – 2012, archaeological survey and excavation of Middle Stone Age deposits in the Karonga region of Malawi has resulted in the recovery of artifacts from four different major river catchments. This dataset, which comprises worked ochre and over 40,000 stone artifacts from six sites and 21 test pits across the landscape, and detailed survey data of several hundred surface finds from the broader area, shows significant temporal and geographic variability of the artifactual record. This variability—evidenced in the differential use of raw materials and reduction strategies that vary in intensity of preparation and exploitation, both between sites and within layers at the same site—is of particular importance for understanding the adaptive responses of MSA hominins at times of inferred environmental change, and the behavioral trends that situate these hominins in relation to their contemporaries elsewhere in Africa.

Nieva, Miguel [193] see Fondebrider, Luis

Nishida, Yastami [258] see Craig, Oliver

Nishida, Yastami (Niigata Museum of History), Hayley Saul (University of York), Carl Heron (University of Bradford) and Oliver Craig (University of York) [258]

Hot Dishes in the Beginning of Jomon Period, Japan

As one of the earliest pottery in Eurasia, Jomon pottery has gained a lot of interest since the middle of the last century. Compared to dating, usage analysis has been modest, until recent development of organic analysis techniques. Frequent carbonized residues and sooting found on early pottery indicate their usage on fire, and this fact enabled direct AMS dating of the sherds. By taking a close look at the dating of the Incipient and Initial Jomon periods, one notices the difference in the numbers of results by pottery types. It does not reflect the difference in the amount of sherds unearthed. Actually there are some periods when residues are scarcely found. If the role of pottery did not change, there must have been changes in the ingredients or cooking methods.

Our team has focused on carbonized residues on the incipient and the initial Jomon pottery from various parts of Japanese archipelago, and applied chemical as well as archaeobotanical analyses. The sampled sites include open sites, cave sites and shellmiddlen sites and dates range from ca. 13,000 cal B.C. to 5,500 cal B.C. To what degree can we establish the hot dishes that were cooked in the pots?

Nishimura, Masanari (Center for Research of Cultural Resource Kanazawa University) [216]

Early Bronze Casting and its Cultural Impact on the Prehistory of Northern Vietnam

This paper argues that the earliest bronze metallurgy in northern Vietnam appeared with the early state of the Dong Dau period (ca. 3200-2900 B.P.). The Dai Trach site, located in the middle of the
Red River Plain, is a multi-component habitation site with Dong Dau and Dong Son cultural layers (3000 B.P. to 2200 B.P.). The 2001 excavation revealed two archaeological features of bronze casting, which suggests an intensive bronze production occurred during the Dong Dau period. Previous scholars have speculated about the possibility of bronze casting appearing during the preceding Phung Nguyen period. No Phung Nguyen site or site component has yielded bronze metallurgical evidence, however, and evidence from the Dai Trach site supports a model in which bronze casting was introduced in the early stage of Dong Dau period. This period witnessed a decline in settlement numbers, and an increase in site size along the major rivers. This change would be related to the shift from lithic to bronze raw materials for tool production. Parallels are also drawn between the earliest dated bronze technological tradition in northeastern Vietnam and that of northern Vietnam.

Niven, Laura [68] see Bosch, Marjolein

Nixon, Sarah (Indiana University South Bend) and James VanderVeen (Indiana University South Bend) [268]
Reproducing Ceramic Vessel Form to Reconstruct Usage: A Case Study of the Caribbean “Water” Bottle

When considering the behavior of past people, the choices employed in the manufacture of artifacts are as important to consider as the usage, distribution, and symbolic meaning of those same materials. This is particularly true when the true use of an artifact remains in question. This poster examines the production processes employed in the creation of a specific vessel found throughout the pre-contact Caribbean. The bottle, known as a potiza, is often described as a water storage jar, but that usage is currently in debate. In an attempt to imitate the qualities found in potizas to better understand their function, vessels were created using various building techniques and firing styles and temperatures. These reproductions were subsequently tested with regards to predicted ceramic usage and breakage patterns observed in the archaeological record. As seen ethnographically around the world, ceramic vessel form is a function of cultural usage; as such, the experimental information of this study gives insight into the placement of the potiza in Taino culture.

Nixon, Sarah [269] see Myers, Sarah

Nixon-Darcus, Laurie (Simon Fraser University) and A. Catherine D’Andrea (Simon Fraser University) [250]
Making a Met’han: The Manufacturing of Grindingstones in Northern Ethiopia

The manufacturing of grindingstones or saddle querns is a very ancient tradition found in both the Old and New World, and in some regions, the technology persists to the present-day. With the relatively recent introduction of diesel and electric flour mills, it is a rapidly disappearing technology. In northern Ethiopia, the production of grindingstones or met’han remains a living tradition, although this expertise is increasingly limited to an older generation. This paper presents the results of an ethnoarchaeological investigation of grindingstone production documented in the Gulo Makeda region of Eastern Tigrai. From raw material selection to final finishing, observations and data collection were informed by concepts of design theory and chaîne opératoire. Decisions made during the manufacturing process demonstrated a thorough understanding of the structural properties of stone, and design decisions affected the usability and longevity of the finished tool. Embedded in the manufacturing process are social implications for the people of this region.

Nobile, Juan [193] see Fondebrider, Luis

Noll, Christopher (Plateau Archaeological Investigations) and John Kannady (Plateau Archaeological Investigations) [148]
A Geospatial Model of the Relationship between Chippable Stone Quarries and Workshop Locations in the Northwestern United States

Chipped stone reduction strategies rely on stone qualities that are necessary for controlled fracture. Stone with the necessary attributes occurs in source locations that are irregularly distributed and found in discrete localities. The presence of a high quality chippable stone source on the landscape is a major influence on population movements as it relates to the exploitation of that source. Secondary factors may influence the intensity of the exploitation of a raw material source. The dependent tasks involved in reducing stone into usable objective pieces require an investment of time that must be supported by the raw material source environment through available low-cost subsistence resources such as shellfish and ready-to-eat plants, and task dependent resources such as fuel for heat treatment fires. The availability of low cost subsistence resources and task dependent resources may have played a significant role in determining which stone sources were exploited prehistorically. This paper explores the secondary influences on raw material exploitation and provides some environmental parameters for geospatial modeling the location of lithic workshops.

Noonsuk, Wannasarn (Walailak University) [104]
The Foundation of Greatness: The Early Development of the Tambralinga Kingdom in Peninsular Siam

Located on the east coast of Peninsular Siam, an isthmian tract between the South China Sea and the Bay of Bengal, Tambralinga had the openness of an island to trade and cultural influences since the late centuries B.C.E. However, historians tend to talk about Tambralinga as if it emerged only in the early centuries of the second millennium C.E. when the kingdom reached its peak. During that time, according to the historical record, it sent a series of envoys to China, controlled the whole isthmus, sent a prince to rule Angkor, and even sent army across the ocean to occupy the northern part of Sri Lanka. It was the only Southeast Asian kingdom that could establish a vassal in South Asia. However, the early development of Tambralinga has largely been neglected by scholars. Therefore, this paper will examine the early material culture in the area of Tambralinga from the late centuries B.C.E. to the 11th century C.E. My archaeological fieldworks demonstrated that this area had the highest densities of Bronze Drums, early Vishnu images, lingas, Hindu shrines, and stone inscriptions in Peninsular Siam. Clusters of early historic sites on the GIS-based maps and the kingdom’s cultural geography will be discussed.

Nordine, Kelsey [103] see Hageman, Jon

Norman, Garth (ARCON, Inc.) [78]
Izapa, Mexico to Nazca, Peru by Sea—15 Degrees North and South Latitude SUN ZENITH Ancient Cultural Calendar Connection

Izapa, Mexico’s sophisticated design plan was completed in the 4th Century BC prior to initiating construction of mounds and monuments. The master plan incorporated geometric mandalas, standard measures, calendar observatory and precession measures in the temple center. This empirical data base provides a solid foundation for Izapa comparative studies. Izapa’s 15 degree north latitude Zenith Sun passage documents the sacred 260-day calendar. I traced Izapa’s Anti-Zenith to 15 degrees south latitude at Nazca, Peru in search of the sacred 260-day calendar in the southern hemisphere. A Google Earth satellite survey reveals Izapa’s full design plan reached Nazca by sea during the settlement of Cauachi around 200 BC. The full data is found in the Nazca lines dimensions and astronomical orientations and in the Cauachi temple geometric design with standard measures and astronomical orientations. This data illustrates long distance cultural contacts by sea and establishes a firm foundation for more open, serious trans-oceanic cultural contacts research.
During the 1570s, Spanish policies in the Viceroyalty of Peru sought to instill a program of colonial dominance through mass resettlement to planned towns (reducciones). Little site-level research investigates how such colonial policies were instituted in situ, or how they were received by Andean communities. Previous research in the Colca Valley of highland Peru demonstrates that these policies were in part enacted through the modification of the built environment within preexisting sites, producing novel places that synthesized elements and practices from both indigenous and Spanish traditions. At Mawchu Llacta, a reducción in the Colca Valley, evidence suggests that the site layout was initially centered on a trapezoidal plaza from a major preexisting Inkaic center, while a second, rectangular plaza was subsequently elaborated. In this paper, spatial network analysis simulates patterns of access and movement between houses and these two plazas within the reducción. This approach illustrates how reducción resettlement was not an arbitrary imposition of foreign spatial practices, but instead was actually enacted through micro-scale processes of recycling and transformation of the built environment, which both reinforced and transformed indigenous spatial practices. These ambivalent processes of co-production in turn generated distinctly colonial-Andean modes of dwelling.

Novotny, Anna (Arizona State University), Asa Cameron (Vanderbilt University), Carla Hernandez (Vanderbilt University) and Steven Werner (Vanderbilt University) [235] Producing Colonial Place: GIS-based Spatial Network Analysis of a Planned Colonial Town in Highland Peru

In the Toledo district of southern Belize, diachronic data established through ceramic typologies and AMS radiocarbon dates are currently refining our understanding of when and for how long the ancient Maya occupied monumental site centers. However, I argue that in order to synthesize a regional chronology for southern Belize, researchers need to evaluate archaeological residues from hinterland settlements. This paper reviews ongoing archaeological research at rural farming settlements surrounding Aguacate village in the Toledo district. Using archaeological reconnaissance, topographic mapping, and surface collections, I consider how the recorded sites fit into ceramic chronologies established at Lubaantun and refined at Nim Li Punit and Uxbenka. Additionally, I explore how spatial data expands our knowledge of diachronic settlement. Preliminary ceramic data from sites on Aguacate community land suggest that settlement may have occurred as early as the Early Classic period (A.D. 250-500), and extended through the Late Classic period (A.D. 500-900). Spatial data suggest that building houses on hilltops was consistent over time. Consideration of hinterland households, their chronology and spatial location, is key to a holistic understanding of the sociocultural processes that shaped ancient society in southern Belize.

Novotny, Claire (University of North Carolina - Chapel Hill) [256] Households and Hinterlands: Synthesizing a Regional Chronology for the Toledo District of Southern Belize

Health and fitness books touting the benefits of eating a “Paleo diet” and following a “Paleo lifestyle” have proliferated greatly in recent years with more than 500 books and countless pre-packaged “Paleo” foods, Paleo shopping list apps and other products currently available to consumers. With titles such as NeanderThin, Primal Body, Primal Mind, and Cave Women Don’t Get Fat: The Paleo Girl’s Diet for Rapid Results, these books clearly resonate with a significant segment of the North American population. This paper explores the assumptions underlying various iterations of the “Paleo movement” and their relation to the archaeological and paleontological evidence for the health, diet and subsistence strategies of our hominin ancestors at different points in our evolution. By way of conclusion, this paper addresses why some people aspire to live a “Paleolithic life.”

Novotny, Anna (Arizona State University) [256] History and Genealogy among Ancient Maya Commoners of the Belize River Valley, Belize

Recent research at Kúkaniloko, an important central O’ahu best known as the piko (navel) of Hawai‘i and a royal birthing site, shows that landscape features both within the view of Kúkaniloko and beyond view were named in such a way as to locate the rise and/or set of stars as and stations of the sun. This ordering of the landscape and stars served to mark events in the culture’s cosmology, the structure of its celestial architecture, and at least one element of societal governance.

Noyes, Martha [280] Writing the Heavens on the Earth: Hawaiian Cultural Astronomy at Kukaniloko

Normoyle, Jessica [182] see Richardson-Cline, Krista

Novic, Juliana (ASU School of Human Evolution and Social Change) [229] Social Mixing in the Neighborhoods of Aztec Period Calixtlahuaca, Mexico

Social scientists have been interested in social clustering or segregation and social mixing for decades. Archaeologists have been slow to focus on these aspects of community. The social organization of a city can have profound effects on the type of community and political organization present there. I examine social clustering and social mixing along the lines of class, ritual, and consumer preferences in the twenty neighborhoods of Calixtlahuaca. The data and analysis show that Calixtlahuaca was a socially mixed city in many respects. House groups shared similarities in consumer preference of ceramics, but these preferences did not dictate where they chose to live. Elites and commoners lived side by side. However, neighborhood location did relate to access to or desire for certain ritual objects and sources of obsidian. These findings suggest that issues of social clustering and social mixing cannot be summarized with one measure. Many factors impact residential choice.

Novotny, Anna (Arizona State University)

Normoyle, Jessica [182] see Richardson-Cline, Krista

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Novotny, Anna (Arizona State University)
Archeological research in Patagonia has focused primarily on the study of hunter-gatherers prior to the contact with European settlers. However, if we consider regional peopling as part of a continuum that can be archeologically evaluated until recent historical moments, this kind of research can provide meaningful insights for assessing settlement patterns and technological choices of a farther past. We study the archeological record attributed to Tehuelche groups already immersed in the social-economic context of the Argentinean state, yet these data are considered independent and complementary to that provided by the historical record. By studying settlement patterns and the use of technology in four different XIX-to-XX century sites of indigenous ancestry, we evaluate the variability of hunter-gatherers material responses as a consequence of European contact. We discuss the different responses and the resilience of the Tehuelche peoples towards European contact at the final stages of the disarticulation of a lifeway based on hunting and gathering. This paper may be useful for understanding the causes of change/continuity of other groups in the past.

Nydegger, Nick [281] see Fruhlinger, Jake

Oas, Sarah [103] Revisiting Bosumpra: Investigating Plant Use, Continuity, and Change in the Ghanaian Rainforest during the Late Stone Age

The rockshelter of Bosumpra in southern Ghana is among the most important sites of the Late Stone Age (LSA) period in sub-Saharan West Africa. The rockshelter is one of the only known LSA forest occupation sites, and it has the longest known continuous occupation sequence in Ghana, spanning almost the entirety of the LSA (c. 10, 280-2550 BP). Scholars interested in West African subsistence practices have long hypothesized that Bosumpra might provide early evidence of tree-nut cultivation, as remains of oil palm (Elaeis guineensis) and incense tree (Canarium schweinfurthii) were recorded from earlier excavations at the rockshelter. This paper presents the results of my M.A. thesis, that focused on the macrobotanical analysis of the seeds, fruits, and wood charcoal remains from the most recent re-excavation at Bosumpra (2008-2010). I provide the first quantitative evaluation of tree-nut taxa use at the site, and document changes in preference between these taxa over time. I also describe the other plant materials recovered, including domesticated millet (Pennisetum glaucum) and cowpea (Vicia unguiculata), providing some of the first macrobotanical data about the emergence and spread of plant domesticates in the tropical forests of southern Ghana in the LSA.

O'Boyle, Robert (University of Montana), Alvin Windy Boy Sr. (Chippewa Cree Tribal Historic Preservation Officer) and Jason Brown (Heritage Preservation Office Content Management Sy) [265] The Good, the Bad, and the Federal Government: A Way forward with Tribal Consultation

The Ojibwe and Ne-hi-yah-w people of the Rocky Boy’s Indian Reservation have been working with federal agencies for years on consultation and the 106 process. The Chippewa Cree Cultural Resource Preservation Department has worked with varying degrees of success with federal agencies. Some of these partnerships have been great, demonstrating what can happen when tribes and federal officials work together, while some have shown the inadequacies and shortcomings of many federal agencies in their level of tribal consultation. This poster is about solutions. The authors have developed an innovative web based solution where Government Agencies and Tribes can work together in the consultation process. A simple letter sent to the tribe has been found to be inadequate to fulfill the requirements under 36CFR800.2Bi. The Cultural Resource Preservation Department has a “forms” page on the cccrpd.com website where federal and state agencies can submit information to the Tribe for consultation and review. Because it is web based, all parties – no matter if they are in Box Elder, Montana or Bensenville, Illinois can access the information. All communication and information can be stored in a single easily accessible location.

O'Boyle, Robert C. [262] see Bello, Charles

O'Brien, Lauren (Southern Methodist University) [16] New Investigations of Pithouses in the Northern Taos Valley

Recent archaeological investigations at several pithouse sites in the Northern Taos Valley have revealed new insights into this period. Research undertaken over the last 30 years has predominately focused on the southern half of the valley, leaving our knowledge of the northern half insufficient. Excavations over the past year have improved our understanding of the design and use of these structures, as well as on extramural areas and possible structures associated with them. This paper will show how this new data has modified our interpretations of what was occurring in the northern half of the Taos Valley, and possible who was occupying it.

O'Brien, Matthew (University of New Mexico) [151] Identifying Leadership for Communal Hunting Episodes at the Eden Farson Site

It is commonly assumed that social status is invisible within hunter-gatherer archaeology due to the absence of clear indicators of prestige among the material culture. In addition, defining individuals or individual households in often obscured by site formation processes. Ethnographic evidence indicates that most hunter-gatherer societies possess some degree of inequality among individuals. These differences are associated with those individuals that possess a comparative advantage over others, which results in greater benefits for themselves or their family. Skewed returns are commonly mentioned in historical and contemporary accounts of communal hunting that require leadership for the organization of labor and policing of participants during the event. This presentation aims to address the issue of identifying leadership, or enhanced status, in archaeological assemblages through a combination of faunal and spatial analyses. The Eden Farson site, a communal pronghorn kill site in southwest Wyoming, provides an opportunity to address implications of leadership an otherwise egalitarian society. In the analysis of the estimated 175 pronghorn dispersed among the 10 households at Eden Farson, evidence suggests that is possible to identify skewness, or preferential treatment, in the distribution of the proceeds from this communal hunting episode.

O'Brien, Michael [217] see Collard, Mark

Ochoa, Patricia [248] see Velazquez, Adrian

O'Connell, James [2] see Codding, Brian

O'Connor, Sue [7] see Bulbeck, David

O'Connor, John (University of Hawaii-Manoa) [27] Fishhook Variability in East Polynesia
The colonization of the eastern Pacific islands has long been of interest to archaeologists given its relatively recent history and remoteness. The geographical isolation exemplified by the archipelagos of East Polynesia provides an ideal situation for the study of cultural development among descendants of an initial ancestral population. My study examines proximal endpoint line-attachment-devices (LAD) in prehistoric fishhook assemblages from East Polynesia to address questions of early colonization, migrations, and interaction. I build relational networks using artifact classes and compare these artifact trail networks to the geographical distributions of the analyzed assemblages. The relation of stylistic character states among assemblages maps cultural transmission lineages. From this analysis I explore the degree of cultural relatedness among various East Polynesian fishhook classes, their sharing in space and time, and consider some of the implications of colonization order and human migrations in East Polynesia. Sample size differences limit the analytic potential of this study, but point to areas for future research.

O’Connor, Sue (The Australian National University)
[167] Pleistocene Maritime Societies in Island Southeast Asia

Some time prior to 50,000 years ago modern humans left mainland Asia (Sunda) and began the first of a series of maritime voyages that was to culminate in the colonization of Sahul (Australia and New Guinea) by 50,000 B.P. The maritime technology implied by this accomplishment has raised many questions which cannot be addressed by the earliest sites in Sahul. Recent excavations in caves on the north coast of East Timor have recovered the world’s oldest fish hooks together with an assemblage of fish bones, including many from pelagic species like tuna. This evidence dates back to 42,000 B.P. and shows that the people living in the islands to the north of Australia either arrived with, or rapidly acquired, considerable maritime skills and equipment. It seems likely that it was these skills that made the colonization of Australia possible at this early date. This paper explores the technological implications of the marine faunal assemblage and the role of the shell and osseous artifacts in the procurement of these resources.

Oda, Hirotaka [222] see Izuho, Masami

ODay, Karen (University of Wisconsin-Eau Claire)
[19] Inferring Identity of Gran Coclé Anthropomorphic Effigy Vessels ca. 550-1150 C.E.

Polychrome ceramics form a major corpus of visual expression by the societies of the Gran Coclé region. Accordingly, consistent scholarly attention examines a wide range of issues. The region’s ceramic chronology is firm. Spiritual, social, political, and economic roles of the vessels have been described. Ample interpretations of the zoomorphic and geometric iconography exist. Among this research, one data source is relatively overlooked: anthropomorphic effigy vessels. Admittedly, they comprise a smaller database than the thousands of plates, bowls, and jars and, in addition, the zoomorphic effigies are also more numerous. On the plus side, recent studies of effigies and figurines demonstrate that they form productive and unique data sets. As such, the effigy vessels potentially complement the excavated burials, which stand as the main data about the people of Gran Coclé. This presentation focuses discussion on the effigies’ identity markers. A preliminary insight about gender follows: it is possible that the anthropomorphic effigy vessels are the first evidence of gender variance in Gran Coclé.

Odegaard, Nancy [139] see Santarelli, Brunella

Odess, Daniel (University of Alaska Museum)
[168] Discussant

O’Donnabhain, Barra (University College Cork, Ireland)
[209] Americans Abroad: Providing Meaningful Archaeological and Cultural Experiences in an English-Speaking Destination

Ireland has for long been a popular destination for US-based students seeking to study overseas. However, as the US government and institutions of higher education are pushing students to participate in programmes at non-traditional destinations, is the Irish experience still relevant or valid? This paper explores the reasons why Ireland became an attractive destination in the first place and critically evaluates the position of ‘traditional’ locations and their ability to compete with non-traditional venues and to recruit US students in the future. It will present the type of research experiences developed countries may offer to field school students and explore whether such experiences are sufficiently ‘exotic’. It will examine the place of archaeology in general in the context of the desired outcome and intended goals of the Simon Study Abroad Act and will suggest that archaeology itself is non-traditional and offers students meaningful and transformative cultural experiences. In this context, the research location itself is of secondary relevance.

ODriscoll, Corey (University of Queensland) and Jessica Thompson (University of Queensland)
[263] Zooarchaeological Evidence for Projectile Technology in the African Middle Stone Age

The ability of Homo sapiens to kill prey at a distance is arguably one of the catalysts for our current ecological dominance. Despite the importance of projectile technology in human hunting strategies, there is no consensus on its origins. Many researchers have suggested it lies in the African Middle Stone Age (MSA) or Middle Paleolithic. However, evidence from the MSA is dependent on analysis of the stone points themselves. There is a growing body of research focusing on zooarchaeological projectile impact marks in European assemblages; however, comparable investigations are currently lacking for the MSA. The criteria for identifying projectile impact marks on bone are not standardized, and no large experimental studies exist that examine marks left by MSA points. Therefore, a clear analytical framework must be created through experimental samples. Using replica MSA prepared core points and Howiesons Poort segments – present during the southern African MSA – this paper defines the various forms of marks on bone caused by stone artifacts commonly considered to have been used as projectiles at this time. When applied to the archaeological record, these results suggest that the earliest direct evidence for hunting practices in southern African MSA deposits dates to ~90 ka.

Oechsner, Amy (U.S. Bureau of Land Management)
[91] Challenges and Strategies: Managing the Old Spanish National Historic Trail in California

In 1829, New Mexican trader Antonio Armijo blazed the Old Spanish Trail: first overland conduit of immigration and commerce to pierce Alta California and tie it to the east. Congress designated this significant byway a National Historic Trail in 2002, and assigned the Bureau of Land Management and National Park Service joint managers. In California, where the Trail crosses prodigious swaths of BLM land, BLM cultural resource professionals tackle a number of management challenges. Official maps of the Trail corridor are inaccurate, and extant trace is under-surveyed, the history, definition, and importance of the Trail are obscure, BLM - Old Spanish Trail Association partnerships are unorganized and underutilized, and burgeoning renewable energy projects consume limited fiscal resources and cultural resource staff hours. I explore these challenges and define successful strategies the California BLM is using to mitigate them. Regular
interagency and extra-agency application of these strategies will facilitate improved documentation, preservation, and promotion of this nationally significant cultural resource.

Oetelaar, Gerald (University of Calgary) and Alwynne Beaudoin (Royal Alberta Museum, Edmonton, Alberta) [131]  
The Days of the Dry Snow: Short and Long Term Cultural Adaptations to the Mazama Ash Fall on the Northern Plains
The climactic eruption of Mount Mazama spread a thick layer of volcanic ash over 1,000,000 km² of western North America. The ash accumulation had a devastating impact on the continental flora and fauna which exposed a number of vulnerabilities in the social and subsistence strategies of the resident population. In particular, the long-term unpredictability in the availability of subsistence resources culminated in the depletion of the stored food supplies and forced the resident groups to seek the assistance of their relations living beyond the limits of the ash fall. As a result of this population displacement, the former occupants of the Northern Plains acquired new food preparation techniques and strategies for the long term storage of essential resources. To avoid similar disasters in the future, the interacting groups also expanded their social safety nets to ensure access to a large aggregate of people well beyond the limits of their respective homelands. Using data recovered from deeply stratified archaeological sites occupied before and after the ash fall, I will explore the vulnerabilities of pre-eruption societies through an analysis of the social and technological changes adopted by the hunter-gatherer groups after this unusual natural disaster.

Oetelaar, Gerald [131] see Beaudoin, Alwynne

Offenbecker, Adrianne (University of Calgary) and D. Troy Case (North Carolina State University) [41]  
Contact in the Northern Great Plains: An Assessment of Biological Stress among the Protohistoric Arikara
The arrival of Europeans in North America represents a pivotal transition that altered the biocultural landscape of a continent. While many studies have generalized the contact experience as overwhelmingly deleterious, others have suggested that interactions between Old and New World populations may have been initially favorable in some places, including the Great Plains of the United States. The primary objective of our research is to examine temporal trends in the health status of Arikara villagers that may be related to the initial arrival of European explorers and fur traders in the Upper Missouri Valley. We accomplish this by comparing biological stress levels among precontact and postcontact Arikara populations, as indicated by the presence of enamel hypoplasia, porotic hyperostosis, and cribra orbitalia. Statistical analysis reveals significantly higher levels of systemic stress in the postcontact population, particularly among juveniles. We discuss these results in the context of varying subsistence strategies, dietary intake, and disease loads and highlight the importance of utilizing both juvenile and adult remains in health analyses of past populations.

Ogburn, Dennis (University of North Carolina at Charlotte) [132]  
New Perspectives on Prehispanic Empires in the Andes
Taking a cross-cultural perspective, observations are offered for understanding imperialism in the prehispanic Andes. Empires are mechanisms to benefit elites and aspiring elites, and they essentially comprise a set of elite relationships. While empires can expand quickly, creating an enduring imperial state requires establishing strong relationships between center and provincial elites at various levels. This entails leveraging elite agency and promulgating a shared political ideology. Consolidating these relationships establishes elite participation at local levels and those elites come to participate to an extent in a shared imperial elite identity, which is expressed through an iconography of power and other material means. Failure to consolidate these relationships at the local level can result in different imperial trajectories that may not be readily recognized in the archaeological record. One such trajectory is suggested as a model to potentially explain the key problem of shared elite ideology in the Middle Horizon, which has been a long-standing problem in Andean archaeology.

O'Grady, Patrick [128] see Nelson, Amy

Oh, Chang Seok [22] see Kim, Myeung Ju

Oh, Kang Won (The Academy of Korean Studies) and Kang Won Oh (The Academy of Korean Studies) [289]  
Changes in Interaction Spheres among Complex Societies in Liaoning during the Bronze and Early Iron Ages (Twelfth to Third Centuries B.C.)
Material cultures in Liaoning went through four dramatic changes in the 12th, 8th, 6th, and 3rd centuries B.C. Such cultural shifts were closely interwoven with increasing social complexity and reforming interactions between centers and peripheries in Liaoning. For example, the spread of the Weiyingzi-type cultural assemblage resulted from the formation of complex societies in Kaouzuo region in the 12th century. In the 8th century, rising complex societies influenced the network of the Shiertaiyingzi material culture in Liaoxi, west part of Liaoning. Two cultural traditions of the Nandonggou in Kaouzuo and the Zhengjiawazi in Shenyang were centers of trading relations in Liaoning in the 6th century B.C. Consequence of widening interactions is the formation of similar material cultures throughout Liaoning by the 6th century B.C. Yan state became a center of unifying cultural tradition in Liaoning by the 5th century B.C. Such unifying Liaoning culture influenced the material cultures in both northeast China and northwest Korea. The Early Iron Age sites in northwest Korea dating to the 3rd century B.C. showed intensifying cultural interactions with Yan, eastern Liaoning, and central Jilin.

Ohrnersorgen, Michael [279] see Glascock, Michael

Oka, Rahul (University of Notre Dame) and Dianna Bartone (University of Notre Dame) [100]  
Reclaiming Poverty for Anthropology: How Archaeology Can Form the Basis for Understanding the Evolution, Endurance, and Ubiquity of Global Poverty
Two processes seem to characterize the relationship between anthropology and poverty. First, anthropology has rejected ‘poverty’ and turned towards nuanced discussions of ‘structural violence’ and ‘inequality.’ Second, anthropology has become increasingly irrelevant in public policy decisions on structural violence, inequality, or poverty. Other social and health sciences continue to investigate ‘poverty’ as a debilitating human condition inextricable from contemporary global political economies even as they acknowledge the issues in defining and measuring it. In this paper, given the almost 10,000 years of data on inequality and complexity, we argue that anthropology, especially archaeology, have much to offer the ongoing studies on poverty and policies aimed at its alleviation. Accordingly, we call for anthropologists to reclaim ‘poverty.’ We offer summary, debate, and cautionary consensus on the issues of defining and measuring poverty encountered in economics, political science, psychology, sociology, and the health sciences. We highlight recent economic analyses showing the correlation between poverty, credit, and material accumulation. We posit that these studies will enable archaeological anthropology to take the initiative in understanding poverty as larger human concern that predates our contemporary economy and to confront the room elephant: is poverty a necessary outcome of social complexity?
Okada, Mayumi

[141] The Current Situation of Archaeological Heritage and Tourism in the World Natural Heritage Shiretoko

In July 2005, Shiretoko, a peninsula of well-preserved wilderness of the northern Hokkaido, was registered as a World Natural Heritage site. Although Shiretoko contains rich archaeological resources from the dynamic Okhotsk culture and illustrates connections with Ainu descendant communities, the Japanese government has not recognized the important of indigenous cultural heritage in local Shiretoko tourism development. Few historical and cultural traces of Ainu people are evident in one of Hokkaido’s most popular tourism destinations. The Indigenous Heritage and Tourism Working Group (IHTWG) has sponsored temporary exhibits of archaeological remains found from sites located in Shiretoko (such as the Chashikot B site) since 2008. To clarify current understandings of local archaeological heritage in Shiretoko tourism, IHTWG administered questionnaires to exhibit visitors in 2009 and 2010. Using questionnaire results, this paper discusses (1) how people recognize archaeological sites located in Shiretoko, (2) what kind of impression the exhibit makes on visitors; (3) what archaeology can do for promoting multi-vocal perspectives of history and characteristics in Shiretoko.

Okamoto, Kamijyou [66] see Wang, Qiang

Okrutny, Elizabeth [251] see Burch, Ashley

Okumura, Mercedes (University of Sao Paulo, Brazil) and Astoflo Araujo (University of Sao Paulo, Brazil)


Regardless the great number of archaeological sites from Southern Brazil presenting bifacial points dated from the Pleistocene-Holocene boundary, not many detailed studies on their morphological evolution have been done so far. We present a morphometric study of projectile points excavated from the site Garivaldino Rodrigues (RS-TQ-58), located on the state of Rio Grande do Sul. Garivaldino presents a range of dates from 11.800 to 7.400 cal B.P. Ninety-four points from four stratigraphic levels of that site were analyzed. This research considered the variability of linear measurements and the geometric morphometric analyses have failed to reveal any important temporal changes. However, the univariate analyses of linear measurements have revealed an increase through time in the variation of all measurements. It has also been observed an increase in the types of raw material used to manufacture such points through time. The absence of change in the morphology of points has been observed in other cases in South America (Rick 1980; Borrero 1989), usually related to small groups and low levels of cultural innovation. On the other hand, the increase in the variability of linear measurements and the types of raw material might suggest an increase in population size and copying errors.

Olano, Jorge [214] see Sakai, Masato

O’Leary, Beth (New Mexico State University)

[13] To Boldly Go Where No Man Has Gone before: Approaches in Space Archaeology and Heritage

My paper will provide a current overview of the field of Space Archaeology and Heritage from its origins (2000 to 2012). I will explore the underlying theoretical framework of space archaeology, which not only studies the relationships between material culture and human behavior, but embraces the totality of human experience in that it can be studied in all times and in all places it exists. Space archaeologists can study both the past and present and make substantive contributions to studies of human behavior that other disciplines cannot. The field eliminates spatial boundaries. With the advent of space exploration (ca. 50 B.P.) an exoatmospheric archaeological record was created and is increasing exponentially. The cultural landscape of space includes both sites and objects on and off Earth; it is necessary to evaluate the significance of the latter and treat them as important objects and places worthy of legitimate archaeological inquiry. A broad view of the diversity of foci will be explored including technology, life history, how objects construct their subject, popular culture, and the advent of space robotic “culture.” My paper will investigate the routes for preservation, both national and international, under the increasing prospect of those objects and places being destroyed.

O’Leary, Owen (JPAC-CIL)

[251] The History of the Joint POW/MIA Accounting Command and America’s Efforts to Recover Its Fallen Service Members

The United States government has been actively engaged in the recovery, repatriation, and identification of its military personnel who have died on the field of battle for over 170 years. This paper will discuss how those efforts began, evolved over time, and were shaped by lessons learned from each of the major wars of the 20th century. This will include detailing the creation of specific organizations for the task, adoption and incorporation of anthropological methods and techniques, and the invention of concurrent return. Particular emphasis will be paid to the development of the modern efforts to account for the missing servicemen since the Vietnam War and how the various iterations of organizations have led to the present day Joint POW/MIA Accounting Command. This contextual background will establish the groundwork for understanding the unique and challenging task that JPAC currently undertakes.

O’Leary, Owen [251] see To, Denise

Olenick, Carly Evelyn [149] see Jones, Terrah

Olguin, Ivan

[114] Los contextos arqueológicos de las tumbas de Mitla.

Mitla es bien conocido por la compleja y detallada arquitectura de sus palacios y recintos funerarios, producto de una larga tradición cultural que alcanzó su más refinada expresión hacia el periodo postclásico. Sin embargo, diversos investigadores se han interesado por estudiar este sitio, en el que se evidencia el alto valor social de la concepción de la muerte y las tradiciones funerarias tanto en época prehispánica como en el presente, son insuficientes los trabajos que se han enfocado de manera general en los contextos arqueológicos hallados en sus tumbas, dentro del área urbana del asentamiento prehispánico. Tomando en cuenta la alteración que estos contextos han sufrido al paso del tiempo debido a la continuidad ocupacional, y teniendo en mente la incertidumbre en torno al origen cultural de sus contenidos, esta ponencia pretende retomar la interpretación arqueológica de estos contextos funerarios en busca de esclarecer su origen y significado.

Ollé, Andreu [98] see Evans, Adrian

Ollivier, Morgane (ENS Lyon / IGFL), Christophe Hitte (CNRS / IGDR), Anne Tresset (CNRS / MNHN), Jean-Denis Vigne (CNRS / MNHN) and Hanni Catherine (CNRS / IGFL)

[20] Phenotypic Variations in Ancient Dogs: A
The large phenotypic and genetic diversity of present-day dog populations suggests that their founders came from wide and varied wolf populations. Nevertheless, for three hundred years, men have operated intense artificial selection erasing past diversity. As a result, little is known about phenotypes of ancient dogs, wolves or of the early effects of domestication at the genetic and phenotypic levels on primitive dogs. Paleogenetic analysis of ancient wolves and dogs’ specimens enables us to understand the history of genes responsible for phenotypic changes, and infer the history of domesticated phenotypes. As genomic information is available for modern dogs (one genome of boxer, annotated sequences, SNPs...), there is easy access to information on specific genomic regions related to phenotypic traits susceptible to change between wolves and dogs due to the domestication process. We studied specific SNPs on several genes and QTL regions related to phenotypic variation (coat color, size...). This genotyping of ancient samples, allowed us to link phenotypic information to genomic variations and clarify the genetic mechanisms that have been underlying evolutionary processes and adaptations during the domestication of dog.

Olsen, Karyn (Western University), Christine White (Western University), Fred Longstaffe (Western University), Kristin von Heyking (Ludwig Maximilians University Munich) and George McGlynn (Munich State Collection for Anthropology and Palaeoanatomy) [79]

The Effects of Trauma and Infection on Intra-Tissue Carbon and Nitrogen Isotopic Variability of Bone Collagen

Isotopic (δ13C, δ15N) variability in human tissues is regularly used to reconstruct diet with little knowledge of how much it might be affected by pathological conditions. Here, we address the effects of various pathways on the carbon- and nitrogen-isotope compositions of collagen. Individuals who had either experienced recent bone fractures (evident by an incompletely remodeled callus) or active and systemic bone infection (osteomyelitis) were sampled from a Medieval period poorthouse cemetery in Regensburg, Germany, and a modern/historic Swiss anatomy collection. Fracture calluses or osteomyelitic lesions were sampled along with unaffected areas of bone from the same individuals. Both traumatic and infectious lesions had higher δ15N values than the unaffected bone, which likely reflects negative nitrogen balances associated with increased muscle protein catabolism and urinary nitrogen excretion. The osteomyelitic lesions also had higher δ13C values than those of unaffected bone. This difference likely reflects the changes in carbohydrate metabolism that accompany infection-induced anorexia or the loss of appetite associated with prolonged infection. Given that trauma and infection can greatly disrupt normal body metabolism, the isotopic composition of collagen formed during serious periods of illness is unreliable for dietary reconstruction.

Olsen, John W. [222] see Gillam, Christopher

Olson, Kyle [157] see Thornton, Christopher

Olson, Greg (Mercyhurst University) [193]

Human Remains Recovery in a Fatal Fire Setting Using Archaeological Methodology

There is a natural tendency for those involved in fire settings to become overwhelmed simply by the magnitude and destruction of the scene itself. One can easily become overpowered at scenes where there is large loss, and the path the investigator must take may be obscured by the scene. Fire investigations are often complex and difficult to interpret at first blush. Because of the potential for the fire investigator to become distracted, one must develop an analytical and systematic approach to scene investigations. It is expected that fire investigators with experience and training in archaeological methods will successfully meet the rigorous test of the scientific method that is being emphasized in fire investigations. To date, the resulting recovery analysis has proven overwhelmingly that the application of archaeological methods at these types of scenes both supports and authenticates the utilization of these methods. After attending this presentation, attendees will understand the value of applying archaeological recovery methods at fatal fire scenes not only to maximize the amount of human remains recovered but also the associated artifacts surrounding the death.

Olson, Brandon (Boston University) and Ann Killebrew (The Pennsylvania State University) [247]

New Directions in Three-Dimensional Recording in Archaeology

From initial planning to final analysis, archaeology, by its very nature, is a destructive discipline consisting of a wide array of approaches, theories, and methods. The archaeologist, whether conducting a pedestrian survey across a vast landscape or excavating a small singe-phase site, is obliged to record and present their results in a systematic and meaningful manner. While field recording methods deployed to identify, characterize, and parse collected spatial data have taken many forms, most represent two-dimensional platforms of an invariably three-dimensional (3D) subject. With recent breakthroughs in 3D technology, it is now possible for the archaeologist to quickly generate Unpivably accurate, photorealistic 3D model of any target of interest ranging in size from an individual artifact to a landscape with a series of digital photographs using PhotoScan, a commercially available software suite developed by Agisoft LLC. With two years of rigorous field testing completed by the Tel Akko Total Archaeology Project, it is clear that full scale implementation of PhotoScan in archaeology is possible and will ultimately facilitate unprecedented accuracy in field recording, photorealistic digital heritage management, and a new exciting outlet for the dissemination of archaeological data at multiple levels of interest. [247]

Chair

Olszewski, Deborah, Maysoon al-Nahar (Department of Antiquities of Jordan), Jason Cooper (AMEC Earth & Environmental), Natalie Munro (Department of Anthropology, University of Connecticut) and Bilal Khrisat (Department of Conservation Science, Hashemite University) [201]

The Early Epipaleolithic at KPS-75, Western Highlands of Jordan

Test excavations in 2009 at the Early Epipaleolithic (Nebeckian) rockshelter site of KPS-75 on the Kerak Plateau, about 12 km north of the Wadi al-Hasa, in the western highlands of Jordan, yielded substantial lithic assemblages, as well as faunal and phytolith data sets. Geoarchaeological investigations suggest that the site was occupied when standing water, perhaps seasonal, was within 1 km south of the rockshelter. Preliminary interpretation of microliths suggests two occupation phases. The earliest has narrow, nongeometric forms (double-arched) that elsewhere are dated between about 25,000 to 21,000 calibrated B.P. The later occupation contains numerous Qalkhan points in various phases of manufacture and also is associated with microgravettes, as well as double-arched pieces and narrow geometric forms. This later phase is undated, but likely falls between about 21,000 to 18,000 cal B.P. The large quantity of Qalkhan points is unusual, as most Nebekian sites yield only a few of these distinctive forms. The faunal assemblage is dominated by high-ranked, grassland species, such as gazelle, tortoise, wild ass, and aurochs, suggesting that residents were not long-term occupants of the site, but exploited local resources, potentially on a seasonal basis, before moving on. [201]

Chair

Omay, Barbara A. [38] see Rhodes, Jill
Omay, Barbara (Drew University), Jill Rhodes (Department of Anthropology, Drew University) and Joseph Mountjoy (Universidad de Guadalajara, Centro Universitario de la Costa) [38]

Lessons in Taphonomy: An SEM Analysis of Suspect Cut-Marks from the Middle and Late Formative Periods of West Mexico

The funerary custom typical to the Middle (800 B.C.) and Late Formative periods (200 B.C.-200 A.D.) of West Mexico is burial of articulated and disarticulated remains in either a pit or shaft and chamber tomb. The varying states of articulation indicate whatever minimum, the curation of remains prior to interment. Suspect cut-marks were identified in a number of burials leading to the question of excarnation, suggesting a more complex peri-mortem ritual than has previously been identified in this region. The cut-marks were found along the distal aspect of the ribs, various long bones, and the cranium in both adult and infant remains. They were identified at a number of sites across both time periods. Casts were taken in the field and cut-marks of forensic origin were included in the study for comparison. All casts were similarly mounted and processed for examination under a Scanning Electron Microscope. Magnification was set at 100 µm. Comparison was made across specimens and the end result was, at least in these specimens, nonconformity with the morphological analysis in solving questions of cultural behavior vs. taphonomic processes.

O'Meara, Joanne [51] see MacDonald, Brandi Lee

Omori, Kazutaka [214] see Lopez, Larry

O'Neill, Brian [137] In the Shadow of Mt. Mazama: Early Holocene Record in the Upper Umpqua River Basin, Southwest Oregon

Early Holocene archaeological sites are generally rare in the interior valleys of western Oregon and researchers often rely on radiocarbon dating to confirm their antiquity. In the upper Umpqua and Rogue river basins, the catastrophic eruption of Mt. Mazama 7600 years ago buried the landscape under a thick deposit of volcanic ash, obscuring evidence of past human occupation. Since 1981, investigations have uncovered an increasing number of archaeological sites beneath this ash. This paper focuses on what archaeologists have learned of the pre-Mazama (pre-7600) occupation of the upper drainage, placing these findings in regiona perspective.

Opitz, Rachel, Nicola Terrenato (University of Michigan), Anna Gallone (Gabii Project) and Marcello Mogetta (University of Michigan) [105] Translating Digital Practice: From Collection to Interpretation

Digital data comes into play at three key stages in an archaeological project: data collection, data exploration/analysis/interpretation, and publication. A lot of attention has been paid to digital data collection methods— including the use of tablets in the field, databases, GIS and 3D modeling methods, digital photography, and geophysical survey. As projects heavily invested in digital data collection make their way to the analysis, interpretation and publication stages, a new set of challenges is appearing. The translation of digital data collection practices to interpretation and dissemination practices is not trivial, and the problems involved in manipulating, analyzing, interpreting, and creating convincing explanations and compelling narratives using digital data are substantial. We look at it, we interrogate it as best we can, but we’re not confident enough in our practice in these areas to present the analytical and interpretive process that links the digital data to the conclusions. In this contribution we focus on the analysis and interpretation of digital data collected through the Gabii Project, a significant excavation in Italy—leveraging the many tools for data exploration and visualization available. In particular we consider the role of 3D data and modeling in the interpretation and analysis.

Ordoñez, Maria, Ronald Beckett (Bioanthropology Research Institute-Quinnipiac University) and Gerald Conlogue (Bioanthropology Research Institute-Quinnipiac University) [1] Forensic Anthropology and Paleoimaging: An Application of Traditional and Non-intrusive Techniques on Two Museum Collections in Quito

This presentation is centered around the application of Forensic Anthropology and Radiology techniques to the study of archaeological human remains. We use the cases of the osteological collections at the Jactio Jijon y Caamaño Museum in Quito to illustrate how museum collections can be studied by using an approach that combines traditional techniques in forensic anthropology (direct handling of the remains) with, in more recent
studies, non-intrusive techniques taken from radiology termed paleo-imaging (the use of X-Ray imaging, CT scanning and endoscopy, for example). It also emphasizes how the use of a multidisciplinary focus that includes ethno-historical recollections, physical anthropology, forensic anthropology and radiological imaging allows the researcher to not only construct biological profiles and a pathology reports, but contextualize the data collected from osteological remains and complement other historical and archaeological data.

Orfeci, Guiseppe [214] see Lopez, Larry

O'Rourke, Dennis H. [71] see Beck, R

O'Rourke, Laura (RCUH)

[126] An Olmec-Style Cylinder Seal from Yarumela
The Yarumela Archaeological Project 2008 field season focused on Early and Middle Formative household contexts as a first step in understanding the development of social complexity in this early village. Yarumela is one of the earliest sites with monumental architecture, with structures dating to around 800 B.C. One of the most interesting finds of the season was the discovery of an Olmec-style clay cylinder seal. The style of the iconography indicates that the seal was created sometime around 1000 B.C. The presence of an Olmec-style artifact in an early village in central Honduras suggests that the people who lived in this place were tied into the broader patterns of social change in Early Formative Mesoamerica. In this paper I suggest that this special artifact is representative of important social changes in Yarumela at the end of the Early Formative, changes reflected in the subsequent construction of monumental architecture. This paper also discusses the importance of the seal as a powerful medium of communication and possibly as a means of social control in early complex societies.

[126]
Chair

Orozco, Joseph (CSULA) and Joseph Orozco (Graduate student-California State University, Los)

[109] Faunal Assemblage of Midnight Terror Cave
Over the course of three seasons from 2008-2010, California State University, Los Angeles conducted an intensive surface survey of Midnight Terror Cave (MTC). These investigations documented extensive modification of the cave to create broad, level areas suitable for public ritual. The project also recovered extensive human skeletal material thought to be the remains of sacrificial victims. Further evidence of ritual is derived from the type of non-native faunal remains found in MTC’s interior. During the course of the survey 682 animal bones were recovered and analyzed at Cal State L.A. The assemblage was found to be unusual in being very heavy in fish and bird bones. This paper analyzes the remains in terms of being a ritual assemblage and notes how the MTC assemblage differs from other cave assemblages.

Orozco, Joseph [109] see Orozco, Joseph

Orsini, Celia (Université Paris 1 Panthéon-Sorbonne, France)

[55] Recycled Traditions and Innovations in Northeast Britain
This paper presents the results of recent dissertation research on the archaeological evidence for cultural interactions in northeast England and southeast Scotland in the early medieval period. It explores how populations used the landscape to create and maintain their identity and territories in this time of change, a period in which northern Britain saw the fall of the Roman Empire, conversion to Christianity and the emergence of centralized kingdoms. By examining a selection of early medieval burial sites, it is argued that the Tyne and Forth region was a zone of multiple contacts between the 5th and 6th centuries. A comparison of funeral practices will be undertaken to demonstrate the impact of socio-political events and the varied local responses they provoked.

Ost, Michael [131] see Elson, Mark

Ortega, Allan (Allan Ortega)

[46] Vulnerable Groups among Postclassic Maya from East Coast of Peninsula of Yucatan: El Meco and El Rey Case Studies
After the Maya Fall, circa A.D. 1441, the Yucatec peninsular Maya settlements, over all the east coast, formed autonomous groups by political entities that struggled among themselves for supplies of the region. From these entities, Ecab was the most important, and El Meco and El Rey were from this political entity. It is well known the differential access to food sources by gender and age of each individual in the Maya society; however, this varies from locality to locality, and therefore impacts the health status of each person. The goal of this presentation is to show how access to food, evaluated by osteopathtological indicators analyzed in both skeletal collections from El Meco and El Rey, can be measured by age and sex and show the social inequities in Postclassic times.

Ortégón, David [144] see Dunning, Nicholas

Ortiz, Agustin [166] see Carballó, David

Ortiz Díaz, Edith [253] see Cockrell, Bryan

Ortmann, Scott [16] see Grundtisch, Katie

Ortmann, Scott (SFI/Crow Canyon)

A key element of an anthropology of the human experience is understanding relationships between material conditions and the ways people understood them. This is important because social action is mediated through discourse and politics more so than factual understanding. In this paper, I summarize socio-natural conditions faced by Mesa Verde people shortly before the famous episode of collapse and migration to the northern Rio Grande, and use Tewa oral tradition and the pattern of change in material culture associated with migration as barometers for understanding how the people who lived through this episode interpreted the situation they faced and the social transformation they sought to achieve. This example illustrates the challenges involved in understanding social transformation in cases where fewer lines of evidence are available.

Ortmann, Anthony (Murray State University)

[284] Investigating the Function of an Archaic Period Earthwork through Microartifact Analysis
The functions of Archaic Period mounds in the Lower Mississippi Valley are poorly understood. Poverty Point’s Mound C provides a unique opportunity to examine the function of one late Archaic mound. Recent excavations in Mound C revealed a complex construction sequence consisting of numerous, thin, flat-topped construction stages. The presence of features on the surfaces of some stages, coupled with micromorphological evidence for trampling suggests these mound stage summits were used for cultural activities. The nearly complete absence of macroartifacts, however, makes it difficult to discern the types of activities that were undertaken on these surfaces. Microartifacts recovered from these construction platforms provide an alternative perspective on
the nature of activities associated with this earthwork. The analysis of microartifacts suggests Mound C was used for distinctive, possibly ritual activities. [284] Chair

Ortmann, Anthony [284] see Roe, Lori

Osborn, Alan (University of Nebraska-Omaha) [130] Poisinning Proboscideans: An Alternative Strategy for Hunting Mammoths and Mastodons during the Younger Dryas

Recent studies suggest that many mammoth and mastodon kills throughout North America occurred during the Younger Dryas Cold Event (YDCE; 12,900-11,600 cal yrs B.P.). Traditionally, archaeologists have assumed that proboscideans were killed by means of a direct encounter hunting strategy employing thrusting spears or atlatl darts tipped with chipped stone points. Given this strategy, the prey animals are assumed to have died as a result of significant blood loss. This paper explores the feasibility of a PaleoIndian hunting strategy employing weapons that delivered lethal injections of plant alkaloid poisons. Poison hunting, then, would have important implications for research regarding proboscidean population dynamics, alternative forms of weapon technology, and revised methods for kill site investigation. Finally, we may discover that PaleoIndians were forced to adopt foraging strategies that deviated significantly from "optimal" patterns.

Osborne, Daniel [212] see Bleed, Peter

Oskam, Charlotte (Ancient DNA Laboratory, School of Vet & Life Sciences, Murdoch University, Perth), Morten Allentoft (Ancient DNA Laboratory, Murdoch University, Perth), Richard Holdaway (Palaeoec Research Ltd and University of Canterbury), Chris Jacomb (South Pacific Archaeological Research, and Univers) and Michael Bunce (Ancient DNA Laboratory, Murdoch University, Perth) [263] Biomolecules Preserved in Eggshell Provides Insights into Archaeology

Due to excellent biomolecule preservation, fossil eggshells have been widely used for reconstructing palaeoecology and palaeoedists, and as an exceptional medium for a variety of dating methods. Here we show that ancient DNA (aDNA) is also well preserved within the calcite matrix of fossil eggshells excavated from Madagascar (elephant bird) and Australia (emu) - with the record so far being 19,000-year-old DNA characterized from emu eggshell at Tunnel Cave, WA. Our data shows, when careful attention is paid to methodology, fossil eggshell contains a rich source of 'pure' ancient DNA and that eggshell represents a previously unrecognized ancient DNA substrate. We set out to investigate the application of aDNA and stable isotopes of eggshell from archaeological contexts. New Zealand's flightless birds and their eggs were consumed by the early Polynesian inhabitants following first contact ~700 years ago. Attributing eggshell fragments, from archaeological middens, to one of nine moa species can be problematic. However, the characterization of mitochondrial DNA and microsatellites from ~250 eggshells provided definitive species identifications to determine which moa were available for Polynesians to hunt in each area. As well as compiling accurate zooarchaeological assemblages, this approach provides new insights into moa biology, and extinction processes.

Osorpurev, Tserennadmid [31] Discussant

Ostapowicz, Joanna [259] The Sculptural Legacy of the Jamaican Taino

Jamaica’s rich artistic heritage includes a small group of Taino wooden sculptures (ca. A.D. 1200-1600) that have survived centuries in dry caves, placed there for ceremonies or for safekeeping. They document an innovative carving style, distinct to that seen on the neighboring islands of Hispaniola (Dominican Republic/Haiti), Cuba and Puerto Rico, yet sharing broad parallels. This artistic legacy has much to contribute to our understanding of Taino ritual, belief and aesthetics. The paper will provide an overview of some of the recent directions in their study, including historiography, iconography, chronologies and material studies (the latter through radiocarbon dating, wood ID, GC/MS and stable isotope analysis). These sculptures are complex ‘entities’, with equally complex histories and stories to convey.

Osterholtz, Anna (University of Nevada Las Vegas) [101] Warrior, Soldier, Big Man: Warrior Ethos, Identity Formation and the Negotiation of Social Roles in Multicultural Settings

While a sense of identity is what defines us, in reality we each have a multitude of identities that manifest based on social or cultural context. The role of the warrior is complex, as it often requires the temporary or long-term suppression of other roles while bringing about a greater sense of group solidarity and identity. Soldiers returning from WWII found re-assimilation into society difficult, as their experiences had altered their perceptions. Shared experience and practice, however, created a very cohesive group identity that cut across socio-economic and ethnic lines. Additionally, in multicultural settings military service can act as a leveling mechanism for immigrants coming to a new place (e.g., the conscription of new immigrants during the American Civil War), both in the act of fighting and as a cohesive mechanism after war is over. By understanding the power of the warrior identity or ethos as a mechanism of identity formation and negotiation, this presentation explores the role of warriors in the modern world (e.g., United States, Canada, and Uganda) to better understand archaeological (e.g., Northwest Coast Chiefdoms and Teotihuacan) and ethnohistorical (Northwest Coast, Mexico, and Africa) accounts of warriors in antiquity. [101] Chair

Ostericher, Ian [121] see Stewart, Haeden

O'Sullivan, David [23] see Romanowska, Iza

Otarola-Castillo, Erik [76] see Schoville, Benjamin

Otárola-Castillo, Erik (Harvard University), Emma James (School of Social Science, The University of Queens), Jessica Thompson (School of Social Science, The University of Queens), Jacob Harris (Institute of Human Origins, School of Human Evolution) and Agustina Massigoge (INCUAPA-CONICET, Facultad de Ciencias Sociales, Un) [117] No Longer Just a Pretty Picture: Differentiating between Experimental Bone Surface Modifications Using 3D Morphometric Analysis

Studies of bone-surface marks are crucial to our understanding of the evolution of human subsistence behavior. Over the last several decades, however, identification of bone surface modifications has remained contentious. One historical problem is the lack of consensus over how to identify or differentiate marks from human and non-human actors and effectors. Most investigations rely on morphology to identify cutmarks and their patterning, discriminate these from non-human-behavioral processes, and identify the objects or agents responsible for making the marks. These range from subjective characterization of cutmark morphology by the naked eye to the use of high-powered microscopy such as Scanning Electron Microscopes (SEM). These approaches, however, are difficult to replicate, quantify, and compare. 3D...
geometric morphometrics (GM), under the procrustes paradigm, has demonstrated its ability to discriminate between marks caused by human and non-human agents, while providing quantitative morphological measurements and description. Here we apply 3D GM to quantitatively differentiate mark morphology within a large dataset collected from a wide range of experiments. These include: human and ungulate trampling experiments, crocodile and hyena-ravaged bone assemblages, and butcher cut and percused bone assemblages. Results strengthen statistical confidence in identifications, providing an incipient digital library with which to make quantitative comparisons.

Otero, Francisco [17] see Morales, Pedro

Overfield, Zachary (University of Texas at Arlington) [119] Resurrecting Old Pattonia: Uncovering the Lifeways of a Nineteenth-Century Shipping Port Community

The 19th century was a period of tumultuous change for Texas, the United States, and Mexico. Rebellions, revolutions, civil wars, and national boundary disputes, unfolded dramatically during this era. Although the grand sweep of Texas history is well documented, there are innumerable smaller stories within that narrative that remain unexplored. One such story is the founding, use, and eventual abandonment of Pattonia, a shipping port community on the Angelina River in Nacogdoches County. Founded in 1844, the port at Pattonia connected steamboat shipping routes from Galveston and New Orleans to East Texas until the late 1880s when it was abandoned. I incorporated several different methodological strategies at Pattonia to collect representative samples of material from across the entire community. The collected materials will be used to explore questions of social differentiation, gender, class, race, and economy within a small shipping port community. The relative quality and quantity of the household goods and their distribution across the site along with historical records conveys the nature and degree of social differentiation at this community. Through archaeological and archival analysis this poster will present the social differentiation present on the landscape and how the introduction of industrial capitalism impacted the people of Pattonia.

Owen, Paige (Undergraduate Anthropology Student- ASU) [89] Connectivity and Persistence Internally and Abroad in the Southwest United States and North Mexico

I plan to use the five archaeological case studies of Mimbres, Salt River Hohokam, Salinas, Zuni, and La Quemada for my research. By studying the relationship of diversity of exchanged objects to the persistence of a group I hope to identify whether there is a correlation between the amount of connections a cultural pattern possesses through exchanged objects and to what extent that culture persists. In turn using the diversity of these exchanged objects as possible marker for inequality I hope to answer questions concerning connectivity between the five cases studies and internally within them.

For the purposes of this research persistence of a group will be defined as continued use of an area, traditions, or other distinct markers utilized by a recognized cultural pattern over time.

To answer these questions concerning persistence and inequality I plan to gather archaeological data from various important sites within each case study. The data will be specific to artifacts that are considered possible markers of connections such as turquoise, macaws, shell trumpets, and copper. I then will also use ethnographic data and comparisons to help determine what sort of patterns and connections the data reveals.

Owens, Kim (SWCA) [102] Public Outreach: Striving for Balance while Presenting California Mission Archaeology

The Alameda Corridor East (ACE) San Gabriel Trench Project is a high publicity project with many stakeholders. In particular, the data recovery excavations at the San Gabriel Mission archaeological site occurred in a highly visible area and drew a great deal of public interest. As a part this project, SWCA was asked to provide public outreach to correspond with the archaeological data recovery. SWCA created brochures, posters, and show-and-tell artifacts for hands-on-learning; constructed a large viewing platform for organized tours of the site; and placed a webcam on the site for remote viewing. SWCA archaeologists, native Gabrieleno monitors, and ACE representatives spoke to over 3,000 visitors to the site, including school children, local historical societies, politicians, and the media. In the planning phase, the question of how to present the achievements of the missionaries while appropriately acknowledging the exploitation of local Native Americans presented itself. As archaeologists, we strive to be good stewards and impart an objective interpretation of history based on data while acknowledging any biases. Here we discuss SWCA’s strategy of presenting a balanced view of this controversial history while keeping good relationships with stakeholders.

Ownby, Mary (Desert Archaeology Inc.) and Deborah Huntley (Archaeology Southwest) [139] Production and Exchange of Polychrome Pottery in the Upper Gila and Mimbres Valleys: Results from Neutron Activation and Petrographic Analyses

The appearance of Maverick Mountain Series pottery at 13th century sites in the southern U.S. Southwest has been viewed as a hallmark for the movement of immigrant groups from the north. Made in the Kayenta style with locally available materials, Maverick Mountain Series pottery is believed to have influenced the widespread 14th-15th century Salado Polychrome tradition of southern Arizona and New Mexico. These ceramic wares share a polychrome design scheme and certain technological and design elements. Our NAA and petrographic analysis of over 400 polychrome and plain ware sherds from multiple sites in southeastern Arizona and southwestern New Mexico allows us to demonstrate technological continuity between the Maverick Mountain and Salado traditions. We are also able to build upon
Patty Crown’s influential study of Salado Polychrome production and distribution, demonstrating local production of Salado polychromes at several Upper Gila region sites, as well as some exchange of both Maverick Mountain Series and Salado Polychrome vessels within the Upper Gila and Mimbres valleys. Our study highlights the utility of using multiple ceramic sourcing techniques and diverse statistical approaches to answer archaeological questions, but also acknowledges some of the potential difficulties in using these methods to interpret complex human behaviors.

Pääbo, Svante [222] see Fu, Qiaomei

**Pails, Matthew (University of Arizona)**

*Rio Sonora Community Size: New Interpretations Based on Settlement Pattern Data and Intersite Variation in the Moctezuma Valley*

In this paper I present data from survey and excavations in the Moctezuma Valley of Northwest Mexico, A.D. 1100-1600. The prevailing model for this region is based on exploration era accounts of the 16th century. Previous researchers inferred large-scale polities with consolidated authority over substantial territories, developed trade economies, dense populations, and strong ties to the Casas Grandes region. Preliminary analysis of settlement pattern data, variation in ceramic styles between sites, and differential access to exotic materials do not support the interpretation of territorial polities nor significant large-scale community organization of any kind. The data instead reflect multiple small-scale communities with variable internal organization and strength of exterior ties. It appears previous interpretations may only be applicable to a subset of communities in this region and only if the spatial scale of interpretations is vastly reduced.

Pak, Sunyoung [22] see Jeong, Yangseung

**Palacios F., Patricia**

*Análisis Textil de un entierro humano en el Templo de Omo M10*

En las recientes excavaciones de la temporada 2012 realizadas en el templo Tiwanaçu de Omo en el Valle de Moquagua-Perú, se halló un entierro humano incompleto y disturbado. Ubicado en la plataforma superior hacia la esquina sur-este del templo (Cuarto 27), los restos humanos estaban junto con textiles que consistieron en una camisa completa en un 40 porciento aproximadamente. Este interesante textil de color natural con bordados decorativos en diferentes colores es una muestra cuyo análisis y comparación con otros textiles Tiwanaçu de la zona nos darán evidencia de estatus y afiliación cultural basándose en el material, calidad, técnica y forma de este fragmento de camisa, teniendo en consideración la poca existencia de este tipo de material en el templo.

Palazoglu, Mine [124] see Tushingham, Shannon

**Palka, Joel (University of Illinois-Chicago)**

*Death and Lacandon Maya Settlement Abandonment*

Archaeological investigations encountered abandoned nineteenth-century Lacandon Maya settlements containing large amounts of usable artifacts, such as metal axes, machetes, and knives. The artifact assemblages lend support to the scenario of rapid abandonment and no return to the sites. Through ethnographic analogy, Lacandon may have abandoned these settlements immediately following a death in the household, perhaps from violence. Items belonging to the deceased were never collected because of their perceived connections to the souls of their owners.

Palka, Joel [140] see Kestle, Caleb

**Palomo, Juan Manuel (University of Arizona)**

*Mortuary Treatments at the Ancient Maya Center of Ceibal, Guatemala*

Ceibal is located in the Maya Lowlands, in the southwestern region of Guatemala. Its occupation spanned nearly 2,000 years from the Middle Preclassic to the Terminal Classic period (1,000 B.C.-A.D. 1,000). During six field seasons (2006, 2008-2012), the Ceibal-Petexbatun archaeological project uncovered around 50 burials from various contexts such as open Piazzas and residential groups, displaying different types of mortuary treatments and grave goods. The result of the bioarchaeological analysis provides new information about Ceibal Early Middle Preclassic population, and the continuity and change of mortuary treatments until the Terminal Classic period. In addition to the archaeological data, iconographic information is referenced to reconstruct possible activities on burial practices.

Pan, Yan (School of Life Science, Fudan University)

*Aquatic Ecology, Anthropogenesis, and Resource Production in the Lower Yangzi Region during 10,000-6,000 B.P.*

The Lower Yangzi region is regarded as one of the primary origins of agriculture in the world. Most interests concerning the emergence and development of prehistoric agriculture of the area have been focused on rice. However, the sites of 10,000-6,000 B.P. recovered in the recent decade, including those of Shangshan, Kuahuqiao, Hemudu, and Majiabang cultures, offered us rich data to reconstruct and reinterpret the subsistence economy and human ecology there. More than 140 genus or species of plants are identified in conjunction with abundant animal bones, particularly fish and bird. The data are analyzed in an integral wetland ecology model considering human’s impact. It is demonstrated that the role of rice in subsistence economy used to be over-emphasized. Rice was just one component of the agricultural complex and did not become dominant in diet until 6000 B.P. A variety of important economic plants, such as water caltrop, fox nut, job’s tear, cattail, reed, could be managed or cultivated like rice in the same aquatic habitat. In a broader ecosystem, the wetland could be maintained and regulated by human for multiple resource production.

Panich, Lee M. [119] see Mathwich, Nicole

**Paquette, James [119] see Anderton, John**

**Pardoe, Colin (Research Affiliate, Australian National University)**

*Territoriality and Conflict in Aboriginal Australia*

Given the pace and direction of European colonization, research into Aboriginal Australia has often focused on groups surviving in arid environments rather than on those hunter gatherers who lived in densely populated, rich environments. This paper focuses on the Murray River, the longest river in Australia, and the insights that biological anthropology and burial practices can give to questions of demography, territoriality, boundary maintenance, competition, and conflict. High levels of violence are evident in early and late Holocene skeletal remains from this region as well as in the historical record. Reasons for this will be explored.

Paredes-Rios, Freddy [38] see Maley, Blaine
Pargeter, Justin (Stony Brook University), Karl Hutchings (Department of Sociology & Anthropology, Thompson Rivers University) and Marilize Lombard (University of Johannesburg) [58] Using Velocity-Dependent Micro-Fracture Features to Determine Rates of Impact and Weapon Delivery Systems in an Experimental Hunting Context

Mechanically-projected weapon systems, such as the bow and arrow, are a proxy for human behavioral flexibility, and are likely to have had a long trajectory in the African Stone Age. Identifying these weapon forms in the archaeological record is challenging, because of the near absence of diagnostic organic components. Studies in material sciences and experiments have shown that determining armature loading rates (the physical properties of contact between two materials such as the rate of collision and duration of contact), affecting the fracture of stone weapon inserts, is a potential means of differentiating weapon delivery systems. Velocity dependent micro-fracture features, specifically Wallner lines and fracture wings, are an objective means of determining these loading rates on stone tools used as weapon components. The boundaries of the loading rate regimes established for various weapons categories, however, remain to be independently validated in experimental and blind-test situations. The present study is the first in a series of projects assessing the identification, application, and accuracy of these boundaries, using a combination of hunting experiments and blind-tests. This paper examines the velocity dependent micro-fractures on a series of experimental flint backed tools used as hunting weapon components that were projected at known velocities.

In a world that is growing increasingly conscious of its environment, it is important for us to understand how past societies adapted to environmental stress. More importantly, by studying the ways in which ancient cultures interacted with their environment, we can make steps towards preventing possibly harmful ecological changes in our own future. During the 2011 and 2012 field seasons, archaeobotanical remains were recovered from six cave sites and three rock shelters from the periphery of the Maya site of Pacbitun, located in west central Belize. Soil samples were taken throughout the caves, followed by the placement and excavation of 25 x 25 cm units. All of the soil from these units was subjected to the flotation process in order to separate paleoethnobotanical remains from the heavy fraction. Analysis of these remains is not yet complete, but we believe that a thorough examination will provide us with a better understanding of ancient Maya cave ritual. This data, coupled with environmental data from the region, will inform upon the influence of environmental changes to the ritual process. This research will serve to show how influential environmental factors can be on important cultural features, such as ritual.

Parker, Evan (Tulane University), Stephanie Simms (Boston University) and George Bey III (Millsaps College) [65] Over the Hills and Far Away: Maya Abandonment Strategy at Escalera al Cielo, Yucatán, México

Between A.D. 950 and 1150, the inhabitants of the Maya residential hill complex Escalera al Cielo (EAC) rapidly abandoned their homes. Yet rich floor assemblages indicate that they expected to return, a rare archaeological signature with regard to strategies of detachment in ancient Mesoamerica. At EAC, ties to households, ancestors, and landscapes were never severed. These findings suggest that there are multiple ways in which established groups abandon households and communities and that such events need not be final. Instead, abandonment with anticipated return represents a social practice that can be examined archaeologically among not only nomadic and transient groups, but also within sedentary societies. Households and communities practiced such strategies for a variety of reasons, such as responding to catastrophic events, seizing opportunities for socio-economic improvement, and observing routinized religious practices. The type of abandonment strategy seen at EAC is compared to similar cases of abandonment, both historical and archaeological, with an anticipated return. Overall, the abandonment of EAC enhances our understanding of how and why groups detach from a particular place.

Parker, Alyssa ( Millennia Research Limited) [156] Challenges and Opportunities for Analysis of 3D Point Cloud Data

The collection of data, using a variety of spatial and attribute digital recording techniques that can be linked together in a relational database, produces a complex, attributed, 3D point cloud. This poses challenges and unique opportunities for analysis. 3D GIS software allows a wide range of visualization and analysis of 3D point data. ArcGIS 3D Analyst is used to display and analyse a rich 3D point cloud dataset. Challenges include visualizing a dense cloud of 3D points and interpreting patterns from it. However, the analysis options are much greater than they are for a traditionally recorded excavation. Techniques for analysis include symbolizing quantitative and qualitative attributes for visualization of patterns. Selective symbolization of certain attributes queried from the database simplifies the point cloud and allows patterns to be discerned more easily. Exact relationships between items are determined in 3 dimensions. Stratigraphic breaks recorded as points are transformed into overlapping surfaces, from which multiple stratigraphic profiles can be generated using cross-sections. Volumes of materials can also be accurately calculated using 3D volumetric shapes interpolated from the point cloud. Presentation of results can be dynamic and visually powerful using animated rotation of the symbolized point cloud.
agriculture is often associated with a higher degree of caries and this pattern is contrary to the expected results as intensification of health status. A significant decrease in caries rates occurs between the Pre-Latte (72.7%) and Latte (24.1%) populations. Individuals are less prone to LEH and thus may not have been exposed to high degrees of physiological stressors as the Latte. Climatic instability was more common in the Latte period and likely resulted in destruction of crops and reef systems, leading to reduced access to nutritional resources and subsequent decrease in health status. A significant decrease in caries rates occurs between the Pre-Latte (72.7%) and Latte (24.1%) populations. This pattern is contrary to the expected results as intensification of agriculture is often associated with a higher degree of caries and may be the result of betel-nut chewing.

Parr, Nicolette (Joint POW/MIA Accounting Command - Central Identification Laboratory)

Diachronic Patterns of Health and Disease in the Naton Beach Burial Complex from Tumon Bay, Guam

The current study is an investigation of the prehistoric Chamorro of Guam, in the Marianas Islands, to assess health and disease patterns over time. The transition from the Pre-Latte to Latte periods displays a shift in population size, diet, and subsistence strategies. Changes occur concomitantly with large-scale environmental and climatic fluctuations. It is predicted that cultural and environmental shifts will be accompanied by biological ones, as manifested by linear enamel hypoplasias (LEH) and carious lesions, due to increased stress levels and dietary changes. Significant differences in LEH frequencies were found between the Pre-Latte (16.5%) and Latte (45.0%) populations. The Pre-Latte individuals are less prone to LEH and thus may not have been exposed to high degrees of physiological stressors as the Latte. Climatic instability was more common in the Latte period and likely resulted in destruction of crops and reef systems, leading to reduced access to nutritional resources and subsequent decrease in health status. A significant decrease in caries rates occurs between the Pre-Latte (72.7%) and Latte (24.1%) populations. This pattern is contrary to the expected results as intensification of agriculture is often associated with a higher degree of caries and may be the result of betel-nut chewing.

Parrish, Otis [111] see Wingard, John

Parsons, Ted and Roberta Gordaoff (University of Alaska Anchorage)

Creating Site Orthophotos and 3-D Models for a House Feature in the Aleutian Islands

We test the utility of “structure from motion” (SfM) software as part of the excavation of a 3400-year-old upland house (ADK-237) on Adak Island, Alaska. Low altitude aerial photographs taken with inexpensive digital cameras are merged with terrestrial digital single lens reflex images into large-scale photomaps and detailed 3-D models of site features. We find that the semi-automated software is simple to use and that the merged and rectified images it creates are accurate and easy to interpret.

Passeniers, Oona [227] see Van Gijn, Annelou

Passey, Benjamin [172] see Henkes, Gregory

Pate, Donald (Flinders University)

Archaeology and the Scientific Method: An Interdisciplinary Process Involving Successive Approximations toward a Past Behavioral Reality

Due to the influences of my mentor Dick Gould, I practice and promote archaeology as a behavioral science which examines relationships between material remains and past human behaviors in ancient, historical and contemporary time periods. Applying a critical scientific approach to archaeology involves a collaborative, interdisciplinary process which enables inferences about past human behaviors via the employment of a range of independent methods of analysis. As Walter W. Taylor argued, this approach to archaeological research results in successive approximations toward a past human behavioral reality. An educational grounding in the sciences and social sciences facilitates effective communication across disciplines and active involvement in team-based archaeological teaching and research. My 30-year academic career in Australian archaeology, including the establishment of the Department of Archaeology at Flinders University, reflects adherence to these philosophies.

Patel, Parin [48] see Giessler, Kalena

Patel, Shankari (University of California Riverside)

New Directions Courtesy of an Old Collection: Pilgrimage, Gender, and the Nepean Collection from Isla de Sacrificios, Mexico

The Nepean Collection is the largest group of artifacts from Isla de Sacrificios in Veracruz, Mexico that the British Museum acquired from a British Naval Officer in 1844. Only one percent of the collection is on display and an even smaller portion of the artifacts had received scholarly attention. Previous researchers determined that Isla de Sacrificios served as an international Postclassic (A.D. 1000 – 1519) pilgrimage location. With permission and assistance from the British Museum, my dissertation research drew upon feminist and historical materialist methodologies to examine over two thousand artifacts from the Nepean Collection. The numerous female figurines and spindle whorls compared within the context of a larger regional history indicate a previously unknown female component to Postclassic pilgrimage practices. However, the larger insight gained included the realization of the immense value that old collections can provide for answering new and important archaeological questions.

Paterson, Alistair (University of Western Australia)

Cruel Seas: Depictions of Maritime Activities and Rock Art as Evidence for Coastal and Island Use in the Colonial Period, Northwestern Australia

In the Pilbara (Northwestern Australia) depictive traditions in rock art and other media were significant aspects of indigenous communication. With the arrival of outsiders in the nineteenth century significant changes were heralded by European colonialism, the demands of pearling and pastoralism, and the loss of traditional lands. In this rapidly changing social and physical environment Aboriginal artists depicted boats, Europeans, stock, and other aspects of the contested colonial domain in rock art. This reflected what we know from historical sources: people were forced to work on boats and were confined to offshore islands. Recent work explores how these events are potentially reflected through the archaeological record, including rock art. An analysis of the rock art of the coastal Pilbara necessarily move beyond the depictions of new motifs to a nuanced interpretation of indigenous depictive practices in a changing world.

Patrick , Faulkner [224] see Barham, Anthony

Pattee, Donald (University of Nevada, Reno) and Geoff Smith (Department of Anthropology-University of Nevada, R)

A Changing Valley: Diachronic Shifts in Mobility and Toolstone Procurement in Oregon’s Warner Valley

X-ray fluorescence analysis (XRF) is a common technique that researchers use to determine the geochemical properties of lithic materials. It allows researchers to calculate the distances and directions that prehistoric artifacts traveled via direct procurement and/or exchange, and these data are often used to address questions of prehistoric mobility and toolstone procurement strategies. This study incorporates a large sample of obsidian projectile points ranging from fluted and stemmed Paleoindian (~11,000-8,000 BP) points to Archaic (~8,000 BP to Contact) points from Oregon’s Warner Valley and considers diachronic shifts in mobility patterns and toolstone procurement strategies there. Additionally, data derived from the projectile point sample may offer insight into Warner Valley’s place in the prehistoric
socioeconomic systems of the northern Great Basin. Evidence from surrounding study areas facilitates situating Warner Valley within this broader context.

[128] Chair

Patterson, Sarah

[158] Using Grave Markers to Identify Trends in Immigration

Research involving historic cemeteries and the information that can be gleaned from them is a growing part of archaeology today. This study examines the extent to which it is possible to determine trends in immigration based on the information available on grave markers from one historic cemetery, Historic St. Michael’s Cemetery in Pensacola, Florida. A sample of grave markers was selected from the previously collected St. Michael’s Cemetery Database and the data was analyzed with regard to available birthplace information. The data shows marked trends in immigration that coincide with observations from alternate historical and archaeological sources.

Patterson, David [215] see Bobe, Rene

Patterson, Susan (Rhode Island College)

[230] To Follow in the Footsteps of a Master: The Indian Shaker Church and Tribal Identity in Northwestern California

Richard Gould is not only a gifted archaeologist, for his work in ethnography and ethno-archaeology has informed my own career as a cultural anthropologist and shaped my life, both professional and personal. Dick wrote compellingly about the Indian Shaker Church among the Tolowa and other natives of northwest California, asserting that rather than assisting natives towards assimilation, the ISC was a vehicle for the maintenance of tradition. These traditions would, in time, inform the direction of their contemporary sovereign tribalism, emergent during Dick’s research in the 1960’s, and firmly in place during my research from 1999 to 2000. When Dick was conducting his archaeological excavation at Point St. George, no one could predict the impact that mass media and electronic communication would have on the politicization of Indian identity. And yet he astutely identified the ISC as the cultural bridge to 21st century retribalization. In this paper I will describe the role of the Shaker Church, as the repository of pan-Indian traditions, in facilitating the emergence of distinct tribal identities in northwestern California.

Pauketat, Timothy [15] see Pauketat, Timothy

Pauketat, Timothy


Cities and would-be urban centers consist to variable degree of designed monumental spaces and dense, diverse populations. Ancient eastern North American centers from 3500 B.C.E. to the historic era were typically the former but seldom the latter until Cahokia. Yet Cahokia and later Mississippian towns were built of nondurable materials, and certain sorts of sustained commemorations by descendants were not possible. Based on Mississippian cultural history and comparisons with other early cities, I argue that urbanization was a process contingent on materiality and monumentality as much as people.

[15] Chair

Paul, Kathleen [63] see Butler, Michelle

Pavlenok, Konstantin [222] see Flas, Damien

Payne, Jennifer (Los Alamos National Laboratory)

[175] Community Organization in Two Areas of the Southwestern United States

Central to archaeological research in the southwestern United States is an understanding of the diverse ways people come together to form communities. Communities are organized in a variety of ways across this area of the United States. Differences and similarities reflect the needs of the individuals that make up the community as well as the common goals of the communities. Communities are dynamic and can change as a result of changing conditions and needs. Recurring and recognizable patterns of stability and change are visible in the archaeological record on the Papajo Plateau in northern New Mexico and in the Mogollon region of southern New Mexico. Population aggregation appears to have been one of the primary ways in which communities formed in both of these areas. Recent research has provided information about aggregation and subsequent integration in these areas across time. This paper provides an overview of the architectural evidence from both of these areas as well as examples of the ways in which architectural evidence can be used to evaluate community organization.

Pazmiño, Iván [1] see Vasquez, Josefin

Peacock, Evan (Mississippi State University) and Timothy M. Ryan (Pennsylvania State University)

[284] High Resolution Computerized Tomography as a New Method for Microartifact Analysis

Although microartifact analysis has a number of applications, it remains relatively little used in archaeology due in part to the onerous time requirements for sample processing and analysis. One option for high-throughput classification and analysis of microlithic samples is high-resolution computed tomography (HRCT) scanning. HRCT uses the attenuation of X-rays through an object to produce cross-sectional images. The high energy sources (typically 100 to >320 KV) are capable of penetrating dense samples like rocks and fossils and have the capability to resolve fine-scale structures ranging in size from less than 0.01 mm to 0.2 mm. We propose an alternative method for microartifact analysis in which raw field samples (small cores) are scanned and analyzed digitally using image analysis and visualization software. Automatic and semi-automatic image segmentation methods are being developed to allow quick selection and three-dimensional reconstruction of the microartifacts based on both morphological (e.g., size, shape) and density features present in the CT dataset.

Péan, Stéphane [69] see Lanoë, François

Pearson, Jessica (University of Liverpool), Lynn Meskell (Stanford University, USA), Carrie Nakamura (University of Leiden, Netherlands) and Clark Spencer Larsen (University of Ohio, USA)

[52] Isotopes and Images: Fleshing out Bodies at Çatalhöyük

For twenty years archaeological approaches to the body have tended to focus upon evidence confined to specific areas of expertise. Such separations in scholarship are understandable due to archaeological specializations in osteology or figurines, burial practice or stable isotope ratios. Here we attempt a reconciliation of evidence at Çatalhöyük that relates to the archaeological body: stable isotope analysis, physical anthropology and bodily representation through figurines, building installations, and the burial assemblage.

Once interpreted as evidence for a Mother Goddess cult, new studies of the corpulent figurines suggest a bodily significance of flesh, aging and maturity. The lack of gender differentiation is notable throughout the site, including in diet. However, the isotope
data does reveal that younger adults consumed different foods than other adults, which accords well with the particular attention to age and flesh in the representational sphere. This age-based pattern is also born out in the burial assemblages: older individuals accrued the most diverse and biographical burial assemblages. We suggest that the Çatalhöyük inhabitants pushed beyond their corporeal constraints by emphasizing the significance of flesh in their material world as representational of age and maturity, which challenges older notions about matriarchy, gender hierarchies and the privileging of female fertility.

Pece, Matthew [89] see Torvinen, Andrea

Pechenkina, Ekaterina (Queens College of CUNY) and Xiaolin Ma (Henan Administration of Cultural Heritage)

[219] The Consequences of the Mid-Holocene Climatic Optimum and Subsequent Cooling for Human Health in China's Central Plains

Climatic change and associated environmental instability affect human health in several different ways. By altering the availability of particular resources and thereby influencing nutrition and diet they have an immediate impact on growth and development, as well as on oral health. Episodes of famine led to the increased frailty of infants and also to growth arrest episodes in juveniles and subadults. On the Central Plain of northern China, climatic changes following the Mid-Holocene climatic optimum were coupled with rapid sociocultural changes in Chinese society. In this paper, we employ the frequency of linear enamel hypoplasias to document incidents of growth arrest during early childhood using skeletal collections spanning from the Middle Neolithic to the terminal Bronze Age. We document a negative correspondence between the frequency of such episodes in a given skeletal collection and the occurrence of other skeletal indicators of physiological distress, such as porotic hyperostosis and general periostosis. This negative relationship might be explained as resulting from selective mortality of frail infants with additional health problems.

Peck, Nina (University of Guam)

[7] Subsistence and Coastal Resources: The Iron Age in San Remigio, Cebu, Philippines

In June 2011, the University of Guam held a field school in San Remigio, Cebu, in conjunction with the University of the Philippines-Diliman and the University of San Carlos. The archaeological excavations focused on an Iron Age burial site located in the San Remigio Parish Church premises. Three burials were found, with several whole earthenware pots among the grave goods. A large number of earthenware sherds were also recovered over the course of the field season. Marine shells exhibited signs of modification, possibly because of meat extraction. Carbon dating from the site makes this the oldest archaeological site in Cebu, placing it during the Philippine Metal Age at 1540-1400 BP. This paper presents subsistence strategies among the inhabitants of Iron Age San Remigio, Cebu and how this subsistence pattern influenced changes in the coastal landscape.

Peelo, Sarah (Albion Environmental), Linda Hylkema (Santa Clara University) and Clinton Blount (Albion Environmental)

[119] The Indian Rancheria at Mission Santa Clara de Asis

Missions were communities, or cascos, that included not only the church and its architectural elements but all spaces, inside and out. From historic documents and artist reconstructions, we have numerous depictions of indigenous villages (rancherias) part of Spanish mission communities. Despite our awareness of such components, few archaeological investigations have focused on the identification of rancherias, let alone other non-architectural features within those spaces. Archaeological investigation of these features provide an opportunity to explore spaces that were inherently indigenous. Studying the experiences of those who lived outside of the church’s walls provides a balanced understanding of mission life, and the ways the local Indians, the Ohlone, Miwok, and Yokuts, responded to the colonial process. Here, we highlight our findings from recent archaeological work in the Indian Rancheria at Mission Santa Clara de Asis emphasizing how this community reproduced Native traditions in a new social environment, incorporated foreign practices, and emerged with a new Mission Indian identity.

Pei, Shuwen [222] see Peng, Fei

Pelléret, Natalie, Tania Blyth (Diagnostic Imaging Department, Quinnipiac University), Robert Lombardo (Anthropology Research Institute, Quinnipiac University), Gerald Conlogue (Bioanthropology Research Institute, Quinnipiac University) and Gary Arosen (Department of Anthropology, Yale University, New Haven)

[260] The Advantages and Disadvantages of Multi-Detector Computed Tomography (MDCT) and Computed Radiography (CR) for the Radiographic Examination of Human Skeletal Remains from a Mid-Nineteenth-Century Cemetery in Connecticut

Multi-detector computed tomography, MDCT, and computed radiography, CR, were used in the investigation of human skeletal remains from a Mid-19th Century Cemetery in Connecticut. Both modalities prove themselves useful in a number of ways; however depending on the pathology or anatomy of interest one modality may be more appropriate than the other. A selection of images, describing their radiographic findings, technical factors, positioning techniques and comparison of each modality will be presented in order to clearly demonstrate the significance of radiographic imaging and the advantages and disadvantages of both modalities. In addition, the relative availability and potential costs associated with each modality will be discussed.
demonstrates that late Bronze Age Chinese metalworkers casting was used to make these vessels. This case study

According to ceramic evidence, the pre-Hispanic occupation of the Huancabamba Valley began during the Initial period. This valley worked as a strategic area to establish relationships and trade with different regions such as Jaen and Bagua; the north coast of Peru; and the Cajamarca area. During the Late Horizon, a centralized power took control over the Andean area and the reorganization of different ethnic groups constituted changes in the material culture. The Incas built in the Huancabamba valley state production centers in order to control and keep the Inca Road System, which connected the north area of Peru to Ecuador. The ceramic assemblage recovered from Inca state sites does not show typical Inca pottery style or decoration from the heartland. It is possible that administrative centers built by the Incas provided the means to support state facilities such as pottery production. In addition, ethnohistoric evidence suggests that during the Inca period coastal communities were relocated to highland settlements in order to serve as officers in state facilities. Trace element analysis on Late Horizon pottery in this valley provides information on pottery provenance in the Cajamarca area, and the way in which the Inca state exercised control in new provinces.

Was Lost-Wax Casting Practiced in Bronze Age China? A Case Study of the Rim Openwork Appendage of the Bronze Zun-Pan Set in the Tomb of Marquis Yi of Zeng

Scholars disagree about whether late Bronze Age Chinese metallurgy involved the lost-wax casting technique. The bronze Zun and Pan serving vessel set, recovered from the tomb of Marquis Yi of Zeng (d. 433 BC; Hubei Province) in 1978 offers an excellent opportunity to evaluate competing views. This paper reports findings from research on the bronze serving set and also work on other related bronze vessels, and concludes that lost-wax casting was used to make these vessels. This case study demonstrates that late Bronze Age Chinese metalworkers employed lost-wax casting as part of their technological tradition.

Emergence of Late Paleolithic in China: A Technological and Cognitive Perspective

The onset of Late(Upper) Paleolithic is traditionally marked by the appearance of complex technology and cognition ability. Increasing evidences in archaeological excavations and advances in chronology allow us to discuss the emergence of Late Paleolithic in China and Late Pleistocene cultural evolution in Northeast Asia in more detail. Some scholars have suggested that, in Northeast Asia, technological changes are linked with demographic variations that the early stage of the Late Paleolithic technology reflects the economic advantages inherent to Levallois core geometries. Shuidongcou Locality1(SDG1) provide important material to check this assumption because of its distinctive blade assemblage in China. Most of the previous studies followed a typological approach, a new study combined the techno-economic approach of the Chiaine Operatoire with an attribute analysis was applied to reanalysis the collections that were unearthed during the 1980’s excavation. Two main blade reduction systems at SDG1 were identified. It shows striking technological and chronological similarities with the laminar assemblages in Siberian Altai. The technological analysis led to the exceptional discovery of an engraved core. This study provide an technological and cognitive perspective to understand the poorly known period in Chinese archaeology and late Pleistocene population dynamic in Northeast Asia.
Perez, Griselda [65] see Navarro-Farr, Olivia

Pérez, M. Carmen [63] see Sugiura, Yoko

Perez Robles, Griselda [290] see Fridberg, Diana

Perkins, Leslie and David Sandrock (SWCA Environmental Consultants)

Preliminary Report on Excavation Comparisons between Two Household Residential Groups along the Dos Hombres to Gran Cacao Archaeological Project in Northwestern Belize

Household archaeology attempts to understand how households were ordered and how the house itself structures activities. This paper compares the excavation results between two household residential groups within the Dos Hombres to Gran Cacao (DH2GC) Archaeology Project area. One of the residential groups is located closer to the site of Dos Hombres; the other is situated roughly one km away near a middle management site. Comparison of production and consumption assemblages provides a basis for drawing inferences regarding nature of cooperation, ownership, and status within the groups.

Perreault, Charles (Santa Fe Institute)

The Pace of Cultural Evolution

Today, humans inhabit most of the world's terrestrial habitats. This observation has been explained by the fact that we possess a secondary inheritance mechanism, culture, in addition to a genetic system. Because it is assumed that cultural evolution occurs faster than biological evolution, humans can adapt to new ecosystems more rapidly than other animals. This assumption, however, has never been tested empirically. Here, I compare rates of change in humans to rates of change in animal morphologies. I find that rates of cultural evolution are inversely correlated with the time interval over which they are measured, which is similar to what is known for biological rates. This correlation explains why the pace of cultural evolution appears faster when measured over recent time periods, where time intervals are often shorter. Controlling for the correlation between rates and time intervals, I show that cultural evolution is faster than biological evolution; this effect holds true even when the generation time of species is controlled for; and culture allows us to evolve over short time scales, that are normally accessible only to short-lived species, while at the same time allowing for us to enjoy the benefits of a long life history.

Perri, Angela (Durham University)

The Hunting Dogs of Jomon-Period Japan

The Japanese archaeological record has produced some of the richest and most numerous prehistoric dog burials in world, though their existence often goes unnoticed by the larger archaeological community due to a lack of translated material. Faunal material recovered from prehistoric Jomon sites (ca. 12,000-2,500 B.P.) shows a close relationship between Jomon dogs and people, especially at the large shell middens of the northeastern coast where groups were largely dependent on hunting terrestrial ungulates. This paper discusses the relationship between hunting methods, prey species, and environmental change in examining the role of dogs as important hunting tools (and group members) in Jomon communities.

Perry, Jennifer (CSU Channel Islands)

Field School Pedagogies: Agendas, Outcomes, and Adaptations

Archaeological field schools oftentimes have multiple agendas relating to research, teaching, and public outreach. Most would agree that the integrity of the research and the quality of student education are simultaneously important. However, the intersection of these agendas may result in outcomes ranging from synergistic to conflicting and even disastrous. It can be difficult to balance these priorities because of the significant budgetary, logistical, and supervisory constraints under which many field schools operate. Complicating this situation, not all students are the same with respect to their motivations, proficiencies, and goals. Although many would acknowledge the priority of training future archaeologists, the reality is that a large percentage of field school participants do not pursue archaeology as a profession afterwards. As the number of field schools grows as a means to fund research, and opportunities grow in response to a greater emphasis on study abroad and other forms of experiential education in the United States, what is our responsibility to the non-archaeologists who populate our field schools? I explore the pedagogical implications of this question, highlighting examples along a spectrum of possibilities ranging from limiting enrollment to greater inclusivity.

Peschaux, Caroline (Université de Paris 1 Panthéon-Sorbonne), Grégory Debout (Service archéologique des Yvelines) and Olivier Bignon (Centre National de la Recherche Scientifique)

A “Bead’s Time” within the Hunter-Gatherer Populations of the Upper Paleolithic: Correlation between Personal Ornaments and Site Function in the Paris Basin (France)

This paper focuses on the links between personal ornaments and the territorial organization of Upper Paleolithic hunter-gatherers societies. In sites, the beads series are dissimilar. They differ in quantity, variety, local distribution and stage of manufacturing (finalized objects, raw material, supports and waste). This diversity enables one to distinguish the production sites from the sites of occasional losses. Bead-work may have been segmented in time and space. Ethnographic studies show that bead-work was mainly carried out while the populations were mobile and settled, thus indicating that bead-work was done while on residential settlements at certain times of year. To check whether the making of personal ornaments during Upper Paleolithic is to be related to the sites functions, we have correlated the presence and the content of beads with the length of time, seasons and activities of several French sites in the Paris Basin dating from the Upper Magdalenian (-14 Ky BP) and the Badegoulian (-18 Ky BP). The purpose of this work is to identify whether there was a specific “Beads Time” and to model the role this time may have played in the territorial organization of Paleolithic hunter-gatherers.

Pestle, William (University of Miami), Christina Torres-Rouff (University of California, Merced), Mark Hubbe (The Ohio State University), Francisco Gallardo (Museo Chileno de Arte Precolombino) and Gonzalo Pimentel (Universidad Católica del Norte)

Moving Food, Moving People: Regional and Local Patterns of Dietary Variation in the Formative Period Atacama Desert, Northern Chile

Using a burgeoning corpus of human, floral, and faunal stable carbon and nitrogen isotope data, the present work examines patterns of mobility and social interaction in northern Chile's Formative Period (1500 B.C.-A.D. 500). While the geographic barriers and harsh climatic conditions of the Atacama Desert together with substantial logistic considerations established certain constraints on human diet at the site and local (i.e. coastal, Loa River, oasis) levels, regional level dietary variation and the
identification of travelers (individuals with dietary signatures characteristic of foodstuffs not available at their place of burial and along exchange routes) speak to frequent and possibly even regular interzonal movements of people and/or foodstuffs. Here, we examine data on: 1) unique isotopic aspects of the region’s available foodstuffs, 2) regional patterns of dietary variation considered in light of recently advanced hypotheses about the nature of mobility and social interaction in Formative Period northern Chile, and 3) intra-site dietary variation possibly attributable to age, sex, and unequal practices of food access and redistribution.

Peters, April and Bern Carey (Museum of Northern Arizona) [218]
Social Identities in the Deadman’s Wash Frontier Zone North of Flagstaff, Arizona
A signature event in the prehistoric landscape of the Flagstaff, Arizona region was the eruption of Sunset Crater in the mid-to-late 11th century. Following that eruption three distinct groups, the Cohonina, the Kayenta Branch of the Ancestral Puebloans, and the Sinagua migrated into a region north of Sunset Crater from their cultural heartlands. These groups converged and interacted in this frontier region from 1075 to 1300 AD. An area twice the size of the Wupatki National Monument, called the Deadman’s Wash Frontier Zone, is being surveyed on US National Forest lands. Hundreds of previously unknown, significant habitation sites have been recorded. A new, robust data set now exists from those sites in which distinct, cultural communities are being found that change through time. Using similarities in ceramic assemblages to infer participation in a social network, this research establishes the structure of prehistoric social networks in 25-year time intervals. The structure and change of social networks allows insights into how and with whom the prehistoric inhabitants of the region interacted and how those communities of interaction changed over time.

Peters Jr., Desmond [128] see Villeneuve, Suzanne

Peterson, Elizabeth (Simon Fraser University) [5]
Mobility Variation among Hunting-Gathering Societies: Evaluating Risk Reduction through the Lens of Social Networking
Building upon the current models of mobility, this study explores one specific possible driver of variation in mobility patterns found among hunting-gathering populations; that of social networking. By social-networking I mean the creation and maintenance of group relations as an adaption to the uncertainty of resource procurement due to environmental conditions (Jochim 1998; Kelly 1995: Ch. 5; Whallon 1989, 2006). This posters will be reporting on the results of a cross cultural analysis of ethnographic data on hunting-gathering groups from the recent past as a means to explore possible correlations between environmental biodiversity and network mobility in terms of visits. The data set is derived from Binford’s compilation of ethnographically studied hunting-gathering groups as expressed in his 2001 work Constructing Frames of Reference. Focus is placed on three variables: environment, population size, and the mean size of the population conducting multi-group moves for networking. The overall goal for this cross-cultural study is to contribute further to our understanding of variation in hunting-gathering mobility by building upon past models. Results of such a study will enable us to broaden our understanding of variability in hunting-gathering mobility patterns in both the ethnographic and archaeological record allowing for a more complete picture.

Peterson, John [7] see Sanders, Mariana

Peterson, Emily (University of Washington) and Peter Lape (University of Washington) [167]
Beyond the Beach: Exploring Connectedness and Isolation in Island Southeast Asia
Island archaeologists are increasingly aware that in the context of human adaptive systems, simple measures of isolation like those used by biogeographers are insufficient for understanding the complex social interactions between human populations and the construction of boundaries in an island world. This paper will explore the potential applications of the concept of connectedness for measuring isolation as social distance rather than as a strictly geographic parameter, using case studies from Island Southeast Asia. This concept enables us to move beyond the beach to investigate interaction, both cooperative and competitive, and isolation from intra-island to region scales.

Peterson, Christian (University of Hawai‘i at Manoa) [179]
Conservative Ceramic Change and Its Impact on Social and Demographic Reconstruction from Regional Settlement Data
The prehistoric ceramic assemblages of northeastern China vary very little across a vast area over thousands of years, complicating the definition of archaeological period boundaries and their subdivision into shorter phases. This paper explores the impact that conservative ceramic change has on the estimation of regional population and the delineation of community structure from regional settlement patterns in northeastern China, as in some other parts of the world, the composition and characteristics of highly fragmented ceramic assemblages from residential contexts are poorly understood, so ceramic chronologies are based largely on subtle changes in form and surface decoration observed for whole vessels recovered from burials. Consequently, the tiny, worn and non-diagnostic pottery sherds that are the typical remains of prehistoric occupation encountered on survey can be extremely difficult to classify to archaeological period—let alone to assign to shorter occupational phases within periods that are exceptionally long. The possibility that surface sherds have been systematically misidentified is especially worrisome, since existing social and demographic reconstructions would require revision. Estimates of regional population and the scale of Neolithic communities would increase over some periods, and decrease for others. These and other issues are discussed at length, and corrective action suggested.

Peterson, John (University of Guam) [221]
Co-opted Heritage: Political Action, Identity, and Preservation at the Pagat Site, Guam
During the EIS process for the proposed U.S. Navy military buildup on Guam, a community activist group, We Are Guahan, protested the selection of an artillery range near the late pre-contact site of Pagat in northeast Guam. The site was used to rally native Chamorro resistance to the military buildup. The group led a coalition of community groups in a lawsuit seeking a restraining order against the project. The case was subsequently dismissed, but heritage preservation had become the focal point for community action against the buildup, and an expression of cultural identity. However, contemporary Chamorro identity is rooted in the late Spanish and early American periods of Guam’s history, and traces to the 19th century and not to pre-Spanish indigenous culture on Guam. The latte stone has become a keystone of Chamorro identity, but Chamorro today have few cultural memories of pre-Spanish settlement. The political action was successful in firing public imagination off Guam, but arguably stalled the military buildup that is supported by the majority of Guamanians, Chamorro along with Filipinos, Asians, and Anglo-Americans. Unfortunately, the site of Pagat is now at greater risk of neglect once out of the limelight.

Petraglia, Michael [131]
The Toba Super-eruption: Current State of Knowledge
The Toba super-eruption was the largest volcanic eruption in the last two million years. Competing theories center on the degree to which the eruption impacted life on earth, one view claiming that...
the event was devastating and catastrophic, while another suggesting relatively minimal impacts. A 10 year interdisciplinary project on the ecological and evolutionary effects of the eruption has been conducted in South Asia. The aim of this presentation is to highlight main findings and to review the most recent evidence relating to dating, environments and archaeological sites. Our conclusion is that while the Toba super-eruption had effects on terrestrial ecosystems, these were limited, temporary, and spatially variable, and certainly not as catastrophic as has been theorized. We conclude, using the most up-to-date archaeological information, that human populations in South Asia survived the eruption.

Petrie, Cameron (University of Cambridge) [245] Discussant

Pettinelli, Elena [135] see Barone, Pier Matteo

Peuramaki-Brown, Meaghan (University of Calgary) [287]

The Community as “Affective Assemblage”: Low-Density Urbanization at Buenavista del Cayo, Belize

In a recent article, Harris (2012) builds from Deleuze and Guittari (2004) to describe communities as the consequences of “affective assemblages” -relationships between people, places, things-operating within a range of specific scales both geographically and temporally. Buenavista del Cayo is a Classic period Maya center in the Lower Mopan River Valley of West-Central Belize whose life history of urbanization begins in the Middle Preclassic (ca.1000-350 B.C.E.) and persists until the Terminal Classic (ca. 780-890 C.E.). This paper adopts Harris’ perspective in the presentation of an examination of the process of urbanization at Buenavista through an evaluation of relationships between people, their knowledge and “things”, and the places -both public and private-they inhabit. The “community as affective assemblage” approach is demonstrated to successfully produce diverse and diachronic insights into the urbanization process at Buenavista on local, center-wide, and regional scales.

[287] Chair

Phaff, Brianne (Simon Fraser University) and Mike Richards (Department of Human Evolution, Max Planck Institute) [138]

Spatial Variation of Biologically Available Strontium Isotopes in Fiji: Implications for Prehistoric Fijian Mobility

This paper will discuss mobility patterns of prehistoric humans interred at the site of Sigatoka, Viti Levu, Fiji through the strontium (Sr) analysis of prehistoric human skeletal material and modern plant remains. Our dataset includes samples of human tooth enamel from 52 individuals interred at the western and eastern burial groups at Sigatoka, which span four discrete periods of occupation, as well as 56 samples of modern marine shell and plants from various locales in Viti Levu. The goal of this paper is to explore (1) whether sufficient heterogeneity exists in the biologically available strontium data we collected for Viti Levu to enable interpretations of mobility, particularly given the proximity to marine environments and the possible influence of marine strontium, (2) if appropriate heterogeneity exists, the fraction of local versus foreign individuals at the site through an analysis of strontium (87Sr/86Sr) values in human tooth enamel, and (3) the possibilities and limitations of analyzing large datasets of biologically available strontium to produce interpretations of human mobility in an archaeological context.

Phillips, Rebecca (University of Auckland) [129]

Contextualizing Human Mid-Holocene Mobility Strategies in the Fayum, Egypt

The beginning of the Holocene marks the initiation of varying degrees of human dependence on domesticated plants and animals. Egypt’s geographic position has led to its incorporation into a number of models of Neolithic development including those of southwest Asia, but also North Africa and the Mediterranean basin. Traditional models of Neolithic development in Egypt suggest proximity to the southwest Asian ‘center’ of domestication, in addition to ecological context, had an impact on resulting socio-economy and settlement pattern. The mid-Holocene occupation of the Fayum Depression is incorporated into this model. Mobility studies, either reconstruction of human movement or the contextualization of mobility strategies, are closely linked to this model in the Fayum, however, few studies exist where human movement is empirically documented in the archaeological record. A method to document artifact movement, a proxy measure for human movement, is applied to three assemblages from geographically distinct locations in Egypt to contextualize the Fayum occupation, including Sais in the Nile Delta and Nabta Playa in the eastern Sahara. The results challenge traditional interpretations, but also provide insights about the outcomes of different combinations and intersections of local social, economic and environmental variables during this period.

Phillips, Natasha (University of Auckland) [129]

Assessing Variation in Temporal and Spatial Scales of Early to Mid-Holocene Human-Environment Interaction in Northeast Africa

The relationship between early and mid-Holocene human behavior and arid to semi-arid environmental changes is considered at both a regional and local scale in the Egyptian eastern Sahara. As a chronological proxy for human behavior, hearth remains and associated archaeological, archaeobotanical and archaeozoological evidence are analyzed in relation to independent proxies for paleoenvironmental change from Nabta Playa, Dakhleh Oasis and the Fayum Depression. The degree with which human behavior changed in response to localized environmental shifts (e.g., lake and terrestrial resource availability) or large-scale paleoenvironmental processes (e.g., the north-south movement of the Inter-Tropical Convergent Zone) is assessed and compared to regional settlement system reconstructions and typologically defined units (i.e., Epipaleolithic and Neolithic). Geomorphological and post-depositional processes are considered potential biases when assessing generalized models on human-environment interaction.

Phillis, Caroline [165] see Kahotea, Des

Phon, Kaseka [249] see Dega, Michael

Picard, Jennifer (University of Wisconsin-Milwaukee), Jennifer Haas (Great Lakes Archaeological Research Center) and Ricky Kubicek (Great Lakes Archaeological Research Center) [25]

Sourcing Late Woodland Collared Ware and Madison Ware Vessels from the Finch Site, Southeast Wisconsin

The Late Woodland collared wares and uncollared Madison Ware vessels of Southeast Wisconsin continue to generate questions surrounding cultural affiliation, spatial distribution and temporal association. For example, research has shown differential regional distributions of Aztalan Collared, Starved Rock Collared and Point Sauble Collared Vessels. The degree to which the presence of Madison Ware versus collared ware vessels is indicative of cultural difference is a persistent question also. Recent excavations at the Finch Site (47JE902), a multicompartment habitation near Lake Koshkonong, produced a diverse Late Woodland ceramic assemblage. Vessels recovered include a variety of collared ware and Madison Ware vessels. Compositional analysis was conducted on these vessels using a portable X-ray
fluorescence analyzer (pXRF). The goal of this research is to provide insight into the manufacture and distribution of Late Woodland ceramic styles at the Finch site and throughout the region.

**Pickering, Robyn (School of Earth Sciences, University of Melbourne)**

“The Time Has Come”: The New Role of the U-Pb Geochronometer Applied to the South African Early Hominin Sites

South Africa has a rich early hominin fossil record, concentrated mainly in cave deposits, which, until recently, have been poorly dated and often considered the poor cousin of the vast, well-dated deposits of East Africa. Recent advances in U-Pb dating of carbonates (mostly cave carbonates or speleothems, particularly flowstones) are beginning to change this. Flowstones layers sandwiched between fossil bearing sediments can be treated as chronostatigraphic marker horizons and play an analogous role to the volcanic tuffs in East Africa. The key to successful U-Pb dating is isolating uranium rich horizons within the flowstones, making careful sample pre-screening a necessity. Most U-Pb dating work has focused on the ‘Cradle of Humankind’ caves, where ages can now be assigned to the early hominin species; ages can be further refined by investigating the palaeomagnetic signals preserved in the sediments and flowstones. Flowstones from caves several kilometres apart have U-Pb ages within error of each other, suggesting some large scale cyclicity behind the alternating deposition of flowstone and cave sediment. U-Pb dating has also been successfully applied to the southern Cape coastal cave sites of Pinnacle Points and attempts to date calcite horizons from the western Cape coast are underway.

**Pierce, Daniel E.** [279] see Glascock, Michael

**Pietrusewsky, Michael, Hallie Buckley (Department of Anatomy and Structural Biology, Univ) and Dimitri Anson (Department of Anthropology and Archaeology, Univer)**

Polynesian Origins: Biodistance Studies of Crania, Mandibles, and Some Lapita Skeletals

Biological distance studies, especially those based on cranial and skeletal morphology, continue to provide physical anthropologists and bioarchaeologists with an exceptional set of mathematically based methods for understanding population relatedness and population history. Because of the demonstrated correlation between phenotypic and genotypic similarities, studies of cranial form, most notably cranial measurements, occupy a central role in modern biodistance studies. This paper examines the results of multivariate statistical procedures applied to measurements recorded in modern and prehistoric crania and mandibles from the Pacific, including the largest samples of intact Lapita mandibles from the SAC site on Watom Island, New Britain, Papua New Guinea. The analysis of cranial measurements indicates affinities between Polynesian and island Southeast Asia. The analysis of mandibular measurements demonstrates that the Lapita associated mandibles from the SAC site are morphologically most similar to mandibles from eastern Melanesia, and that mandibles from Polynesia are most similar to mandibles from Southeast Asia. While these results do not support any of the previously proposed models for Polynesian origins entirely, the evidence from biodistance studies supports an ancestral Polynesian homeland in Wallacea and not one within geographic Melanesia.

**Pietruszka, Andrew** [251] see Esh, Kelley

**Pietruszka, Andrew (Joint POW/MIA Accounting Command) and Richard Wills (Joint POW/MIA Accounting Command)**

Forensic Archaeology Underwater: JPAC’s Inventory, Investigation, and Recovery of U.S. Casualties of War from Submerged Sites

Members of JPAC Recovery Teams travel throughout the world to recover Americans missing from the Vietnam War, the Korean War, World War II, and the Cold War. A growing concern over the past ten years has been the recovery and identification of remains from submerged sites. Currently, worldwide, some 3,616 unique loss incidents, accounting for over 10,000 individuals, are believed to be underwater. In this paper we examine the development of underwater investigations and recoveries at JPAC, the inherent difficulties of conducting forensic archaeology underwater, and the critical role of underwater sites in providing the fullest possible accounting of all American’s missing as a result of the nation’s past conflicts.

**Pigott, Vincent (University of Pennsylvania Museum)**

[216] Discussant

**Pike, Scott (Willamette University) and Jordan Loos (Willamette University)**

The Use of pXRF on In Situ Floor Deposits to Interpret Activity Areas within Monumental-Scaled Structures at the Ness of Brodgar at UNESCO’s Heart of Neolithic Orkney World Heritage Site, Orkney, Scotland

The current study is part of a broad research program to assess the utility of pXRF on active excavations. A Bruker Tracer III-SD pXRF was used to analyze in situ floor deposits of monumental-scale Structures 8 and 10 at the Late Neolithic site of the Ness of Brodgar in UNESCO’s Heart of Neolithic Orkney World Heritage Site in Orkney, Scotland. Multiple analyses of over 200 grid sample locations were analyzed using two different instrument configurations to target elements with specific fluorescent energy ranges. The resultant spectra were quantified and the data normalized to the Raleigh (elastic) scatter peak of the incident x-ray beam. Spatial contour mapping of the data suggests different use activities within different areas of the structures including the likely location of a pigment-producing workshop in Structure 10. This is significant, as the site has produced the earliest known interior painted walls in all of the British Isles, and possibly northern Europe. The pXRF data, when coupled with excavation data, are providing significant insight into the function and use of space in the largest buildings excavated thus far at this important and unparalleled monumental-scaled Neolithic temple complex.

**Pikirayi, Innocent**

[15] Early Second Millennium A.D. Future Cities of Southern Zambezia: Great Zimbabwe as an Urban Complex and Center of a State

There is nothing novel about current discussions on urban design, architecture, energy saving and environmental sustainability when one considers the pre-European, African city. For 13th century Great Zimbabwe and its hegemony one must accept that it was more than an oversized African village. Categorized by antiquarian Theodore Bent during the 1890s as one of the ‘ruined cities of Mashonaland’, Great Zimbabwe was a town, a central African one, but a metropolis nonetheless. It comprised many parts - elite residences, ritual centers, public forums, markets, as well as houses of commoners and artisans. It housed a large population of about 20000 people, within a complex of massively stonewalled futuristic megastructures. Its growth had an impact on its inhabitants, energy resources as well as the immediate and broader physical environment. At its fluorescence, it was one of the largest settlements in sub-Saharan Africa. How one defines such site revolves around centralization of political power and how such power mobilized labour, economic resources, and wealth in southern Zambezia.

**Pilaar Birch, Suzanne (University of Cambridge)**

[269] Communicating Archaeology through the Social
Media Knowledge Exchange

The Social Media Knowledge Exchange is an Arts and Humanities Research Council (AHRC) funded framework in the UK that facilitates the dissemination and communication of research by Ph.D. students and early career scholars. This poster describes and shares some of the preliminary results of a project that works within this framework to not only create digital community scrapbooks but also uses other forms of social media to facilitate the exchange of archaeological knowledge between early career academics and the public via the internet. The project recognizes the gap between making research not only open access but accessible. Digital scrapbooks are research, illustrated and explained. In the format of short podcasts, salient points of a given research topic are drawn as they are explicated, allowing the viewer to both listen to and visualize what is being described. The use of social media allows for feedback and input from users of the material in the constructions of future “scrapbooks”. This ongoing project will culminate in the production of a mini-series of collaborative scrapbook podcasts highlighting current research at the Department of Archaeology and Anthropology, University of Cambridge and has implications for public dissemination of archaeological research and knowledge-sharing in wider perspective.

Pilloud, Marin [12] see Schwitalla, Al

Pilloud, Marin and Mary Megyesi (Central Identification Laboratory, Joint POW/MIA A) [251] Human Remains in a Glacial Environment

A glacial setting presents a unique set of environmental parameters that leave a distinct taphonomic signature on bone. This signature is distinct from those seen in water or dry land environments and may be confused with other processes. Moreover, low temperatures slow bacterial reproduction thereby impeding the decay process. This delay could extend the interval that bone may respond in a perimortem fashion. It is important for the anthropologist analyzing human remains to understand taphonomy in a wide range of environments to accurately interpret peri and postmortem bone alteration.

A glacial environment presents multiple forces that can act on bone to include extreme temperatures, changes in temperature, and glacial movement. These forces lead to taphonomic modifications such as abrasion, fragmentation, cryoturbation, scavenging, and hydro-fracturing. Forensic cases recovered by the JPAC-CIL are discussed to describe the unique taphonomic signature cased by glacial processes and identify key patterns that can aid anthropologists in recognition. In addition, the preservation of bone and soft tissue is explored as well as potential for DNA extraction.

Pillsbury, Joanne (Getty Research Institute) [59] Discussant

Pimentel, Gonzalo [217] see Pestle, William

Pineda De Carias, Maria-Cristina (National Autonomous University of Honduras), Nohemy Rivera (National Autonomous University of Honduras) and Cristina Argueta (National Autonomous University of Honduras) [166] Stela D: Sundial of Copán, Honduras

This paper shows how the Maya of Copán, Honduras used Stela D as a sundial. Reviews of archaeological investigations show that in the northern sector of the Main Plaza of Copán Archaeological Park, Honduras, poles and unfinished stelae could be used to measure time and associated rites. We constructed a Stela D model to study the behavior of the shadows cast at different times of day and at different dates of the year such as solstices, equinoxes and zenith Sun passage. As a result we found out how this Stela served as a time marker. The analogy of the shadows cast with bodies of snakes; supports the iconographic interpretation of Stela D.

Pink, Christine (Joint POW/MIA Accounting Command) [272] Striking Out and Digging In: The Effects of the Rise and Fall of the Wari Empire on Population Genetic Structure in the Peruvian Andes

Archaeological evidence suggests that during the Middle Horizon (A.D. 600-1000) the Wari imperialist agenda influenced many populations on a broad geographic scale. The goal of this study was to detect the possible effects of Wari imperialism on the intensity of interaction between regional populations in the Peruvian Andes. Biological distance analyses based on cranial nonmetric data were used to identify biological affinity between populations and over time as a proxy for social interaction. Regional samples dating to the height of the Wari culture during the Middle Horizon were compared to those from the Late Intermediate Period (A.D. 1000-1400) after the collapse of the empire. Results indicate that populations were more genetically isolated after the collapse of the Wari Empire. Geographic patterns are also evident among the samples with regard to biological distances. These results have important implications for understanding social interaction and how it may be impacted by the economic, political, and ideological ambitions of an empire even in the absence of direct imperial administration.

Piper, Phil [20] see Larson, Greger

Pippin, Douglas (State University of New York at Oswego) [261] “A Very Laborious Task”: British Colonial Policy and the Establishment of Fort Haldimand on Carleton Island (1778–1784)

British policy in the American Colonies—leading up to the Revolutionary War—restricted colonial expansion, and discouraged settlement on the frontier. When that war broke out, maintaining control over the Great Lakes region was vital to British interests. They were hampered by their colonial policy, however, that resulted in few civilian communities in the upper St. Lawrence Valley and westward. In 1775 the new Continental Army attempted to exploit this weakness, and launched an attack on Canada that ultimately failed. In the years that followed, the British re-fortified the Great Lakes and St. Lawrence Valley. They struggled, however, to maintain transportation over the great distances and provide adequate supplies. At the head of the St. Lawrence River, Carleton Island functioned as a shipping depot, refugee base, and military hub between the upper posts and the cities of Montréal and Québec. Archaeological and historical evidence indicates that the active transport at Carleton Island led to a diverse population with respect to nationality, ethnicity, occupation, and socio-economic status. By examining not just the soldiers at the fortification, but the Carleton Island community in a broader context, a greater understanding emerges for post-war British settlement pattern in Upper Canada.

Piscitelli, Matthew [70] see Alarcon, Carmela

Piscitelli, Matthew (University of Illinois-Chicago) and Carmela Alarcón Ledesma (PAURARKU) [285] Ritual is Power: A Multidisciplinary Exploration of Early Ceremonial Architecture at the Late Archaic Site of Huarincagua in the Fortaleza Valley of Peru

This paper describes the results of fieldwork to investigate 3rd millennium B.C. temples on the coast of Peru. Field methodologies were designed to examine the changing nature of ritual practices
performed by early leaders as they systematically incorporated
religion into their base of power. The Late Archaic Period (3,000-
1,800 B.C.) witnessed the appearance and florescence of multiple
large scale communities with monumental platform mounds and
large sunken courts. Recent excavations have also revealed a
number of much smaller scale temple structures at larger sites that
bear many similarities to the classic Mito temples found in the
highlands. These temple structures reflect non-public rituals with
face-to-face interaction and provide an avenue for investigating
the role of ritual and ideology in the emergence of complex
political systems. This study presents the results of innovative
analytical techniques used in the excavation of a series of small-
scale temples at the site of Huaraçanga in order to explore
variation in ritual practices in the evolving complex polities on the
Peruvian coast during the Late Archaic Period.

Pitblado, Bonnie (Utah State University), Molly Boeka Cannon
(Utah State University), J.M. Adovasio, Megan Bloxham (Utah
State University) and Joel C. Janetski (Brigham Young
University)  
[87]  
Reuniting the Four-Decades-Lost Pilling
Fremont Figure with His Mates: Human
Intrigue, Cutting-Edge Science, and Ethical
Challenges

Our poster focuses on the well-known Pilling Figurines, a
collection of a dozen unbaked clay figurines crafted around AD
1000 and collected 1000 years later by ranchers in the Range
Creek (eastern Utah) area. The poster overviews the 1950 site
find; subsequent travels of the collection within and well outside of
Utah; the loss of a male figurine 40 years ago; the apparent
reappearance of the lost figurine in November 2011; the efforts of
researchers to demonstrate that the original had been returned;
and discussion of the collection within broader Fremont context.
We also touch upon the importance of collections like the Pilling
assemble (museum), land management agencies, researchers,
and the public.

Although the SAA submission system permits listing only five total
submission authors, our poster includes important contributions by
additional co-authors: Bud Pilling (son of the gentleman who
collected the figurines); K. Renee Barlow (who documented and
dated the site); Kathleen Anderson and Steven T. Nelson (who
performed geochemical analyses of the assemblage); Sally J.
Cole (on Fremont iconography); Byron Loosle (BLM archaeologist,
Utah); and Pamela Miller (long-time curator of the USU-Eastern
Prehistoric Museum, which has housed the figurines for many of the
last 60 years).

Pitezel, Todd (University of Arizona)  
[97]  
Hilltop Signals of Ritual Practice in the Casas
Grandes World, Chihuahua, Mexico

Hilltop features in the Casas Grandes world have been referred to
as “atalayas,” a Spanish word meaning watchtowers. But, this
term masks variability in feature composition and use during the
Casas Grandes Medio period (A.D. 1200-1450). During this time,
one or more of at least five rock feature types were constructed on
29 hilltops. The configurations of these features vary, but they
conform to components maximally expressed at Cerro de
Moctezuma. A GIS analysis shows that Casas Grandes hilltop
sites could have been signaling locations, with Cerro de
Moctezuma being the most intervisible site. At the same time,
recent excavation within Cerro de Moctezuma’s atalaya indicates
that it supported ritual observances. We describe hilltop features
in the context of their surrounding valley settlements to
demonstrate that these places signaled ritual practice across the
Casas Grandes world.

Pitblado, Bonnie [97] see Pitezel, Todd

Pitezel, Todd (University of Arizona), Neirisa Russell
(Cornell University), Ian Hodder (Stanford University ) and
Richard P. Evershed (University of Bristol)  
[9]  
Food Residue Fatty Acid C and H stable
Isotopes as Proxies for Evaluating Cultural and
Climatic Change at Çatalhöyük, Turkey

An extensive study of the organic residue associated with the
NeoUthic pottery of Çatalhöyük has further confirmed the timing of
dairy production on-site after following the methods of a previous
study (Evershed et al. 2008). The combination of this new
information with the faunal and stable isotope records of the same
site has provided a more detailed account of changes in animal
management strategy over time. Although the animal origins of
dairy at this particular settlement are still unclear (cattle vs.
sheep/goat), this study clearly demonstrates the importance of
combining information from multiple methods in furthering our
understanding of archaeological settings. In addition, a newly
developed palaeoenvironmetal proxy may provide a direct link
between changes in local precipitation levels and changes
subsistence practices by assessing stable hydrogen isotope (δD)
values of fatty acids extracted from pottery residues. This study
provides an in-depth look at some of the oldest dairy residues
found to date as well as environmental and social factors that may
have contributed or resulted from the transition to secondary
product use during the Neolithic.

Pittman, Holly (University of Pennsylvania)  
[157]  
The Bronze Age of Exchange on the Iranian
Plateau

Evidence from recent excavations in the region of Jiroft in the Haral
River Valley of south central Iran establishes the presence of
actors from across the Middle East in this region. Links to Central
Asia, the Indus valley, the Persian Gulf and southern
Mesopotamia can be seen through the residue of administrative
activity, and in particular through the glyptic impressed on clay
container sealings. This evidence augments and enhances our
understanding of the role of the Iranian plateau in the vibrant
phase of interaction during the third millennium BC that underlies
the rise of complex societies across the region.

Platt, Sarah [178] see Woodburn, Michael

Pluciennik, Mark (University of Leicester)  
[49]  
Differential Processes ...

Socio-cultural evolution has a life across many disciplines and
stages, from a broadly construed anthropology to philosophy,
colonialist actions, contemporary geopolitics, and public
understandings of human history and the status of others. Even
within its classic modern form (from the mid-eighteenth century
wards) social evolution cannot simply or continuously be
ascribed to the more material or more social tendencies of
archaeological theory. Rather, the leitmotif tends to be ‘progress’
of one form or another. This includes technologies, modes of
subsistence, settlement, or production; or the evolution of or
‘towards’ cultural traits such as monogamy, religion, literacy,
societal size, or socio-economic complexity. But what happens to
understandings of socio-cultural evolution when viewed through the
lens of Difference Theory? What are the implications of
dissonance and non-correspondence between the materiality of
the archaeological record and the almost always heterogeneous
(social and other) construals of that record, past and present, for
concepts of historical process? Must the long-term only ever be
understood as post-hoc historical accommodations, rather than
cogent explanations? How can systematic generalization ever be
informative, or offer a persuasive ‘answer’? Difference Theory
triggers a critical reexamination of some of the foundations of
philosophies of history from a specifically archaeological
perspective.
ABSTRACTS OF THE SAA 78th ANNUAL MEETING

Pluckhahn, Thomas [167] see Thompson, Victor

Plunk, Lindsay
[6] Chemical and Mineralogical Analysis of Varney Red Filmed Ceramics from the Lower Mississippi River Valley

Varney Red Filmed ceramics are a common part of Early Mississippian assemblages in the Lower Mississippi River Valley. Results of x-ray diffraction (XRD) and thin-section petrography will be presented from several Early Mississippian sites in the region. A better understanding of Varney Red Filmed ceramics and the Early Mississippian culture in the Southeastern United States can be achieved through the chemical and mineralogical study of these ceramics.

Plunket, Patricia (Universidad de las Americas Puebla) and Gabriela Uruñuela (Universidad de las Americas Puebla)
[63] The Cholula-Teotihuacan Relation Revisited

Based on his 1954 analysis of ceramics from excavations at Cholula’s Great Pyramid, Eduardo Noguera concluded that Cholula was conquered by Teotihuacan early in the Classic period and consequently was home to many ethnic Teotihuacanos. On the other hand, scholars working at Teotihuacan, like James Binnhoff and Evelyn Rattray, recognized a strong Cholula influence in the Tzacualli phase ceramics from the Basin of Mexico metropolis, but they did not envision large-scale immigration from Cholula or any political intervention. In this paper we reconsider the relationship between the two Classic cities based on their material culture and discuss alternative possibilities for their interaction.

[114] Discussant

Poister, Nicholas [125] see Brown, Kaitlin

Pokines, James T. [224] see Ames, Christopher

Polcyn, Marek [32] see Marciniak, Arkadiusz

Polk, Michael (Sagebrush Consultants, L.L.C.)
[168] Seeking Storage Where None Seems to Exist

Since February 2009, the primary curation facility in the State of Utah has refused to accept historic archaeological collections, citing that such acceptance violates its purpose and ability to properly store such materials. As a contractor who regularly deals with historic archaeological sites, a number of which we have excavated, the absence of a facility to properly store the recovered materials has created serious challenge for our company. In this paper, I describe these challenges and alternative means that we have discovered to curate artifacts. I also provide broader perspective about the subject, applicable in many other places in the country.

Pollack, David [40] see Killoran, Peter

Pollock, Susan
[30] Commensality and Painted Pottery Traditions in the Late Fifth Millennium in Southwestern Iran

An integral part of Henry Wright’s studies of early states and their immediate predecessors in southwestern Iran has been a consideration of the production and exchange of craft goods, among them ceramics. His work has helped to move our understandings beyond simple comparisons of the outward appearance of finished goods to consider forms of production and circulation. In this paper I will examine another element, namely how ceramic vessels were used in contexts of commensality and the social implications of their uses. My focus is on the late 5th millennium painted pottery traditions in the Susiana Plain and the Kur River Basin.

Polloock, Jacob, Ashley Grimes (Department of Anthropology, University of Utah) and Lisa Benson (Department of Anthropology, University of Utah)

In recent years much attention has been given to high altitude sites around the Great Basin as discoveries have increased; however, there is a lack of systematic mapping of these locations. This project is designed to analyze sites across the Uinta-Wasatch-Cache National Forest by (1) Mapping known lithic assemblages across the varying vegetation zones (Transitional, Canadian, Hudsonian, and Alpine), and (2) To analyze the occupational span of these sites. A comprehensive compilation of prehistoric sites and potential patterning of human behavior at varying elevations across the forest will help the archaeological community to better understand why human populations were converging at such heights.

Ponkratova, Irina [131] see Keeler, Dustin

Ponomareva, Vera [131] see Keeler, Dustin

Pool, Christopher A. [33] see Jaime-Riveron, Olaf

Pool, Christopher (University of Kentucky), Philip Arnold (Loyola University of Chicago) and Ponciano Ortiz (Universidad Veracruzana)
[275] Radiocarbon and Ceramic Chronologies of Matacapan, Veracruz, Mexico

The ceramic chronology worked out for Matacapan by Ortiz and Santley is a linchpin for archaeological research in the Tuxtlas Mountains. Radiocarbon dates submitted in the 1980s, however, produced large standard errors, most on the order of 100 to 300 years. In this paper we present a new series of radiocarbon dates for the site and discuss their implications for the prehistory of Matacapan and the Tuxtlas Mountains.

Poot, Paulina Ivette [33] see Rivas, Javier

Poppelka-Filcoff, Rachel (Flinders University), Tiffany Reeves (Flinders University), Philip Jones (South Australian Museum) and Claire Lenahan (Flinders University)
[181] Differentiation of Binders in Aboriginal and European Painted Artifacts using Pyrolysis Gas Chromatography Mass Spectrometry

Binders are used to adhere pigments to each other and to the support, and compounds used vary between cultures. After European settlement in Australia, Aboriginal Australians began using European-style binders as well as those obtained from native flora and fauna, however when and how this transition occurred is unclear. There has been extensive characterization of European binders, but much less of Aboriginal media. Such characterization could provide a basis for conservation, restoration, authentication, and dating of Indigenous artifacts from these time periods, as well as provide insight into Australian history. This research has focused on optimising a pyrolysis gas chromatography mass spectrometry (Py-GCMS) method to analyse a wide range of binding materials. This involves rapid heating of a sample to form small volatile compounds that are subsequently separated and detected to determine the chemical composition of the sample, and requires only very small samples (0.5 mg) and minimal sample preparation, making it highly
advantageous for use in analysing valuable artifacts. A method capable of distinguishing between binder types and materials from European and Aboriginal cultures has been developed, and a library of known binders has been compiled for comparison to Indigenous objects for identification.

Popov, Alexander [194] see McKenzie, Hugh

Popp, Brian (University of Hawaii) [138] Geochemical and Climate Modeling Evidence for Holocene Anidification in Hawaii

Valuable records of Holocene paleoclimate for the central subtropical Pacific have been developed from peat deposits and lake sediments. Increases in sedimentation rate between 10,000 and 6,000 cal yr B.P. in peat deposits from coastal, montane and subalpine areas in the Hawaiian Islands that receive predominantly trade wind precipitation imply increased moisture. The apparent increase in moisture coincides with evidence for increased moisture above the trade wind inversion. On the other hand a record of carbon and hydrogen isotope values of individual n-alkanes derived from the leaf waxes of terrestrial plants extracted from a 13.5 m sequence of limnic sediments in a sinkhole on the leeward coastal Oahu, Hawaii are consistent with a shift in the local vegetation from C3 to C4-dominated flora and decreased moisture over this time interval. The vegetative changes are consistent with a response to decreased overall water availability mainly due to reduced wintertime precipitation. Model simulations of orbitally-induced increases in insolation along the equator during the Holocene provide evidence for wintertime drying in Hawaii and in the eastern subtropical North Pacific. In this talk, I review records used to construct paleoclimate in Hawaii and compare them to tropical climate change across the Pacific Basin.

Poppiti, Vincenzo [33] see Kimber, Tom

Porter, Anne [146] Pastoralism and the Proliferation of the Polity

This paper argues that the perceived disjunction between pristine (fourth millennium) and secondary (mid-third millennium) state formation in greater Mesopotamia arises from the misperception that cultural continuity can only be carried by sedentary settlement systems. A widespread and long-lasting break in occupation intervened between the retraction of the first state system, the Urk, from the north, and the rebirth of complex society in this region. Two separate genoses of the state therefore seem necessary. From the perspective of mobile pastoralism however, there is a seamless narrative to tell where the rise and spread of the polity across greater Mesopotamia is a single process. Pastoralists were intrinsic members of, and dynamic forces in, the creation of the intersecting polities of the fourth millennium and their extension over space. When that system collapsed pastoralists regrouped and relocated, carrying with them the essential elements of its political practice, as they established new relations with the landscape during the early third millennium — relations that culminated in the urbanization of the mid-third millennium. The material manifestations of complex society were thereby reconfigured across space, but the social, political, and religious components of complexity remained intact throughout this time.

Porter, Benjamin [149] see Ames, Nicholas

Porter, Benjamin (University of California, Berkeley), Benjamin Porter (University of California, Berkeley), Alan Farahani (University of California, Berkeley) and Melanie Miller (University of California, Berkeley) [263] Catching Crabs in the Desert: Isotopic Insights

into Human-Animal Relationships in Early Iron Age Central Jordan

Archaeological remains of brachyurans (e.g. crabs) have often been overlooked as potential paleoenvironmental and paleoclimatic proxies in contrast to other marine and terrestrial invertebrates such as mollusks and landsnails. The potential for fine-scale regional paleoclimatic reconstruction based upon these organisms’ behavioral ecology has yet to be examined. This paper presents isotopic and morphometric analyses of archaeofaunal remains of Mediterranean semi-terrestrial freshwater crabs (Potamon potamon) from the archaeological site of Khirbat al-Mudayna al-A’Ilya (KMA). KMA lies on a southern tributary of Jordan’s Wadi al-Mujib, approximately 40 kilometers east of the Dead Sea. Excavations at the site recovered architecture, artifacts, and ecofacts dating to a single-period occupation during the early Iron Age (ca. 1000 BCE). Oxygen and carbon isotopes from these archaeofaunal remains were analyzed in conjunction with a novel two-year study of the modern Potomonautid population to ascertain the biophysical interactions between the organism and environment. This study also explores the comparative validity of these past ecological relationships through the examination of contemporary samples collected from other wadi systems. The implications of this research bear upon the loci of interaction of the ancient community with the wadi landscape, mobility, resource acquisition, and human-animal relationships

Ports, Kyle (Humboldt State University) [213] Stepping into the Underworld: Preliminary Analysis of Cave Investigations at the Dos Hombres to Gran Cacao Archaeological Project (DH2GC)

Caves and subterranean features are important aspects of the sacred landscape of the Maya region. This paper will provide interpretations of preliminary survey and excavations of several subterranean features located within the Dos Hombres to Gran Cacao Archaeological Project (DH2GC). By analyzing the spatial characteristics and providing artifact analysis, this paper explores the utilization of subterranean features by the ancient Maya and its ramifications on settlement analysis. This paper will also include a comparative analysis of caves located in the Programme for Belize Archaeology Project (PBBAP) region. The investigation of these features is integral to the understanding of the role that caves played in ancient Maya hinterland settlement.

Poteate, Aaron (North Carolina State University), Scott Fitzpatrick (University of Oregon), Meagan Clark (University of Oregon), Jessica Stone (University of Oregon) and Alyson Harding (North Carolina State University) [2] Amerindian Mollusk Exploitation during the Late Ceramic Age at Coconut Walk, Nevis, West Indies (ca. A.D. 850-1450)

Islands provide a unique opportunity to elucidate natural and cultural change due to their fragile ecosystems and heavy reliance on marine resources by human populations. In this paper, we add to the current knowledge of prehistoric Caribbean island subsistence strategies and human environmental interaction by examining the exploitation of mollusks from the Late Ceramic Age site of Coconut Walk on the island of Nevis in the northern Lesser Antilles. Results from a robust assemblage of more than 63,000 MNI and 79 discrete taxa from a large 5 x 5 meter midden area, suggest that: 1) three taxa (Nerita tessellata, Cittarium pica, and Lithopoma tuber) were the preferred species, with N. tessellata comprising 62% of the overall assemblage; 2) there was increased exploitation of mollusks generally through time; and 3) there is evidence of increasing size of at least one species, N. tessellata, over the course of site occupation. The research provides important insight into mollusk use on Nevis, and the role that a limited number of species had in human consumption patterns. Questions arise as to whether cultural and/or natural processes affected mollusk size, and how the Nevis data compare with other prehistoric shellfish assemblages in the Antilles.
Potts, Richard (Smithsonian Institution, Human Origins Program)

[215] Alternating High- and Low-Climate Variability Provided a Context for Variability Selection in Pleistocene East Africa

The interaction of orbital insolation cycles offers a model of East African environment that predicts switching between high- and low-climate variability over the past 5 million years. The model implies repeated increases in landscape/resource instability and intervening periods of stability. It also predicts eight prolonged eras of intensified habitat variability in which faunal community restructuring and hominin evolutionary innovations are likely to have occurred, potentially by variability selection. The prediction of highly variable landscapes is confirmed by stratigraphic analyses in the Olorgesailie, Olduvai, Turkana, and other East African basins. At Olorgesailie, for example, 70% (n=30) of basinwide landscape shifts, including large-scale lake/land oscillations, occurred in a 200,000-year interval of predicted high-climate variability, compared with 29% in the remaining 500,000 years of the Olorgesailie Formation (1.2-0.5 Ma). Integrated analysis of archeological and paleolandscape records at Olorgesailie illustrates (a) the adaptable responses of Acheulean hominins to landscape variability, and (b) the potential influence of prolonged high variability beginning ~356,000 years ago on the shift from Acheulean to Middle Stone Age. Collaboration with the National Museums of Kenya, and support by the Peter Buck Fund for Human Origins Research and the Ruth and Vernon Taylor Foundation, are gratefully acknowledged.

Poupart, Melanie [162] see Bisson, Michael

Powell, Shirley and Mark Varien (Crow Canyon Archaeological Center)

[67] Establishing the Genetic Distinctiveness of Hopi Corn: A Collaboration between the Hopi Cultural Preservation Office and the Crow Canyon Archaeological Center

The Crow Canyon Archaeological Center and the Hopi Cultural Preservation Office (HCPO), under the leadership of Leigh Kuwanwiswma, are conducting a long-term research and education initiative known as the Pueblo Farming Project. As one part of this project, Crow Canyon and the HCPO entered into an agreement to establish a database of Hopi corn lines. Our project uses DNA single sequence repeat (SSR) markers to determine whether there are differences among four morphologically distinct Hopi corn lines, and between the Hopi corn and other known corn genomes. The analysis examines the genetic distinctiveness of the Hopi corn lines, and the HCPO and Crow Canyon anticipate that these data can be used to protect the corn as intellectual property of the Hopi Tribe and to answer questions about Hopi history and prehistory.

In this presentation we focus on the lengthy and complex process that provided the foundation for this unique and productive partnership. Additionally we use the resulting data to evaluate both archaeological and traditional Hopi interpretations of the processes that led to the cultural landscape that today we know as Hopi. Finally, we offer thoughts about new directions for this creative collaboration.

Power, Robert (Plant Foods in Hominin Dietary Ecology - MPI for Evolutionary Anthropology), Arlene Rosen (The University of Texas at Austin) and Dani Nadel (Zimmern Institute of Anthropology, University of Hai)

[162] Phytolith analysis of Late Natufian site at Raqefet Cave in Mount Carmel, Israel

Raqefet Cave is a Late Natufian site on Mount Carmel in northern Israel. Although information is accumulating through phytolith analysis on Natufian plant use, we still have limited information on the way Natufians availed of plants for subsistence and other cultural activities due to the rarity of Natufian macrobotanical remains. Here we report on the results of a preliminary study of phytoliths from sediments in the site’s cave floor, carved bedrock features and burials. Some sediments revealed abundant and diverse phytolith morphotypes. These results may indicate the use of plants in both economic and symbolic behaviors by Late Natufians.

Praetzel, Adrian [99] Discussant
Prasciunas, Mary (WestLand Resources, Inc.), William Deaver (WestLand Resources, Inc.) and Fred Huntington (WestLand Resources, Inc.)

[130] Food or Fiber: The Archaeology of Agave Processing in Southern Arizona

Agave was an important source of food and fiber for most Native American groups living within its distributional range. Non-irrigation agricultural rock pile fields associated with agave cultivation have been identified at numerous localities across southern Arizona, and are generally associated with the middle and late Formative periods. Although the economic and social implications of subsistence- versus nonsubsistence-related agave processing are fundamentally different, the archaeological signatures of these activities are similar and few studies have attempted to differentiate between the two. This paper discusses potential methods for distinguishing between agave food and fiber processing, and describes the archaeology of what is interpreted to be an agave fiber processing locale associated with the Classic Period Marana Community in the northern Tucson Basin of southern Arizona.

Pratt, Trevor (CA Office of Historic Preservation) [53] Moderator

Pratt, William and David Brown (University of Texas at Austin) [178] The Cocina Perdida Site: Archaeological Survey in the Western Piedmont of Ecuador

Archaeological survey in the Malqui-Machay valley of western Cotopaxi province revealed a number of new sites from the late prehistoric and colonial periods, though the suspected Inka occupation remains poorly documented. While the late prehistoric period is still little understood, one small site yielded a single whole vessel that reveals much about the area’s late inhabitants. The buried kitchen remnants at this site suggest that at least some occupants may have struggled to survive in this valley that today lies well off the beaten path.

Prebble, Matiu [274] see Whitau, Rose

Prentiss, Anna (University of Montana) [120] The Archaeology of Housepit 54 during the Colonial Period at Bridge River

Housepit 54 at the Bridge River site (interior British Columbia), is the target of a multi-year archaeological research project funded primarily by the U.S. National Endowment for the Humanities. With approximately 13 superimposed anthropogenic floors, the housepit offers the opportunity for fine grained analysis of variability in complex hunter-gatherer-fisher organization in time and space. The 2012 excavations focused on the Colonial period occupation, likely dating to the early to middle 19th century C.E. This poster outlines the project and reviews results of excavations with a focus on stratigraphy, features, and dating. Conclusions are offered regarding occupation patterns.

Prentiss, Anna [120] see Prentiss, Anna

Prescott, Catherine [186] see Bailey, David

Prescott, Christopher (University of Oslo) [221] Chair

Prezzano, Susan [68] see Walker, Morgan

Prezzano, Susan [264] Landscape, Memory, and Archaeology in Northwestern Pennsylvania

Three seasons of excavations along the Clarion River within the Allegheny National Forest in northwestern Pennsylvania revealed a complex multicomponent site ranging from an early twentieth century mill town to a series of Middle Archaic fishing encampments that date as early as 8000 BP. These excavations at the Millstone site united several stakeholders, including town and county officials, state and federal agencies, university academics, undergraduates, and local high school students in the recovery of the past in a region that has seen little archaeological investigations. The results not only contributed to archaeological knowledge but provided legitimacy to the growing perception by residents and project partners of the intrinsic value of the natural environment of the region that in the recent past had been the focus of intense resource extraction, deforestation, pollution, and depopulation. The excavations provided validity to an emotional attachment to the landscape by linking its present use to a perceived past.

Price, T. Douglas (University of Aarhus) [17] Migration to and from Teotihuacan: An Isotopic Perspective

In the last two decades, new methods have appeared for directly assessing human movement in the past. Focused on dental enamel, these methods have employed isotopic ratios of strontium, oxygen, and sometimes lead to examine the mobility of the inhabitants of ancient Mesoamerica. A variety of studies have been conducted at Teotihuacán focused on both individuals and groups to assess questions such as migration and mobility with regard to age, sex, and status. In this presentation, examples of isotopic studies of migration using human remains from Mazapan, Oztoyohualco, Cueva del Pirul, the Moon Pyramid, the Temple of Quetzquauatla, and elsewhere will be discussed in detail to document the utility of these methods. The results of these studies show a high degree of mobility in and around the Basin of Mexico during the Classic period.

Price, T. Douglas [37] see Cucina, Andrea

Price, Neil (University of Aberdeen) [55] Nine Paces from Hel: Time and Motion in Old Norse Funerary Drama

The last decade or so has seen an increasing interest in the notion of performance and drama as integral elements in Viking-Age ritual. Among textual scholars, notably Terry Gunnell, we have seen great advances made in our understanding of how what we now know as Norse mythology was originally communicated and perceived. Archaeologists, including the presenter, have worked on the parallel realm of mortuary behavior and the complex practice of funerals. However, it is one thing to note the probable existence of ritual performance in these contexts, but a quite different matter to uncover what it was that actually happened. How were the postulated mythological dramas staged? Where did these plays find their audience? What really occurred at the gravesides of the Vikings? Using examples from the Old Norse prose corpus and recent archaeological finds, this paper will discuss the recovery of duration, spatial arena and specific action in performative ritual of the period.

Price, Gypsy (University of Florida) and John Krigbaum (University of Florida)

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Price, Gypsy (University of Florida) and John Krigbaum (University of Florida)
From Fields to Feast: Procurement and Consumption at Mycenae, Greece

The multivocality of food does not start at the dinner table or even in the kitchen, it begins with procurement. In the case of pastoralism, the management and distribution practices of fauna are part of the food signifies process. Human-animal interactions of both managed herds and wild game impact the meaningfulness of the consumption of faunal resources. I present preliminary results of an isotopic survey of fauna from Petsas House, a Late Bronze Age extra-palatial industrial and domestic structure at Mycenae, Greece. Stable isotope biochemistry permits changes in diet and movement across landscapes to be assessed for individual fauna associated with populations exploited for food (sheep, goat, cattle, deer, and boar). Disparities in provisioning of foddering strategies, as well as place of origin or herd patterning are visible using multiple isotope proxies (carbon, oxygen, nitrogen, and strontium). This research addresses questions concerning the meaningfulness of locality or origin and degree and type of human interaction when procuring faunal resources, both wild and domestic, for consumption in various social contexts at Mycenae during the Late Bronze Age.

Prieto, Oscar Gabriel [101] see Sutter, Richard

Pritchard, Erin [276] see Harle, Michaelyn

Privat, Karen (University of New South Wales, Australia), Shawn Ross (University of New South Wales, Australia), Adela Sobotkova (University of New South Wales, Australia) and Victoria Russeva (Bulgarian Academy of Sciences)

Paleodiary Analysis of Bronze Age Human Remains from Boyano, Bulgaria

The Bronze Age of the Eurasian steppe and border-steppe regions was a period of flux, with a tendency toward increased mobility for portions of communities or entire groups. The increasing economic dependence of humans upon their domestic herds in the Bronze Age and subsequent Iron Age is to some extent reflected in the archaeological evidence for a broad dietary shift toward the consumption of domesticated animal products over wild and agricultural resources. However, this trend is not uniform across the region, and paleodiary and paleoecological studies from a range of sites across the Eurasian steppe indicate that, at least at some sites, wild resources (e.g., fish) and agricultural resources (e.g., millet) contributed significantly to the diet of humans through the Bronze Age. In this study, we use stable isotope analysis of bone collagen extracted from 20 adults from the Bronze Age burial mound of Boyano in southeastern Bulgaria to examine dietary differentiation within the population (sex, age, outliers). The paleodiary trends identified are compared with comprehensive archaeological, osteological and botanical analyses from Boyano and other contemporary sites throughout the broader Eurasian steppe region to address issues of animal management, wild plant and animal exploitation, and social structure and mobility.

Prociuk, Nadya

Inscribing Identity: Symbolic Representation in the Castro Culture

The material remains of the Iron Age Castro Culture of northwestern Iberia display the repeated inscription of design motifs which distinguish them from surrounding groups. These designs appear to manifest a suite of symbolic concepts reflecting a sense of shared identification. Significantly, this set of symbolic identifications encountered the possibility of change at every re-inscription, perhaps reflecting fluid conceptions of identification. Though it may never be possible to accurately understand the meaning of the symbolic motifs to the Castro people, my research attempts to understand the social function of material culture repetitively inscribed with symbolic motifs.

In order to explore this possibility, my research focuses on 5 important characteristics of these motifs: context, repetition, visibility, association and commonality. Utilizing collections of ceramics, items of personal adornment, as well as domestic and monumental architecture, it may be possible to access the ways in which the people of the Castro Culture chose to represent aspects of a shared identification. This paper will present the theoretical foundations and work in progress of this research project.

Prost, Stefan (Allan Wilson Centre for Molecular Ecology and Evolution, University of Otago, NZ), Andrew Clarke (School of Life Sciences, University of Warwick, Co), Olga Kardailisky (Department of Anatomy, University of Otago, Dunedi), David Addison (Samoan Studies Institute, ASCC, American Samoa) and Lisa Matisoo-Smith (Allan Wilson Centre for Molecular Ecology and Evol)

[47] MdNA and Y Chromosome Evidence for the Origins and Population History of Tokelau

This study is part of National Geographic's Genographic project in association with the Tokelau Science Education and Research Project. We sampled cheek swabs and genealogical information from more than 150 individuals representing all three atolls: Atafu, Nukunonu and Fakaofo. We sequenced complete mdNA genomes and identified Y chromosome haplotypes to study population structure in the archipelago using standard and model-based analyses. We then compared the data to other Pacific populations. This paper presents those results and the implications for the origins and population history of the people of Tokelau.

Pruf er, Keith [36] see Robinson, Mark

Pruf er, Keith (University of New Mexico)

[256] A Multi-Proxy Regional Chronology for Southern Belize

Southern Belize is a geographically circumscribed region and one of the more ecologically diverse in the Maya Lowlands. Political centers are located in range of geological and biotic settings from the igneous Maya Mountains to the Caribbean Sea. With occupation at over 20 minor capitals spanning at least 1000 years, it is an ideal area to study processes of state formation and regional interaction. This presentation discusses the regional settlement chronology drawing on primary and archival data including ceramics, radiocarbon assays, monument dates, architectural styles, and settlement patterns.

Pryor, Alex [274] see Ussher, Ella

Pugh, Timothy (Queens College and The Graduate Center), Carlos Sánchez (Centro Universitario de Petén), Evelyn Chan (Centro Universitario de Petén), Miriam Salas (Centro Universitario de Petén) and Pablo Lizano (Centro Universitario de Petén)

[78] The Late Preclassic Occupation at Tayasal, Petén, Guatemala

Recent archaeological excavations at Tayasal, Petén, Guatemala have revealed that the site experienced its largest occupation during the Chichanel phase (300 BC-AD 200). At this time, a massive T-shaped platform was built in the site’s center and in some areas, the fill of this platform is over 7 meters deep. Chichanel phase developments also include triadic temple groups and surrounding residences. Excavations encountered a circular platform, which likely dates to the Chichanel phase. The lack of substantial Early Classic (AD 200-600) period materials at Tayasal indicates a hiatus at the end of the Late Preclassic period (300 BC-AD 200). A similar pattern was encountered at other sites in the Petén lakes region suggesting the possibility of a major population shift and/or collapse in the area at the end of the
Preclassic period.

Pugh, Timothy [140] see Shiratori, Yuko

Pugh, Christina (Washington University in St Louis), Daniel Pugh (Nazarbayev University) and Zachary Cofran (Nazarbayev University)

The Eurasian steppe is home to a staggering amount of archaeological wealth, but it has received proportionally little attention from Western archaeologists. With a rapid pace of development in the former Soviet republics, particularly Kazakhstan, many archaeological treasures are at risk. The president of Kazakhstan has recently commissioned a novel university project in his name, and heritage management is prioritized in various forms. The Nazarbayev University Laboratory of Anthropological Sciences (NULAS) is establishing a 21st century program of heritage management with three primary areas of focus: 1) bringing modern techniques to the steppe; 2) facilitating transfer of knowledge between English speaking archaeologists and colleagues working in Russian, Kazakh, and other local languages; and 3) providing a point of cooperation and support for foreign archaeologists working in the region. This poster reports on the development of this new program and presents strategies for upcoming projects.

Pugh, Daniel (Nazarbayev University)

Climate and Culture: Late Prehistoric Social Flux in the Central Plains

The mid-13th century saw major movements of population within, and more substantially out of, the Central Plains. The re-occupation of this territory over a century later set the social stage for the emergence of historically-known Plains tribes. Thus understanding exactly how and why these population shifts took place is critical for explaining the origins of the historic and modern tribes. Climatic models have often been invoked to explain the 13th century abandonment and by extension the later reoccupation, but several of the assumptions underlying those models have recently come into question and they deserve reevaluation. Re-evaluating the respective roles of culture and climate in these population movements has implications for the cultural origins of historic tribes and the ways that archaeologists understand historical relatedness.

Punke, Michele (Archaeological Investigations Northwest, Inc.)

The Surveyor Spring Site: An Ash-Flow Tuff Obsidian Source in South-Central Oregon

The Surveyor Spring archaeological site in southern Lake County, Oregon, is positioned on a landscape composed primarily of Pliocene- to Miocene-aged volcanic ash-flow tuffs. The tuff deposits are made up of indurated pyroclastic materials, including rhyolite, ash, pumice, and obsidian. The tuff deposits have weathered in place, revealing localized concentrations of obsidian nodules within the site. These obsidian concentrations served as an important raw material source for prehistoric people who lived in the area. This paper presents the complex geologic and geomorphic setting of this obsidian source, and discusses the nature of the site in relation to other obsidian-rich tuff deposits and archaeological sites in the area.

Punzo, Jose Luis (Instituto Nacional de Antropología e Historia)

The Chalchihuateños, Dwellers of the Hills in the Valley of Guadalu, south-central Durango, Mexico, a series of small villages began to appear on the summits of steep hills near the margins of rivers. This occupation has been referred to as the Guadiana branch of the Chalchihuites culture with a deep Mesoamerican tradition. Many researchers have regarded these summit villages and their architecture, especially terraces and modified narrow passages to access the summit, as a defensive reaction to a violent time. However, a broader consideration shows that the architecture, patios, pyramids, and ball courts on these hills reflect a profound worldview of landscape, life, and ritual during this time.

Purcell, Gabrielle (The University of Tennessee)

The Development of Maize Agriculture in the Smoky Mountains

Located in the Smoky Mountains of North Carolina, Smokemont is a multicomponent site that has evidence of occupation from the Early Woodland through Euro-American periods. Paleobotanical remains have been examined from two structures identified on the site, one Pisgah house and one Qualla house, as well as from Early and Middle Woodland features. Floral analysis of four Woodland pits indicates some horticultural activity, and wild plants continue to be important but supplementary to maize agriculture during the Mississippian and Cherokee occupations. This paper discusses the development of maize agriculture at Smokemont as indicated by plant remains collected in 2010 and 2012.

Purser, Margaret [111] see Wingard, John

Putsavage, Kathryn [236] see Scott Cummings, Linda

Putsavage, Kathryn (University of Colorado)

Social Transformations in the Mimbres Region of Southern New Mexico from A.D. 1150 to 1450: An Investigation of the Black Mountain Site (LA 49)

In the Mimbres region of southern New Mexico, the Black Mountain site (LA 49) is well-known but poorly understood because of long-term and extensive vandalism. Since the site is probably the largest post-Classic Mimbres pueblo in the Lower Mimbres Valley, research at the site could significantly add to current understandings of demographic and social transformations in the southern Southwest after A.D. 1130/1150. From 2010 to 2012, the University of Colorado conducted three seasons of field research examining two periods of social transformation at the Black Mountain site. The first period of transformation occurred around A.D. 1150 and represents the transition between the Classic Mimbres (A.D. 1000 to 1150) and Black Mountain phase (A.D. 1150 to 1250/1300). The second period of transformation represents the transition from the Black Mountain to the Cliff phase (A.D. 1250 to 1450). Both of these phase transitions encompass a range of transformative processes including population replacement and reorganization, changes in economic networks, adaptations to changing or new environments, and/or reorganization of social networks. The scale, chronology, and nature of these two transformations are not fully understood. This paper describes recent research at the Black Mountain site and provides new insight surrounding these complex social processes.

Pyburn, Anne (Indiana University)

Location, Location, Location: Population Movement and Maya Cities

No single archaeological site in the Maya area has all of the characteristics that have been attributed to cities, but most authors agree that at least some Maya of the classic period were urban. While population distribution and density have often been considered in attempts to understand Maya settlements, population movement, other than exodus, has not been the focus of much research. We observe the movement of goods, we
speculate about the movement of people carrying them, but we have drawn few conclusions about how the sort of large scale migrations that affected early cities elsewhere in the ancient world might have played a role in Maya political economy. In this paper I consider what aspects of material culture, if any, may be considered an index of migration, and whether migration must be considered a significant factor in understanding the life histories of prehispanic Maya cities.

[118] Moderator

[100] Discussant

Pye, Mary (New World Archaeological Foundation)

[4] Discussant

Pyszka, Kimberly [119] see Falls, Eva

QIAN, Wei (University of Science and Technology Beijing)

[93] Cast Iron Smelting in Early China: Archaeological Survey and Laboratory Simulation

Cast iron is one of the most important inventions in ancient China. The white cast iron specimens found at Tianma-Qucun Cemetery in Shanxi Province dated to 8th c. B.C. showed the earliest use of cast iron in China. Dozens of pre-500 B.C., cast iron artifacts have been unearthed from sites in Yellow River and Yangtze River valleys. The invention of cast iron smelting was strongly related to the technology, as well as the social demands, of cast bronze and ceramics in early China. A series of iron smelting furnaces were surveyed and measured with scientific methods. 3D laser scanning technology was applied to measure the hearths and walls of the shaft furnaces which was useful in reconstructing the furnaces. The smelting situations in the furnaces can be simulated by using the calculations with CFD software and the analysis of the slag and other remains in the smelting sites. The spatial evolution of the smelting furnaces shows why the ancient Chinese could produce liquid cast iron so early and how they continued on this technical route for so long time.

Qin, Zhen (Washington University in St. Louis)

[183] Studies of Iron Smelting Sites around Nanyang Basin during Warring States, Qin and Han Periods

From the Warring States period to the Han dynasty (475 B.C.-220 A.D.), a series of distinctive cast-iron based smelting technologies, which differed from bloomery technology in the Near East and Europe, were invented and adopted in Central Plain of China. Several clusters of iron smelting sites were found and excavated in the region, especially around the Nanyang Basin. The studies on these sites will contribute to deeper understanding of some focused archaeological issues, including early smelting technologies, patterns of site locations and relationships between iron production and the environment. This poster will first give a brief but comprehensive introduction to the archaecometallurgical work done around Nanyang Basin, especially on the smelting sites in Wugang and Xiping counties. Analyses of slags and iron products by SEM-EDS and metallurgical microscopy indicate that there was a complete system of iron production, including mining, smelting, melting and casting. Then in the poster, the author will show GIS-based spatial analyses of the distributional patterns of sites, which display that sites with different functions have evident divergences on slope and flow accumulation but identity on aspect. Finally, the interactions between smelting activities and ecology near the sites will be explored.

Quiggle, Robert (HDR Engineering, Inc.)

[270] Developing Strategies for Managing Cultural Resources at Large Hydropower Projects: A Case Study from the U.S. Gulf Coast

The management of archaeological and historic resources at large hydroelectric projects licensed by the Federal Energy Regulatory Commission presents unique challenges. Fluctuating reservoir levels, public recreation, and even routine maintenance activities all have the potential to adversely affect historic properties if proper management measures are not in place. This poster explores successful strategies for managing cultural resources at large hydroelectric projects through a case study of the Toledo Bend Project, a bi-state hydroelectric project on the U.S Gulf Coast. With over 1,100 miles of shoreline, the Toledo Bend Project is one of the largest hydroelectric projects in the United States, and over 400 archaeological resources have been reported within the project’s area of potential effects. Working on behalf of the licensees, HDR Engineering, Inc. led a diverse group that included the State Historic Preservation Officers, Indian tribes, and the U.S. Forest Service to develop a consensus Historic Properties Management Plan (HPMP) that will guide the management of archaeological and historic resources at the Toledo Bend Project for the next 50 years. The HPMP developed for this project serves as an example of how carefully considered management strategies can successfully balance preservation concerns with the efficient operation of large hydroelectric projects.

Qimby, Frank (Micronesian Area Research Center--Research Associate)

[95] The Mariana Islands and the Role of Early Modern Asia-Pacific Colonization in Globalization

The Marianas, a western Pacific archipelago astride the Manila Galleons’ return voyage from Acapulco, were the first Islands of Oceania Spain integrated into its Asia-Pacific colonial trading network. The indigenous people, known as Chamorros, traded with Spanish and other Europeans in the 16th and 17th centuries, facilitating the reception of a Jesuit-led mission in 1668. Resistance to the colony’s social transformation and political consolidation agenda led to the conquest of the islands, which became an official colony and way-station for Manila-bound galleons until 1815.

Quintus, Seth (University of Auckland)

[274] Intensive Food Production Systems in the Samoan Archipelago: A Case Study from Ofu Island, Manu’a group

Prehistoric food production systems in the Samoan archipelago have been referred to as non-intensive, based on historic era observation and little archaeology. However, more recent archaeological examinations on multiple islands of the group are calling this description into question, though no archaeological project has specifically examined food production. Research being conducted on Ofu Island, Manu’a, American Samoa, has this goal. Preliminary results suggest that swidden cultivation and multi-storey arboricultural gardens constitute the system complimented by landscape modifications in the form of ditches and terraces, the former densely distributed across the interior landscape. I argue that the impetus for the construction of these landscape modifications was multi-faceted, ditches, especially, functioning in different ways depending on both temporal and spatial context. While intensification models may be utilized to understand this system, a better understanding of the differences between this production system and systems elsewhere in Oceania requires an “unpacking” of the process.

R. Carl, DeMuth [188] see Wells, Joshua

Raad, Danielle (Massachusetts Institute of Technology) and